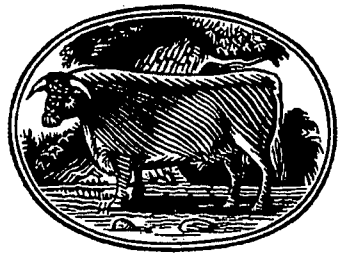
THE

AGRICULTURAL HISTORY REVIEW



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The British Agricultural History Society

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The Society aims to promote the study of agricultural history and the history of rural economy and society, amongst other ways, through (a) the publication of *Agricultural History Review* together with supplements and other apppropriate items; (b) the holding of conferences in its own right and in conjunction with other organizations; (c) the promotion of the conservation of historically significant landscapes and the rural environment; (d) the promotion of the teaching of the history of agriculture, the rural economy and society, and the environment, at all levels of education; (e) the promotion of links with societies and institutions in Europe and world-wide which have similar aims and objectives.

The society holds two conferences each year: a residential Easter conference (to be held at Winchester in 2003) and a London winter conference on the first Saturday in December. Details of these will be found in the *Review* and on the society's web pages. The society's conferences are open to non-members of the society.

Membership is open to all those who support the aims of the society. The annual subscription is £15 for individual subscribers and £35 for libraries and institutions. Subscriptions are due on the 1 February annually. A standing order form is available from the Treasurer. There is a reduced rate for students not in full time employment and those registered unemployed of £5. Full details can be obtained from the Treasurer, BAHS, c/o Department of History, The University of Exeter, Amory Building, Rennes Drive, Exeter, EX4 4RJ (e.mail BAHS@Exeter.ac.uk) to whom all applications for and correspondence concerning membership (including changes of address) should be directed.

Correspondence concerning all other aspects of the society's activities, including its conferences, should be directed to the Secretary, BAHS, Department of History, Royal Holloway, Egham, Surrey, TW20 0EX. Advance details of the society's meetings and other information concerning the society can be found on our web pages, http://www.bahs.org.uk/.

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Volume 50 Part I 2002

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JONATHAN THEOBALD recently received his doctorate from the University of East Anglia: his thesis was entitled 'Changing landscapes, changing economies: holdings in Woodland High Suffolk, 1600–1850'. He is currently lecturing for the Centre of Continuing Education at UEA. He has published two previous papers based on his thesis: one on landlord absenteeism and estate management in *Rural History*, and the other on changing farm sizes in early-modern Suffolk. Address: 20 Warwick Road, Ipswich, IP4 2QD.

Forthcoming Conferences, 2002

The Assocation for the History and Rural Societies, The British Agricultural History Society and the Centre for anthropological history of the University of Maine

COMPARATIVE RURAL HISTORY/HISTOIRE RURALE COMPAREE

There will be a joint conference on the comparative rural history of Britain and France, organised by the British Agricultural History Society and its French counterpart, L'Association d'histoire et Sociétés Rurales at the University of Maine (Le Mans) on 12–14 September 2002.

The main themes on which papers will be given are: social differentiation in the village; the role of women since the seventeenth century: agricultural production as evidenced by probate records. Papers will be given by both British and French speakers. Proceedings will be bilingual with summary translations provided.

Only a limited number of places are available. Further information may be obtained from the British organiser, Prof. John Chartres, School of History, University of Leeds, Leeds, LS2 9JT (j.chartres@Leeds.ac.uk). The full programme may be viewed on the British Agricultural History Society website (http://www.bahs.org.uk).

Rural History Centre, University of Reading and British Agricultural History Society

JOAN THIRSK AT EIGHTY

A celebration of the work and continuing contribution of Joan Thirsk to economic, social and rural history will be held at the University of Reading, 20–21 September 2002.

Speakers will include Paul Brassley * John Broad * John Chartres * Chris Dyer * Peter Edwards * David Hey * Richard Hoyle * Pat Hudson * Nicola Verdon with an open lecture by Joan Thirsk, 'Our food, four hundred years ago' at 7.45, Friday 20 September.

A full programme can be found on the BAHS and Rural History Centre websites. Booking forms are enclosed with this issue of the Review but may also be found on the websites. Residential accommodation is available for the evening of 20 September.

British Agricultural History Society

The Society's Winter Conference will be held at the Institute of Historical Research, London, on 7 December 2002 on the theme of Popular Politics in Rural England.

Announcements

Golden Jubilee prize essay competition, 2002

To mark the celebration, in 2003, of the fiftieth anniversary of the founding of the British Agricultural History Society, the Society invites submissions for its Golden Jubilee prize essay competition.

The author of the winning essay will be awarded a prize of £500 and the author of the essay judged to be *proxime accessit* £250. It is intended that the prize winning essays will be read at the Society's Spring Conference in 2003 and published in *Agricultural History Review.*

There is no restriction on the subject matter of the essays save that they fall within the remit of the *Review.* The competition is open to all, with no restrictions on age, but essays from younger authors, and those employing new methodologies or exploring new areas of interest will be especially welcomed. Essays should be no longer than 10,000 words including footnotes and any appendices. They should be submitted in the house style of the *Review* and intending authors are asked to obtain a copy of the *Review's* 'Guidelines for contributors' from the editors or direct from the Society's web site at http://www.bahs.org.uk.

The essays will be judged by a panel appointed by the Executive Committee of the Society.

Three copies of each essay should be sent to the Secretary of the Society, Dr John Broad, School of Arts and Humanities, University of North London, 166–220 Holloway Road, London N7 8DB. The author's names should not be on the title page but on a separate detachable cover sheet. The latest date for the submission of essays is 30 September 2002.

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Agricultural productivity in Woodland High Suffolk, 1600–1850

by Jonathan Theobald

Abstract

The recently published work by Turner, Beckett and Afton has highlighted the fact that historians interested in evaluating land productivity in early-modern England have far more than just probate inventories at their disposal. This paper utilizes complementary sources in order to counteract the obvious flaws and limitations of the inventory. From this the paper has been able to glean new livestock and grain yield data for Woodland High Suffolk and these are placed in the context of agrarian change in the district. Its conclusions as to if, when and how the district 'revolutionized' its means of producing food for the nation, lend support to the recent findings of historians such as Turner, Overton and Williamson.

Though recent work by Turner, Beckett and Afton has clearly shown the wide range of farm records available to the agrarian historian, there is little doubt that the probate inventory remains of central importance.[1] The lack of any similarly detailed series of records has meant that researchers interested in the material culture and farming of this period have been inexorably drawn to these documents. Although many approaches have been taken to the analytical study of inventories, those of particular interest to the purposes of this paper include the various case studies undertaken since 1970 whose principal aim was to determine trends in land productivity. These include the analyses of large samples of probate inventories for Worcestershire by Yelling, Norfolk by Overton, Oxfordshire by Allen and Hertfordshire by Glennie.[2] Each one of these exercises has had to devise or refine methods to overcome the shortcomings and flaws inherent in the inventory. Nevertheless, though these case studies have helped develop reliable techniques for calculating grain yield data from inventories, the study of livestock from these sources is still somewhat in its formative stages. Hence, there is no need to apologize for

[1] M. E. Turner, J. V. Beckett and B. Afton, *Farm production in England, 1700–1914* (2001).

[2] J. A. Yelling, 'Probate inventories and the geography of livestock farming: a study of East Worcestershire, 1540–1750', *Trans. Institute British Geographers* 51 (1970), pp. 111–26; M. Overton, 'Estimating crop yields from probate inventories: an example from East Anglia, 1585–1735', *JEH* 39 (1979), pp. 363–78; idem, 'Re-estimating crop yields from probate inventories', *JEH* 50 (1990), pp. 931–5; idem, 'The determinants of crop yields in early modern England', in B. M. S. Campbell and M. Overton (eds), *Land, labour and livestock: historical studies in European agricultural production* (1991), pp. 284–322; M. Overton and B. M. S. Campbell, 'Norfolk livestock farming, 1250–1740: a comparative study of manorial accounts and probate inventories', *J. Hist. Geog.* 18 (1992), pp. 377–96; R. C. Allen, 'Inferring yields from probate inventories', *JEH* 48 (1988), pp. 117–25; P. Glennie, 'Continuity and change in Hertfordshire agriculture, 1550–1700, II, trends in crop yields and their determinants', *AgHR* 36 (1988), pp. 145–61; idem, 'Measuring crop yields in early modern England', in Campbell and Overton (eds), *Land, labour and livestock*, pp. 255–83.

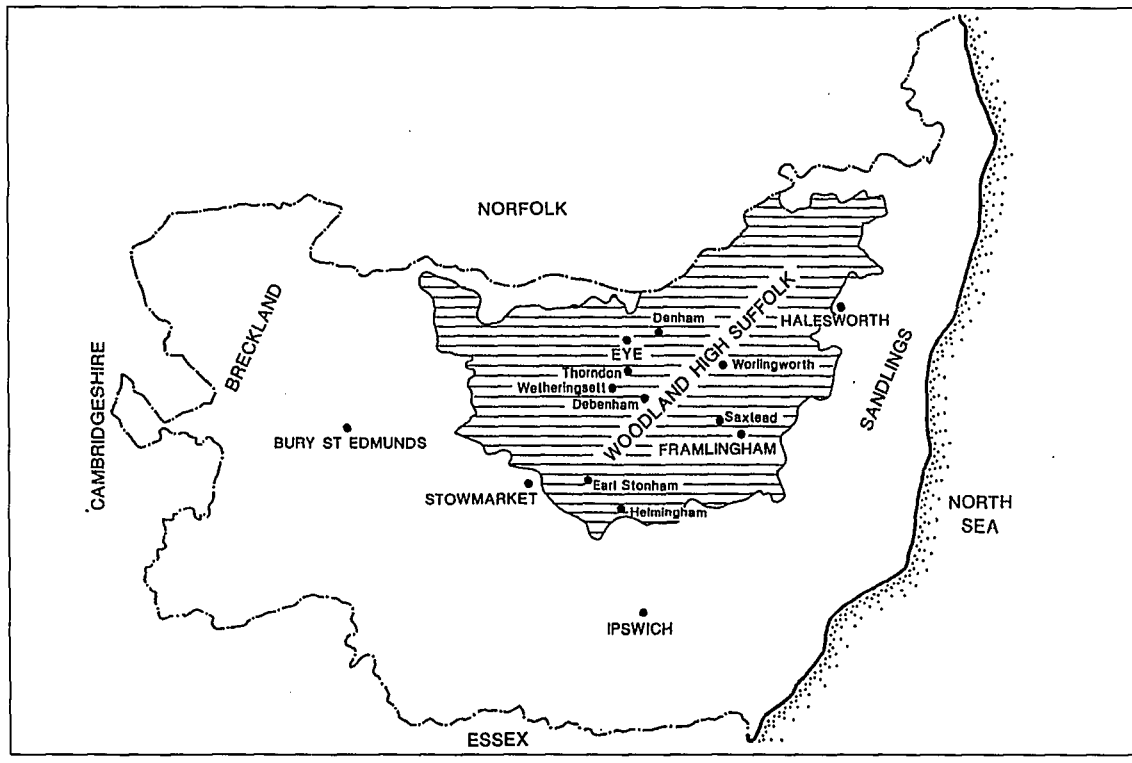


FIGURE 1. Woodland High Suffolk.

offering inventory-based figures for a new area. It is the aim of this paper both to advance the methodologies previously employed and to offer new empirical data from inventories for Woodland High Suffolk (Map 1). Data will be presented to illustrate trends in agricultural productivity both for the livestock and arable sectors in the region. This inventory data can be used to calculate overall increases in farm outputs once complementary information is provided concerning changes in farm production. Possible explanations for these productivity trends will be then be suggested. Finally, the paper intends to reflect on the present juncture reached in the historiographical debate concerning a 'revolution' in English agriculture, and evaluate what contribution the new figures can make to the argument. This paper's findings broadly support the conclusions stated in the last decade by Overton and Campbell, Williamson and Wade-Martins, and Turner, Beckett and Afton; that the 170 years after 1700 was the critical period of agricultural improvement and innovation.[3]

Woodland High Suffolk differs greatly from the areas covered in the case studies listed previously. They were, in the main, studies of whole counties, containing within them sharply contrasting agricultural regions. Woodland High Suffolk stands as a homogeneously distinct

[3] 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); S. Wade Martins and T. Williamson, *Roots of Change: farming and the landscape in East Anglia, c. 1700–1870* (Agricultural History Review, supplement ser. 2 1999), p. x; Turner, Beckett and Afton, *Farm Production.*

farming district. Yelling stressed the importance of defining such 'true' agricultural regions when working with inventories, but suggested that these districts could be located by synthesising data that was provisionally arranged into small sub-regions. These initial groupings had been generated in a purely non-critical, 'a priori' manner.[4] The boundaries of Woodland High Suffolk, on the other hand, have been strictly defined by physical considerations. The terrain and soil within the region varies little throughout; the district, and the data extracted from it, therefore has geographical integrity.

Moreover, most earlier studies have discussed predominently arable regions. Hertfordshire, north Oxfordshire, south Worcestershire and north-west Norfolk were sheep/corn arable districts, dominated by light soils and open fields. Only the clay vale of Oxfordshire, the north-east of Worcestershire and south-central Norfolk were early enclosed, heavy land districts, chiefly geared towards pastoral, dairying pursuits. The characteristics of Woodland High Suffolk are firstly that the soil found in the district is chiefly heavy and impermeable clay marl, with lighter gravelly soils only present on the valley sides and bottoms near rivers and streams, and secondly that the area is a high plateau, predominantly 50 metres above sea level. In Wade Martins and Williamson's *Roots of Change* the area constitutes a major part of their Central Claylands.[5] The district was typical 'ancient' countryside, as defined by Rackham, largely enclosed by 1600, with farms and estates that were of a relatively modest size compared to other areas of East Anglia.[6] In the seventeenth and eighteenth centuries the area was predominently pastoral in nature. Dairying was the mainstay of the economy until the French Wars, when significant tracts of grassland were ploughed up; by 1850 farmers had only a limited amount of their land under pasture and meadow. This switch – inside a century – from dairying to a mainly arable system makes the region a particularly interesting choice to examine changes and improvements in farm production.

Whilst three repositories were utilized when collecting the inventory data included in this paper, the inevitable disadvantage of having a limited catchment as a study area was that the final sample size of usable inventories was modest. The size of sample used to calculate livestock proportions and densities was 61; while 98 inventories were analysised when calculating crop yields.[7] Moreover, due to the shortage of pre-1650 inventories, crop yields have only been calculated from 1660 onwards; while only four examples have been included in the livestock tables for the period 1587–1669. Naturally, with such a limited sample, these figures must be treated with extreme caution. Both inventory samples were fairly well distributed across the region though the livestock figures had two concentrated areas around Framlingham and Helmingham. The livestock sample also had a reasonably even distribution of farm sizes. Eleven farms in the sample were between 20 and 50 acres in size, 23 were between 51 and 150 acres, 17 between 151 and 150 acres, and lastly, 10 between 251 and 360 acres. Though this is likely to be a reasonably fair depiction of farm sizes at the time, it could well be that the smallest size group

[4] Yelling, 'Probate inventories', pp. 112–13.

[5] Wade Martins and Williamson, *Roots of Change*.

[6] O. Rackham, *The History of the Countryside* (1986), pp. 3–5. For more information about the development of the Suffolk clayland landscape in the early modern period, see J. Theobald, 'Changing landscapes, changing economies: holdings in Woodland High Suffolk, 1600–1850' (unpublished PhD thesis, University of East Anglia, 2000).

[7] Due to the fact that crops in the field could not be properly valued until the summer months of each year, the sample only uses inventories made between May and early August.

is under-represented. As inventories become increasingly scarce after 1750, complementary sources have been used to complete figures for both crop yields and livestock data after this date. For example, supplementary crop yield data has been gleaned from contemporary agricultural writers such as Arthur Young, the Raynbirds and Caird. The livestock figures given for the period 1786–1803 in Tables 1, 2 and 6 have been extrapolated from five late inventories, three sale particulars and six detailed farm surveys made in the early 1790s for a tithe dispute in the parish of Flixton.

The methodology used to calculate the livestock figures presented below has been adapted from Yelling's case study of east Worcestershire and Campbell and Overton's Norfolk research.[8] There is one significant difference from earlier calculations, and this is that livestock densities have been calculated by the number of beasts per 100 acres of total farm area, rather than just cereal acres. Though Campbell and Overton accepted that the figures produced by using this method would have been more reliable, they had to adapt their workings to the limits of probate documents. Inventories, of course, only give arable acreages, and not the total farm area being surveyed. However, if inventory data can be used in conjunction with other complementary sources (as Glennie suggested in 1988) it may be possible to overcome this problem.[9] Estate papers such as rentals, leases, surveys, sale particulars and maps can all be very helpful in ascertaining which farm is being surveyed in probates. Twenty-three farms have been located this way on the Rebow, Tollemache (Helmingham Hall), Grimston, Pettus, Heveningham Hall, Gislingham Town, Mendlesham Town and Pembroke College estates. Consequently, the majority of inventories used in this article are those describing tenant farms. Occasionally, probates can be placed by field names listed within the document, or much less frequently by the actual farm name being given alongside the tenant's name. Nine holdings have been located by these two methods. Tithe surveys, especially in the late eighteenth century, can also be of use. Eleven holdings have been located this way in the sample.

Of course, it can be problematic to affix total acreages to located holdings. For instance, though Tithe Award documents give accurate totals of all holdings in the region, farm sizes may have changed between the earlier source and *c.* 1840. Nevertheless, if they are reasonably contemporaneous to the inventory it is usually possible to ascertain reasonably accurate acreages for each farm by the use of one or more of the above sources. Furthermore, where a tenant rented more than one farm, it is usually acknowledged within the probate. Certainly, the level of inaccuracy is unlikely to have much impact on the figures given below, making the exercise both worthwhile and valid.

Once a total acreage has been obtained, it is usually possible to estimate fairly accurately the proportion of land in tilth. Of course, surveys and maps with land use given, and dated close to the inventory, are the most reliable for this purpose. However, even probates not taken through the summer months of May to August can still give a reasonable idea of the extent of arable on the farm. Most winter probates record wheat acreages, and multiplying this figure by three or four, depending on the likelihood of a three or four-course shift being employed (i.e. wheat being either roughly a third of fourth of the arable acreage), gives at least a usable

[8] Yelling, 'Probate inventories', pp. 111–26; Campbell and Overton, 'Norfolk livestock', pp. 377–96; idem, 'A new perspective', pp. 38–105.

[9] Glennie, 'Continuity', p. 152.

estimate of arable land. This amount can be compared to the number of adult farm horses listed; approximately one working horse was needed for every ten acres in the region. Of course this figure was highly dependent on the type of soil to be tilled, and this accounts for Susanna Wade Martins' higher Norfolk estimate of one horse for every 20 acres.[10] Occasionally, ploughing restrictions in leases can also give some indication to the amount of land in tilth.

Although obtaining livestock proportions was far less complicated than calculating livestock densities, these figures have had to be weighted using feed requirements. Obviously, the fodder inputs needed for one milk cow are not the same, for example, as those for a sheep. The calculation used here is the one first devised by Yelling, and further adopted by Campbell.[11] Livestock units are calculated as follows: milk cattle, 1.2 units; immature cattle, 0.8; beef cattle, 1.2; sheep, 0.1; swine, 0.1; and horses, 1.0. It is likely, however, that the weightings for both sheep and swine are set too low here; they may be as high as 0.5 or 0.6 units. The oxen category, as used by Campbell, is redundant in our period; more relevant is the comparison between dairy and beef beasts. Only cows are included in the milk category, whereas heifers, buds, calves, bullocks and steers are all included in the immature category; scots, bulls and 'dry beasts' make up the beef category. Both adult and immature are counted together in the sheep, swine and horse categories.

The methodology used to calculate crop yields (i.e. wheat, barley and oats) was first developed by Mark Overton in 1979. In this original calculation the average value of one acre of each crop was divided by the corresponding average grain price per bushel; the resulting figures are therefore given as bushels per acre.[12] However, Allen and Glennie suggested in the late 1980s that the appraisers of inventories would have deducted labour costs such as reaping and carting, and tithe payments to the church from the expected sale price. Consequently, Overton amended his original equation to take into account such payments. Thus, the new equation for calculating yields was set out in 1991 as

$$y = \frac{(0.9c + r + v)}{0.9pi}$$

where y is the yield in bushels per acre, c is the cost of carting grain per acre, r is the cost of reaping per acre, v is the valuation per acre of growing grain and pi is the inventory price per bushel after harvest. Reaping and carting cost estimates based on a wide variety of sources were also given with this equation and have been used in the calculations given below.[13]

It has to be noted, however, that Overton's crop yield figures were calculated on a county basis, and not just for one distinct sub-region. The main benefit of this approach is that a far larger sample of inventories could be gathered together then is possible in this paper. However, it is possible that by combining the data from very different physical regions, as is the case in Norfolk, to produce one set of figures, Overton disguises and smooths out some of the particular traits of each area. This point is reinforced by examining Wade Martins and Williamson's crop

[10] S. Wade Martins, *Historic Farm Buildings* (1991), p. 172.

[11] B. M. S. Campbell, 'Land, labour, livestock and productivity trends', in Campbell and Overton (eds), *Land, labour and livestock*, pp. 156–7.

[12] Overton, 'Estimating crop yields', pp. 363–78.

[13] Overton, 'Determinants of crop yields', pp. 298–300. The reaping cost estimate for wheat was 5s per acre, while the figure for barley and oats was 2s. The carting cost estimate for all grains was 1.5s per acre.

yield estimates in *Roots of Change*. Though the size of their samples are very small, due in part to their virtuous decision to use only probate inventories where the yield can be directly calculated, they divide Norfolk and Suffolk into various districts based on soil properties and estimate yields for each one.[14] Their results indicate that the yields for each grain crop 'display different scales and chronologies of improvement' from region to region. It is possible, therefore, that the large increases in barley yields in Woodland High Suffolk after 1660 which are outlined in the next section are not as evident in Overton's figures due to his method of aggregating data from disparate farming regions into a single value.[15]

I

As Woodland High Suffolk was predominently a pastoral district, it is appropriate to turn first to the conclusions of the analysis of livestock productivity derived from the inventories. Tables 1 and 2 show that trends in livestock proportions and densities follow each other closely. The principal beast in the landscape was, of course, the milk cow, locally the Suffolk Dun, which for at least the first 180 years of our period formed between 57 and 62 per cent of the region's livestock units. There were roughly between 14 and 16 cows per 100 acres throughout this period, with the 1750s to the 1780s having the highest densities. As the region's farmers began to reduce their stocks through the Napoleonic Wars, milk cattle proportions fell to roughly 43 per cent of livestock units and the density to ten per 100 acres. Other sources suggest that these figures are reliable. For instance, at the very beginning of the 1747–1785, period a lease for Cherry Tree Farm, Bacton instructed that roughly 18 cows per 100 acres were to be kept each year on the holding.[16] At the very end of the same period Arthur Young suggested that there were, on average, 16 cows per 100 acres throughout the region.[17] The corresponding figure in Table 1 is 16.5. Likewise, the figure for the following period of 1786 to 1803 is 9.9 cows per 100 acres, and leases for Great Lodge and Countess Wells Farms at Framlingham in 1806 prescribed that roughly eight cows per 100 acres were to be kept.[18]

Other trends worth noting from the tables include the increase in immature cattle after the mid-1660s. The ratio of immature cattle to adult milk cattle more than doubled between the first two periods; the figure rose from 0.22 to 0.49 and this was principally due to the discernible rise in the number of steers, bullocks and heifers listed in inventories. A similar pattern has been found by Campbell and Overton in Norfolk.[19] This level is nearly maintained for the next two periods, but the figure rises more substantially to 0.80 when dairy herds begin to decline. Adult beef stocks stay reasonably constant, although there is a drop in the 1747–85 period. Sheep proportions and densities hover between two and three per cent, and six and ten per hundred acres, respectively; sheep seem to have been more widespread in the period 1670 to 1714. Conversely, horse numbers fall after 1670, and do not recover to the earliest density of five per

[14] Wade Martins and Williamson, *Roots of Change*, pp. 158–170.

[15] Overton, 'Determinants of crop yields', p. 302.

[16] Public Record Office (hereafter PRO), C112/181.

[17] A. Young, 'Minutes relating to the dairy farms of High Suffolk, taken at Aspall, the seat of the Rev. Mr. Chevallier, in January 1786', *Annals of Agriculture* 27 (1786), p. 214.

[18] Pembroke College Archives, Cambridge, (hereafter PCAC), Framlingham Y49; Suffolk Record Office, Ipswich, (hereafter SROI), GB10/1/1.

[19] Campbell and Overton, 'A new perspective', p. 82.

TABLE 1. Livestock per hundred farmland acres.

	1587–1669	*1670–1714*	*1715–46*	*1747–85*	*1786–1803*
sample size	4	21	14	8	14
Mean farm size	66	136	190	204	156
Milk cattle	15.2	13.5	14.2	16.5	9.9
Immature cattle	3.4	6.6	6.0	7.2	7.9
Beef cattle	1.9	1.9	1.4	0.9	1.8
Sheep	13.3	8.9	5.7	10.2	9.0
Swine	3.0	3.8	3.9	9.7	14.4
Horses	4.6	3.1	3.1	4.2	5.0
TOTAL					

Notes: The sample sizes are as follows: 1587–1669, 4; 1670–1714, 21; 1715–46, 14; 1747–85, 8; 1786–1803, 14. The arable proportion for farms 1587–1669 – 1715–46 is calculated to be in the range 15–30% (except for seven farms in the sample); for 1747–85 it is calculated to be 30–40% (except for one farm); and for 1786–1803 it is 40–70% (except for one farm).
Source: all probate inventories listed in Appendix 1.

TABLE 2. Livestock units.

	1587–1669 (%)	*1670–1714 (%)*	*1715–46 (%)*	*1747–85 (%)*	*1786–1803 (%)*
Milk cattle	61.9	57.5	61.7	60.3	42.7
Immature cattle	9.2	18.8	17.4	17.6	22.9
Beef cattle	7.8	8.3	6.1	3.1	8.0
Sheep	4.5	3.2	2.1	3.1	3.3
Swine	1.0	1.3	1.4	3.0	5.2
Horses	15.6	10.9	11.3	12.9	17.9
TOTAL	100.0	100.0	100.0	100.0	100.0

Note: the sample sizes are as in table 1.
Source: All probate inventories listed in Appendix 1.

hundred acres until the final period of 1786 to 1803. However, the most pronounced change in trends is reserved for swine stocks. Though proportion and density figures stay constant up to 1746, by 1803 both numbers have nearly quadrupled.

The figures obtained from non-inventory sources for the period after 1803 clearly indicate the dramatic move away from dairying in the region. A sale catalogue for Goswold Hall, Thrandeston, *c.* 1810, for example, shows that all cattle types on the farm had been reduced, but the fall in milk cattle densities was by far the largest (Table 3).[20] There were only 3.7 dairy cows per 100 acres, while immature cattle numbered 5.3 per 100 acres and beef cattle 0.5 per

[20] SROI, HD291/1.

TABLE 3. Livestock densities for Goswold Hall, Thrandeston, *c.* 1810.

Type of beast	*Milk cattle*	*Immature cattle*	*Beef cattle*	*Sheep*	*Swine*	*Horses*
No of beasts	7	10	1	0	32	17
% units	22.2	21.1	3.2	0	8.5	45
No per 100 farmland acres	3.7	5.3	0.5	0	17	9

Note: Goswold Hall was a farm of 188 acres.
Source: SROI, HD291/1.

100 acres. Though there were no sheep present on the holding, swine and horse numbers seem to have been increasing further. There were 17 per 100 acres of the former animal and 9 per 100 acres for the latter. Moreover, there seems little to choose between these figures and those compiled forty years later for the same farming region, the 1854 crop returns finding that there were 3.6 milk cattle and five immature and beef cattle per 100 acres. Swine densities were also roughly at the same levels as the Goswold Hall data, namely 17.5 per 100 acres. Sheep numbers seem to have increased markedly by the 1850s, with 44.4 kept per 100 acres, while horse densities were roughly at five per 100 acres.[21]

Though it has therefore been possible to show changes in the proportion and density of livestock kept in the region, a lack of documentary evidence prevents us from determining improvements in the productivity of farm stock. Much of the work completed on this subject in the past has had to rely heavily on national prices and contemporary commentators such as Gregory King for their data. From such material Overton has suggested that though the turnover of cattle in the eighteenth century was increasing, there was little improvement in the amount of meat produced from each beast.[22] There is little doubt in his mind, however, that pig weights and sizes were rapidly increasing in the eighteenth century. He notes that the price of pigs relative to cattle had more than doubled between 1600 and 1750.[23]

Corn yield trends for the region can now be given. Estimated grain yields for the period 1660–89 show that roughly 15 bushels of wheat, 18 bushels of barley and 17 bushels of oats could be produced per acre on average (Table 4). In Campbell and Overton's opinion, these were yields at 'essentially medieval levels'.[24] However, this ceiling was breached by the figures for the following period, 1690 to 1719. Wheat yields rose by two bushels, barley by eight, and oats by six. For the rest of the eighteenth century wheat levels rose steadily, but undramatically; the rises were reasonably uniform, except for a lull in the middle decades of the century. Barley and oat yields rose more erratically; the initial steep climb was followed by fifty years of stagnation, and then another pronounced increase at the end of the century. In the first half of the nineteenth century wheat and barley yield trends followed each other very closely. There is a hiatus in the figures between 1800 and 1836, followed by the largest rise for the whole of our period. Increases that had taken over a century to accumulate were produced again in

[21] J. P. Dodd, 'Suffolk crop returns of 1854', *Proc. Suffolk Inst. Arch.*, 34 (1979), pp. 191–204.

[22] M. Overton, 'Re-establishing the English Agricultural Revolution', *AgHR* 44 (1996), pp. 13–14.

[23] M. Overton, *Agricultural Revolution in England: the transformation of the agrarian economy, 1500–1850* (1996), p. 115.

[24] Campbell and Overton, 'A new perspective', p. 74.

TABLE 4. Crop yields, 1660–1850.

	Wheat	*Barley*	*Oats*
1660–1689	(20)	(14)	(7)
	15.5	18.3	17.2
	(23)	(8)	(8)
1690–1719	(16)	(8)	(2)
	17.5	26.7	23.3
	(26)	(7)	(4)
1720–1749	(4)	(7)	
	19.6	27.4	
	(30)	(20)	
1750–1769	(7)	(7)	(2)
	20.1	25.3	22.7
	(5)	(5)	(3)
c.1800	22	32	36
1836	23.2	32.4	36.9
1850	32	44	

Notes: The top figure in brackets is price per bushel sample number; the bottom figure in brackets is valuation per acre sample number.
Source: Figures for 1660–1689 – 1750–1769 are drawn from the sample of probate inventories as listed in Appendix 1; figures for *c.*1800 drawn from Young, *General view of Suffolk*, pp. 71–6; for 1836 from R. J. P. Kain, *An atlas and index of the tithe files of mid-nineteenth century England and Wales* (1986); for 1850 from J. Caird, *English agriculture in 1850–51* (1852).

barely 15 years. These patterns in yields have many similarities with the trends described by Overton and particularly those reported by Wade Martins and Williamson in *Roots of Change*.[25]

II

Before these figures can be used to estimate agricultural outputs, some understanding is needed of the changing nature of farm production in the region. Perhaps the most important issue in this context is the dramatic and relatively rapid switch from a pastoral dairy-led economy, to one dominated by arable production. Up to 1750 the region was mostly under grass, with farmers usually having only between 15 and 30 per cent (typically 20 per cent) of their land under the plough in any one year. Only the smaller farms of 50 acres or less had a greater proportion of their land in tilth in this period, and this was normally between 40 and 50 per cent. These land use ratios were in place till at least the late 1740s, but after this time grassland was gradually converted to arable. This transition progressed steadily over the following four decades, so that by the early 1790s most parishes had reached a point where arable and grassland could be found in equal measure. The livestock data given above has already shown the region's farmers were

[25] Overton, 'The determinants', p. 302; Wade Martins and Williamson, *Roots of Change*, pp. 157–170. One noteworthy difference between this paper's findings and Overton's figures is that Overton's barley yields were less pronounced between 1660 and 1740. Overton's wheat and barley yields are closer together in this period, with no more than 1.5 bushels between them.

still dairying at this point, albeit with slightly reduced milk cattle densities. Though not of major concern to the purposes of this article, it is likely that this initial shift in the local economy was stimulated by both positive and negative factors. For example, it seems probable that the gradual rise in grain prices between 1750 and 1790 encouraged the region's farmers to break with the established status quo and put more of their land in tilth. In addition, the outbreak of the cattle plague in the late 1740s and the loss of the naval cheese contract in the following decade probably undermined the confidence of many of Suffolk's dairy farmers. Of the two misfortunes, it is possible that the cattle plague had a greater impact on the local economy. To restock part or all of ones' herd would have been a considerable financial burden, and even if landlords helped their tenants in this respect (as was the case at Cherrytree Farm, Bacton in 1748), it would still take a number of years to build up a quality-milking herd.[26]

Nevertheless, the twenty or so years of the French Wars altered the farming economy of the region for good. By the end of hostilities in 1815 most farms had 65 to 70 per cent of their land under the plough. For many farms the five years either side of 1800 saw as much land being broken up as occurred in the previous forty. As a rule, if farmers had not sold the majority of their dairy herds by 1815, they did so in the five years following the end of the war. The transition to arable had therefore been largely completed by 1820, and this is shown by the fact that land use ratios had barely altered when the Tithe Award documents were drawn up twenty years later. According to these sources most of the region's farms had only between 20 and 25 per cent of their land under grass, a direct reversal of the situation in place at the beginning of the period studied here.[27] This second wholesale shift to arable was chiefly brought about by the dramatic surges in grain prices seen through the French Wars, and by the adoption of more comprehensive schemes to drain land and counteract soil acidity in the region. Though there are a few examples of landlords, such as the Fellows of Pembroke College, Cambridge, initially preventing their tenants from moving away from dairying, most were persuaded of the merits of ploughing up grass lands when healthy increases in rent were offered in return.[28]

There is little doubt, then, that arable acreages in the region increased dramatically between 1750 and 1850, but was there a noticeable change in the type of produce taken from the land? To start with, the region's arable fields were farmed in a three-course system in the seventeenth century with the basic principle that two corn crops were to follow a fallow, or 'summerland'. It was usual for the wheat crop to follow the fallow shift, and barley or oats to follow wheat.[29] Probate inventories suggest that wheat was the principal crop grown and that barley and oats shared the following shift: however, barley certainly seems to have been grown more frequently and in greater quantities than oats in the second half of the century.[30] A good example of this cropping system in action can be seen on a farm at Horham in the mid-1660s. In 1664, for example, the holding's arable land was farmed in the following way: 14 acres (34 per cent) of wheat, 15 acres (37 per cent) of barley and oats and 12 acres (29 per cent) lying fallow.[31]

[26] PRO, CRES 2/1179, small bundle of letters.

[27] Theobald, 'Changing landscapes', pp. 26–48.

[28] PRO, C112/181. It would indeed be interesting to determine whether the farms most severely hit by the plague were those that brought in 'fair' cattle most frequently.

[29] Theobald, 'Changing landscapes', p. 113.

[30] B. A. Holderness, 'East Anglia and the Fens', in J. Thirsk (ed.) *The Agrarian History of England and Wales V, 1640–1750* (2 vols, 1985), I, pp. 218–19; Theobald, 'Changing landscapes', p. 114.

[31] PRO, E134/20Chas2/East. 18.

Though it is very likely that pulse crops such as beans and peas were occasionally grown in part or all of the fallow course before 1650, an important innovation came in the last third of the seventeenth century when the field turnip began to be cultivated in this shift. Overton has suggested that the adoption of the root in Norfolk and Suffolk begun in earnest in the 1670s.[32] This statement is supported by information in tithe suit depositions. One such document suggests that turnips were first grown in the Spexhall district (near Halesworth) around 1670, and that before this time the crop was 'such a rarity that not one farmer in twenty had an acre of turnips growing'.[33] By the 1690s farm leases were beginning to note that tenants could plant their fallows with turnips if they saw fit. Overton has suggested that by 1710, 50 per cent of farmers in Norfolk and Suffolk were growing the root.[34] The normal procedure when growing turnips was to sow the crop in late June or early July after the last harvest, and extract the crop between December and late February. This method of cultivation had an impact on the order of rotations, which was that barley or oats had to now be grown straight after the fallow shift rather than wheat. The reason for this was that when wheat needed to be sown in October the root was in full growth. Barley and oats, on the other hand, could be sown soon after the the turnip crop had been pulled as they were both spring-sown cereals.

However, though it is safe to assume that by 1700 the turnip was often cultivated by farmers, it seems that the crop never became a permanent fixture in rotations in the following century. This was chiefly due to the problems encountered when cultivating and particularly extracting the root from the heavy, wet soils of the region. From the few available eighteenth century cropping accounts, it would seem that the root never occupied more than one-third of the fallow shift. At farms such as Wetheringsett Lodge and Great Lodge Farm, Framlingham in the 1790s it seems the crop was barely grown at all.[35] Overton stated that up to 1740 and perhaps later, the proportion of the cropped acreage under the root was modest, at no more than nine per cent; this translates into between one and two and a half acres of turnips on each farm.[36] *Roots of Change* suggested that this figure is perhaps too small for the Central Claylands, where farmers were typically growing between three and seven acres of the crop.[37]

Furthermore, though the introduction of turnips may have altered the sequence of cropping between wheat and barley, the crop did not change the basic structure and principle of the old three-course system. The next and most critical stage in the evolution of the celebrated four-course system involved the full-scale insertion of leguminous crops, such as beans, peas and especially clover, into arable rotations. Though some pulses were grown in the old three-course shifts of the seventeenth century, clover was not adopted in the region until after 1700. In the early decades of the eighteenth century this artificial grass was only used to lay down exhausted

[32] M. Overton, 'The diffusion of agricultural innovations in early modern England: turnips and clover in Norfolk and Suffolk, 1580–1740', *Trans. Institute British Geographers*, new ser., 10 (1985), p. 208.

[33] PRO, E134/4Anne/Mich. 4. Overton noted that 'about five per cent' of farmers were growing the crop in the 1660s. Overton, 'Diffusion of agricultural innovations', p. 211.

[34] SROI, HA240/2508/30, 271; Essex Record Office, Chelmsford (hereafter EROC), D/DH/VI/B/51; Overton, 'Diffusion of agricultural innovations', p. 211.

[35] A. Young, *A general view of the agriculture of the county of Suffolk* (1813), p. 370; SROI, FC101/N1/3. On Brooks Farm, Framlingham and Fair Oaks Farm, Dennington in the 1760s, between 20–25% of the fallow shift was cultivated with turnips; GB1/13C/1.

[36] Overton, 'Diffusion of agricultural innovations', p. 213; id., 'Determinants of crop yields', p. 312.

[37] Wade Martins and Williamson, *Roots of Change*, p. 108.

arable land for a period of several years, or to re-seed poor quality meadow land. Its use in an arable shift does not seem to have occurred until the middle decades of the century.[38] Overton's data suggests that only three per cent of the cropped area in Norfolk and Suffolk was under clover up to 1739, but that the diffusion of the crop after this date must have been 'very rapid'.[39] Documentary evidence for Woodland High Suffolk suggests that it was the 1740s when farmers began to include clover within an arable shift. Depositions for a tithe dispute at Westhall state that the grass was beginning to be taken up by farmers in the village in the late 1730s and early 1740s; while the first lease on the Tollemache estate at Helmingham that permitted its growth as an arable crop was drawn up in 1739.[40] Even in these early years of its adoption as an arable crop clover was normally placed after the barley/oats shift. The reason for this probably lies with the fact that the barley/oats shift had traditionally been the last course before land was laid down to grass for a period of rest. Past generations of farmers would have therefore become accustomed to growing clover (and before that wild hayseed) with their barley/oats crop.

By the 1760s there is evidence on several farms that a flexible four-course rotation was being operated, with clover, beans and peas all forming part of this system. For example, at Brook Farm, Framlingham and a holding in Parham between 1760 and 1766 the proportion of the arable acreage under clover, beans and peas was 26 per cent (15 per cent for clover and 11 per cent for beans and peas). Wheat totalled 29 per cent of the arable area, while the figure for barley and oats was 25 per cent. The fallow shift totalled 20 per cent, with only about one quarter taken up with turnips on both holdings. At Wetheringsett Lodge in 1764 the proportions were almost identical for the wheat and barley/oats courses, but the fallow and legume shift figures were reversed, i.e. 26 per cent fallow (probably completely bare) and 20 per cent clover, beans and peas (12 per cent clover, 8 per cent beans and peas).[41] Further examples from this period include the Pembroke College fellows directing their tenant at Wyverstone to run a conventional four-course system in the 1770s. The college's farms at Framlingham were following such a system between 1797 and 1815, though once again bare fallows were largely preferred to turnips or their substitute, cabbages.[42]

It is perhaps safe to assume then that by the last quarter of the eighteenth century, if not before, the region's farmers regularly cultivated clover and pulses within their cropping rotations. With this the four-course structure of fallow/roots, barley/oats, clover/beans/peas, wheat had taken shape. Physical conditions, such as heavy, poorly drained land limited the amount of root crops that could be taken in the fallow shift. Clover had to be regularly alternated with pulses to prevent the soil becoming 'clover sick'. Conversely, if the soil was in good heart, a fifth shift (often of oats) could be added to the cycle before the fallow returned. Nevertheless, despite these variations, the basic principles and shape of the four-course system were largely adhered to by the region's farmers from this time through to the end of the period studied here. In 1854, for example, grain proportions in the region were the same as those given above in the 1760s, namely 29 per cent of the arable area under wheat, and 25 per cent under barley (oats were not listed).

[38] Theobald, 'Changing landscapes', pp. 120–1.

[39] Overton, 'Re-establishing the English Agricultural Revolution', p. 12.

[40] PRO, E134/17Geo2/East. 3; Helmingham Hall Archives (hereafter HHA), T/HEL/127/1/1.

[41] SROI, GB1/13C/1; SROB, IC500/3/51/116.

[42] PCAC, Wyverstone/C10, C10a; SROI, FC101/N1/3. Wade Martins and Williamson have noted the scarcity of root crops on other clayland farms in this period; *Roots of Change*, pp. 110–11.

The clover, beans and peas shift was 25 per cent, with pulses and artificial grasses divided roughly half and half. The fallow shift totalled 21 per cent, but it is noticeable here that a far higher percentage of the shift was planted with root crops. Half of the shift was taken up with turnips, one quarter with mangolds, and one-quarter bare fallow.[43] An explanation for this increase in root cultivations will be given in the following section.

Though not as significant as these shifts in arable production, it is still worth noting two changes concerning livestock farming before the general move away from dairying. Firstly, in the last thirty years of the seventeenth century, the region's farmers increased the turnover of immature cattle sold to the butchers for beef and veal. This was achieved by buying in extra cattle, both local stock and northern/Scottish droves, from fairs. Holderness believed that the Scottish 'runt' was the most common imported beast in East Anglia in this period.[44] According to tithe depositions, the buying in of 'fair cattle' seems to have started at the same time as turnips began to be grown, namely around 1670. For example, in the parish of Wilby, near Framlingham, four farmers began to buy in such stock between 1668 and 1674.[45] Nevertheless, though this practice was taken up across the whole of the region from this time onwards, it never replaced dairying as the main prop of the local economy. Beef fattening proved instead to be a valuable sideline for the region's farmers, especially when meat prices were relatively high, though its worth may have been questioned after the outbreak of the cattle plague in the 1740s. Secondly, it would seem that in the second half of the eighteenth century farms in the region moved away from cheese production to concentrate more on butter making. This shift away from cheese was probably brought about by the loss of the contract in 1757 to supply the navy with Suffolk 'bang' (cheese). From this time onwards much of the cheese sent to the navy's stores came from Cheshire.[46]

III

Though it is not possible to obtain all the farm output data needed to calculate changes in land productivity, the figures produced so far allow for an estimation of overall outputs to be made by modelling. Table 5 gives the changing grain and fodder outputs for a typical 100-acre holding. In reading this table, it should be noted that the cultivated fodder and grain areas are all part of the total arable area. The total acreage of the model farm for each year can therefore be calculated by adding the arable area and uncultivated fodder areas together. Moreover, bare fallow estimates can be made for each period by subtracting both grain areas and the cultivated fodder area from the total arable area. Included in the uncultivated fodder area figures are the temporary or 'new' leys, exhausted arable lands that were laid down to grass for anything between five and fifteen years. It has been suggested elsewhere that these lands never amounted to more than ten per cent of the total acreage of the farm, and that nearly all holdings in the region had at least 50 per cent of their lands under permanent 'ancient' pasture.[47] The results have been derived by using the information given earlier relating to land usage, yield levels and the introduction of the four-course system. For the purposes of the exercise the output estimates

[43] Dodd, 'Suffolk crop returns', p. 199.
[44] Holderness, 'East Anglia', p. 236.
[45] PRO, E134/26Chas2/East. 24.
[46] W. Beveridge, *Prices and wages in England from the twelfth to the nineteenth century* (1939), pp. 555, 576, 939.
[47] Theobald, 'Changing landscapes', pp. 102–4, 108–10.

TABLE 5. Grain and fodder outputs from a model hundred acre farm.

	Arable area (acres)	*Grain area (acres)*		*Yield (bushels)*		*Total grain yield (bushels)*	*Fodder area (acres)*		*Total fodder area (acres)*
		Wheat	*Barley*	*Wheat*	*Barley*		*Uncultivated*	*Cultivated*	
1670	21	7.0	7.0	105.0	126.0	231.0	79	2	81
1770	35	8.75	8.75	175.0	218.75	393.75	65	12	77
1800	50	12.5	12.5	275.0	400.0	675.0	50	17	67
1815	65	16.25	16.25	357.5	520.0	877.5	35	22	57
1850	75	18.75	18.75	600.0	825.0	1425.0	25	35	60

Notes: Outputs for 1670 are calculated on the assumption that a three course system is in operation: after this date, a four course system is assumed to be in place.
Source: Calculated from Table 4.

for oats have been included in the barley figures, and it has been assumed that wheat and barley/oat proportions were the same as each other throughout the period. Cultivated fodder area totals have been calculated on the premise that two thirds of the fallow shift was bare up to, and including, 1815, but that by the 1850s the same percentage of the rotation was taken up by turnips, mangolds and tares. Additionally, for all the figures after and including those for 1770, one quarter of the arable area has been calculated as producing leguminous crops.

The introduction of green fodder crops into rotations with corn meant that by 1770 the total grain yield from our model farm would have gone up by 70 per cent since 1670. The area under grain would also rise, but only by 25 per cent. Though the total fodder area would be marginally down, by five per cent, there was a six-fold increase in the cultivated fodder area. Forty-five years later, in 1815, the area under grain had virtually doubled, while the total grain yield had gone up by 123 per cent. The total fodder area had decreased by 26 per cent, but the cultivated fodder area had nearly doubled. Finally, though the area under grain had only gone up 15 per cent by 1850, the total grain yield had increased by 62 per cent. The total fodder area had remained the same between the final two dates, but for the first time the cultivated fodder area exceeded the uncultivated area.

Overall livestock density trends can also be produced here for the period 1587 to 1803 by weighting the figures from Table 1 with the feed requirements used in Table 2. The later non-inventory data can then be added to these figures (Table 6). The results show little change between 1587 and 1746, with densities ranging between 27.6 and 29.4 livestock units per 100 acres; there is then an increase in the period 1747–85 when densities rise to their highest level of 32.8. Figures in the final period, however, fall to their lowest level of 27.7. These figures are very similar to the densities given in *Roots of Change* for Stansfield in 1760 (29 units per 100 acres) and in 1808 (24 units per 100 acres). As Wade Martins and Williamson noted, this data fits neatly within the range of 15 and 40 units per 100 acres extrapolated from Campbell and Overton's figures.[48] Once the region's farmers began to reduce their dairy herds in the early years of the nineteenth

[48] Wade Martins and Williamson, *Roots of Change*, pp. 172–73.

TABLE 6. Livestock units per hundred acres

1587–1669	*1670–1714*	*1715–46*	*1747–85*	*1786–1803*	*1810*	*1854*
29.4	28.1	27.6	32.8	27.7	20.1	20.5

Source: data for 1587-1803 calculated from Tables 1 and 2 above; for 1810 from Table 3 and for 1854 from Dodd, 'Suffolk crop returns', p. 199.

century, however, livestock unit totals shown in Table 6 naturally began to fall. By 1810 at Goswold Hall, Thrandeston, the figure was 20.1 units per 100 acres (Table 3). In 1854 the livestock unit total per 100 acres was 20.5, which is only a marginal increase on the Goswold Hall figures.[49]

IV

The data produced in the last two tables help to bring to the fore several issues that are central to the debate over the English agricultural revolution debate. No more significant is the question of the extent and timing of land productivity increases, which can be clearly illustrated by examining the results given in Table 5. For example, the figures show that although the area under grain rose by approximately 160 per cent between 1670 and 1850, the total grain yield in this period increased by over 500 per cent, implying that land productivity was noticeably improving. In addition, though the region's farmers sold off the majority of their dairy herds after 1800, which in turn dragged down the livestock unit totals in Table 6, the densities of some types of farm stock, namely immature cattle and swine, increased at various points through the period studied here. In other words, the same amount of land seems to have been able to produce more crops and support extra numbers of certain types of livestock. Such trends strongly suggest that the 150 years or so after 1700 saw very significant rises in agricultural productivity. It is necessary, therefore, to explore fully the possible causes of these improvements.

To take livestock issues first, it seems probable that the increased cultivation of the field turnip helped farmers boost their cattle numbers, especially the numbers of immature stock. Even though the cultivation of the root was problematic and its adoption therefore patchy, it is unwise to underestimate its importance. On a farm that had only 20 or 25 acres in tilth, two or three acres of turnips (roughly one third of the fallow shift), would have still made an impact on livestock densities. The value of the root to the farmer is clearly illustrated by a deposition made in a tithe dispute for the parish of Spexhall. One witness stated in 1704 that one acre of 'good turnips will go as far as three loads of hay'; Fream's *Agriculture* notes that turnips contain nearly double the amount of protein of low value grass.[50] The same witness also claimed that by growing eight acres of turnips at Spexhall Manor Farm (of approximately 220 acres), the farmer could winter between six and eight additional cattle. It would seem that the majority of these extra beasts were brought in by the tenant, Thomas Stopher, to be fattened up on turnips for beef; Stopher had three scotch bullocks on his farm in the spring of 1703.[51] The ability to increase winter feed stocks meant these beasts could be fattened and 'finished' more rapidly.[52] Further

[49] Dodd, 'Suffolk crop returns', pp. 191–204.

[50] W. Fream, *Elements of Agriculture* (1892 edn), p. 524.

[51] PRO, E134/4Anne/Mich. 4.

[52] Campbell and Overton, 'A new perspective', p. 82.

documentary evidence illustrates this strong link between beef cattle and turnips. John Frere of Finningham referred to his beef cattle as 'turnop beasts and steers' in the 1680s; while Defoe noted in the 1720s that the method of fattening up beef cattle on the turnips was well established in High Suffolk.[53]

There is evidence that other livestock also benefited from the cultivation of turnips. For example, on some farms in the early years of the eighteenth century the root was being fed to pigs; the above-mentioned Thomas Stopher was giving his hogs turnips in 1702 and 1703.[54] Dairy stocks were also fed turnips, but the root was only used for this purpose to a limited degree, due to the dairy produce being tainted with the taste of the crop. A better alternative in this respect was the cabbage, and this plant also proved easier to extract from heavy soils than the turnip. Cabbages began to be taken up by the region's farmers after 1760, and it is possible that the crop played a part in raising both milk cattle and pig densities between 1747 and 1785. In the 1790s Young testified to the enthusiasm that pigs had for this food source.[55]

Besides root crops, the increasing use of clovers and pulses probably helped stocking densities reach their zenith between 1750 and 1780. Perhaps most important was the introduction of clover. Whether mown for hay, or fed from the fields, the artificial grass would have added greatly to fodder supplies, especially in winter. Besides dairy stocks, the main consumers of clover and pulses were horses and swine, and increases in the density figures for both animals, but particularly the latter, can be seen from the various data for the periods after 1747. The increased cultivation of leguminous crops therefore not only gave sustenance to the growing number of horses kept in the region, but may have also helped to improve the age-old husbandry of pig keeping. Nevertheless, a change in emphasis in dairy production after 1760 probably played a part in boosting pig densities. The above-mentioned move towards producing more butter in place of cheese would have led to increased amounts of skimmed milk being available on the farm, and this was ideal for feeding and fattening up swine. A comment made by Young in 1786 seems to support this view. To quote, 'if the butter is increased considerably, and the hogs should be the more favoured, which seems obvious, it may answer better than cheese making'.[56]

As well as helping stocking densities, the implementation of roots and leguminous plants into arable rotations would have also improved soil fertility, and consequently crop yields. Of the two there is little doubt that leguminous crops had the most direct impact on land fertility by increasing the supply of nitrogen to the soil. All leguminous plants, but especially clover, are ideal at 'fixing' nitrogen into the soil via the atmosphere. Chorley has estimated that the cultivation of clover increased the supply of nitrogen to the English farmer by over 60 per cent.[57] Moreover, Overton has noted that out of all the green fodder crops, clover seems to have had the most beneficial effect on wheat yields.[58] Turnips, by themselves, may have also helped to improve the fertility of the soil. For example, the crop would have left organic residues if it were ever ploughed in, and when sown in rows would have allowed the land to be kept free of weeds by regular hoeing.[59] However, unlike on the light soil districts of East Anglia, the turnips'

[53] SROI, HB405/C2/1; D. Defoe, *A tour through the eastern counties* (1962), p. 124.

[54] PRO, E134/4Anne/Mich. 4.

[55] Young, *General view of Suffolk*, pp. 116–17.

[56] Young, 'Minutes', p. 207.

[57] G. P. H. Chorley, 'The agricultural revolution in northern Europe, 1750–1880: nitrogen, legumes and crop productivity', *EcHR*, sec. ser., 34 (1981), pp. 71–93.

[58] Overton, 'Determinants of crop yields', p. 314.

[59] Ibid., p. 294.

deeper roots did little to improve the structure of what was already heavy land; indeed, its extraction in the wet, winter months often led to damage being inflicted to the soil. From this farmers such as Mr. Press of Wetheringsett Lodge concluded in the 1790s that the crop did 'more harm to the land than good to the stock'; while Arthur Young also noted in 1786 that the root was not 'a necessary article in any course of crops, but merely in subservience' to the needs of cattle. On the contrary, 'it was generally the opinion that the husbandry with any other view was disadvantageous'.[60]

It is probable, however, that turnips had more influence on land fertility in the region by improving the manuring capabilities of each farm. It is not surprising that adding new protein rich crops such as turnips, and indeed pulses and clover, to the farm's fodder portfolio enhanced the quality of dung produced. Though it is difficult to quantify these improvements in the eighteenth century, Bacon believed that dung improved in quality by between 20 and 40 per cent once farmers increased root cultivations and brought in oil and corn cake for feed in the 1840s and 1850s.[61] Of perhaps greater significance, however, is the fact that cultivated fodder crops were more likely to be fed to livestock confined in houses, sheds, yards and stalls. A higher proportion of the resulting dung would have therefore been conserved by this action, rather than being wasted out in the pastures. Early examples of such practices can be found after 1670 with the feeding of turnips through winter and early spring to cattle placed in cow (or neat) houses. For example, on the Frere property at Finningham Hall, 12 'turnep beasts' were 'in the house' in 1684, 12 steers were 'tied up at turneps' in 1685, seven 'turnep steers' were at 'my turnep shod' in 1687, and fat bullocks were being sold from 'out of the shed' in 1692.[62] Similarly, in the early spring of 1704 Thomas Stopher of Spexhall Manor Farm was described as staking up two scotch bullocks in his neathouse and feeding them turnips until supplies ran out.[63] There is strong documentary evidence that the construction of purpose built housing for cattle dramatically increased in the region through this period.[64] Invariably these newly built cow houses were placed away from the farmyard, usually in pasture closes that abutted onto arable fields.[65]

Therefore, it is probable that between 1670 and 1710, improvements in the feeding and housing of cattle had a beneficial impact on the quality and quantity of dung produced in the region. Consequently, it is unlikely to be pure coincidence that the first rise in yields shown in Table 4 is contemporaneous with these advances. Moreover, the disparity between initial wheat and barley/oats yield increases may denote differing levels of manure application for the two crops. The extra manure supplies that were generated by feeding turnips could be spread immediately on the succeeding barley/oats crop from nearby neathouses. Though the poor, wet weather of the 'Little Ice Age' in the 1670s and 1680s would have hurt the growth of barley, which was less resilient than wheat to wet and acidic growing conditions, the crop was more responsive to increased dunging.[66] The link between the cultivation of turnips and increased barley yields has already been indicated by Overton in 1991.[67]

[60] Young, *General view of Suffolk*, p. 370; Young, 'Minutes', p. 197.

[61] Wade Martins and Williamson, *Roots of Change*, p. 174.

[62] SROI, HB405/C2/1.

[63] PRO, E134/4Anne/Mich. 4.

[64] Theobald, 'Changing landscape', pp. 180–1.

[65] Ibid., p. 183.

[66] Wade Martins and Williamson, *Roots of Change*, p. 175.

[67] Overton, 'Determinants of crop yields', p. 314.

Furthermore, it seems plausible that ever improving methods for collecting and processing manure may have helped sustain grain yields between 1800 and 1836. The move away from dairying and the resulting reduction in the supply of animal waste in this period should have adversely effected grain yields; but this seems not to have been so. What factors helped prevent such a drop in productivity? To start with, the amount of manure taken from dairy stocks and used upon the arable sector had always been relatively low. As these herds spent most of their year out in the pastures, much of their dung and urine was lost, and the quality must have been poor, due to the main fodder source being low yielding coarse pasturage.[68] In addition, at the same time as milk cattle densities were falling, yarded animal numbers were actually on the increase. This change in farming policy had a direct impact on cattle housing in the region. It became increasingly common for new open-fronted cattle sheds to be built much closer to the farmstead, and more distant neathouses to be taken down.[69] Wade Martins and Williamson have found similar trends at this time in Norfolk.[70] Consequently, the fall in manure potential in this period was not a catastrophic one. By just the action of falling in the farmyard, dung and urine supplies were far more likely to retain their fertilizing properties. Yards would have been well littered with straw in order to absorb these waste products and in turn, therefore, much of the nitrogen and potassium contained within was preserved.[71] The immediate need to collect this material into dunghills, so as to prevent the loss of nutrients into the atmosphere or by leaching, was more likely to be satisfied if the farmer kept much of his stock within central farm yards.

Nevertheless, though cattle, and indeed all livestock, were far more likely to be yarded by the 1840s, little thought seems to have been given to the arrangement of new and old buildings alike within the yard complex. This is clearly illustrated by a comment of the Raynbirds' in the late 1840s. They noted that many of the region's farm buildings were placed in the yard 'in every form except that which would give economy in the manufacture of manure, or in the feeding of cattle'.[72] In the following year Caird lodged similar objections about farm buildings throughout England, but particularly in the southern counties.[73] What was needed was the complete reordering of outbuildings to create a central yard that provided separate folds and sheds for bullocks, dairy cattle and horses. When implementing these improvements it was normal procedure in the region to integrate new structures around older, established buildings (usually the barn). The policy of building completely new 'model' farmyards was rarely, if ever, adopted. *Roots of Change* has found similar 'piecemeal' schemes across Norfolk, including many on large, landed estates in the north and west of the county.[74] Such alterations took place chiefly between 1850 and 1880. The evidence for such changes having occurred in this period can be easily found if comparison is made between the tithe maps of *c.* 1840 and the first edition OS maps of the 1880s.[75] These well-ordered yards were a central feature of the system of 'high' farming, and by

[68] N. Scarfe (ed.) *A Frenchman's year in Suffolk*, Suffolk Rec. Soc. 30 (1988), p. 145.

[69] Theobald, 'Changing landscapes', p. 198.

[70] Wade Martins and Williamson, *Roots of Change*, pp. 94–5.

[71] ibid., p. 173.

[72] H. Raynbird and W. Raynbird, *Agriculture of Suffolk* (1849), p. 60.

[73] J. Caird, *English Agriculture in 1850–51* (1852), pp. 77, 89, 135, 152, 222, 490–1.

[74] Wade Martins and Williamson, *Roots of Change*, pp. 143–7.

[75] Theobald, 'Changing landscapes', p. 198.

greatly improving the production of manure were responsible, at least in part, for the steep increases in grain yields already evident by the 1860s.

Before leaving this subject, it is worth mentioning that the increasing use of other manures in the last hundred years of our period would have further improved the fertility of the land. Prior to the adoption of phosphates by the region's farmers in the 1830s and 1840s, chiefly to aid the cultivation of root crops, the most commonly used substance was 'manner' or compost.[76] This material was acquired by skimming the topsoil off from the borders around fields and scouring ditches (known in Suffolk as 'outhawl'). Documentary evidence tends to suggest that farmers were seeking to increase the amount of manner produced on their land after 1750. The first reference, for example, to borders being 'mannered' comes on the Tollemache estate at Helmingham in 1759.[77] The earliest probate inventory to mention manner compost was at Hacheston in 1760, but by the 1790s the substance appears frequently in these records.[78] Woodward notes that 'earth compost' was being produced by similar methods near Chelmsford in this same decade. To quote, 'soil [is taken] wherever it can be spared from the sides of lanes or roads, or from the skirts of the enclosure'.[79] Young and the Raynbirds state that though manner was mixed with animal manure, its best application was as a foundation and cover for the dunghill, in order to prevent fermentation and therefore loss of fertilizing power.[80]

So far this section has examined the various ways farmers could improve the fertility of their land by increasing the levels of nitrogen in the soil. The role leguminous crops played in this process has already been discussed, but organic matter, such as animal waste, is somewhat different as it releases nitrogen into the soil when it decays. With this in mind, it is important to understand that the decay rates of manure can be badly checked if the soil is waterlogged or too acidic. To realize the true potential of improved manure supplies, the region's farmers had first to combat soil acidity and poor drainage.

Taking the former of these conditions first, the earliest method farmers used to counteract acidity was to marl their lands.[81] This process involved digging pits to extract the chalky (alkaline) clay subsoil in order to add to the topsoil. This labour intensive method was necessary as the two soils would have never been mixed together by the shallow blade of pre-1840 ploughs. Acidic topsoils would have been most prevalent on lands just broken up from ancient pasture, due to nutrients leeching into the subsoil over a long period of time. It is not surprising therefore, that the first marling references in the archives appear in the 1750s, when arable totals began to increase.[82] The process of gradual adoption in this decade can be seen at South Elmham Hall Farm in 1753 when it was said that marl would improve the estate, 'but none as yet has been found there as in the neighbourhood'.[83] By the 1780s lease covenants that allowed increased

[76] Raynbird and Raynbird, *Agriculture*, p. 48.

[77] HHA, T/HEL/26/61.

[78] Norfolk Record Office, (hereafter NRO), INV82A/175.

[79] D. Woodward, '"An essay on manures": changing attitudes to fertilization in England, 1500–1800', in J. Chartres and D. Hey (eds), *English Rural Society, 1500–1800: Essays in honour of Joan Thirsk* (1990), p. 264.

[80] Young, *General view of Suffolk*, p. 195; Raynbird and Raynbird, *Agriculture*, p. 43.

[81] Potash 'muck' began to be used at about the same time as marl, but was not continued for much more than 30 or 40 years afterwards.

[82] BL, Add. Ms. 19,185, fo. 231; 19,197, fo. 121. However, the technology of marling was known in medieval times, which is borne out by the number of early marlpits found in Suffolk. The process would have been most prevalent in periods of economic prosperity and increased cultivations.

[83] SROL, 741/E1/5/86.

arable acreages also gave directives to clay marl newly cultivated land. For instance, in 1783 the tenant of the Mary Warner trust farm in Stradbroke was given an allowance to carry 500 loads of clay marl from a pit in Clay-pit Close.[84] The normal quantity of marl to be applied per acre was between sixty and seventy tumbril loads. With the economic climate throughout the French Wars in mind, it is obvious how essential neutralising soil acidity was in order to release the great (but temporary) stores of fertility in newly broken up land.[85] Furthermore, tithe maps and apportionments bear testament to how common clay marl pits had become by the 1840s. However, due to the temporary and sometimes slow impact marl had on the land, and perhaps more importantly the labour intensive methods of its extraction, other calcareous materials were sought to counteract soil acidity. By the 1850s the purchasing and transportation of lime had become viable, and the application of this substance superseded the more costly and time-consuming method of digging pits.[86]

Nevertheless, effective drainage on the region's heavy clay lands was even more important than neutralising acidity. To quote from John Josselyn's 1790 valuation of the Whittingham Hall estate at Fressingfield, underdrainage is 'always the first step towards improvement; for unless the arable land is laid dry, in some wet years they must lose their crops'.[87] Surface drainage methods were never as effective as ones that carried water down and through subsoils. The normal procedure for the majority of our period was to dig channels across a field, usually with the declivity if there was one, to the nearest ditches, and then place bush material (usually blackthorn or alder) or stubble, straw or stones in the bottom of the trenches before back-filling. The first reference to this form of drainage being implemented in the region comes on one of the lighter soil farms on the Flixton Hall estate in the late 1750s.[88] The most progressive farmers on heavier land, such as the tenants at Poplar Farm, Ashbocking, and Wetheringsett Lodge, began the process in the late 1760s. The workmen of John Edwards at Poplar Farm were hired out further away than Framlingham to teach the new methods.[89] By the 1780s and 1790s even smaller holdings such as the forty-acre Wyverstone College Farm were expending 'several sums' on draining.[90] There is little doubt that these initial schemes would have had some beneficial impact on crop yields, particularly those for barley. However, from minutes taken by Young at Crowfield in 1783 and Aspal in 1786, it is apparent that the amounts expended were woefully inadequate. At the latter village he noted that 'where there is one rod of hollow-drains there ought to be an hundred'.[91] Consequently, though gradually increasing, the level of underdrainage installed by 1800 was still inadequate to drain effectively the region's arable fields.

Though the situation slowly improved during the early decades of the nineteenth century, it is obvious that numerous villages in 1840 still had insufficient levels of hollow drainage. For instance, though the Tithe Files acknowledge that underdrainage was 'generally adopted' in

[84] SROI, GB412/4125, box 3, B. Alexander's 1783 lease for a farm in Stradbroke.

[85] Also, the excess of organic matter in newly broken up land would have made even heavy soil loosely textured. Clay marl would have gone some way to correcting this structural deficiency.

[86] W. M. Mathew, 'Marling in British agriculture: a case of partial identity', *AgHR* 41 (1993), pp. 108–110.

[87] SROB, E18/640/5.

[88] SROL, 741/E1/5/183.

[89] Raynbird and Raynbird, *Agriculture*, p. 187.

[90] PCAC, Ms. LI (Valuation Book, 1774–1824).

[91] Young, 'Minutes', p. 196

most parishes, they also recommend further investment in order to rid the region of 'much wet land'.[92] The Raynbirds suggest that the level of underdrainage installed in the region increased considerably through the 1840s. One commentator, for example, stated that the feature had 'never been carried to a greater extent than it is at the present time'.[93] These more comprehensive levels of drainage would have undoubtedly played a far more significant role in improving land productivity than was previously the case. They would have also enabled farmers to cultivate root crops with far more frequency and confidence. Further, more extensive underdrainage schemes were installed between 1850 and 1880, and these were largely encouraged by the introduction of tenant right systems, government loans, and to a lesser extent, the innovation of the tilepipe.[94] Nevertheless, it has to be noted here that when comparing the above findings with the conclusions made in *Roots of Change* it would seem that the heavy clay parishes of Woodland High Suffolk lagged behind other East Anglian districts in installing effective levels of underdrainage and adopting the tilepipe in place of the bush drain.[95]

V

The data supplied in this paper therefore clearly indicates that farm outputs were significantly increasing in Woodland High Suffolk through the early-modern period. For example, according to the figures from Table 5, grain outputs increased six-fold in the region between 1650 and 1850. These gains were part of a more general trend of improved agricultural production across the whole country. Wrigley illustrates the extent of these increases by stating that the English agricultural sector in 1820 was still managing to feed adequately a population that had quadrupled since 1550.[96] Improvements in grain output in our region were achieved by a combination of incremental increases in land productivity throughout the two hundred years under discussion and by increasing the area under cultivation primarily after 1750. Improvements in land productivity were achieved by a series of advances in farming husbandry. These included the inclusion of green fodder crops into arable rotations, the increase in yard and stall feeding of livestock with better quality fodder, the resulting improvements in the quality and quantity of manure produced, the counteracting of soil acidity, and lastly, the installation of underdrainage schemes. Though some of these procedures had their origins back in the seventeenth century, none were pursued as systematically and comprehensively as they were in the forty years after 1840. Not surprisingly, therefore, this period also saw the largest and most rapid increases in grain yields.

Probably the most salient point to make when assessing the paper's livestock data is that total densities stayed reasonably constant before 1810, hovering between 27 and 32 units per 100 acres; but this was followed by a fall to roughly 20 units in the 50 years after this date. This data

[92] PRO, IR18/9582 (Bedfield); 9583 (Bedingfield); 9749 (Fressingfield); 9878 (Mendlesham); 10080 (Wyverstone). As a rule, the heavy land parishes with the highest amounts of roots grown on their fallows were the ones that had been drained the most.

[93] Raynbird and Raynbird, *Agriculture*, pp. 121, 129.

[94] BPP 1847–48, VII (461), *Report from the Select Committee on Agricultural Customs*, pp. 175–183; A. D. M. Phillips, *The underdraining of farm land in England during the nineteenth century* (1989), pp. 62–88.

[95] Wade Martins and Williamson, *Roots of Change*, pp. 65–7.

[96] E. A. Wrigley, *People, cities and wealth: the transformation of traditional society* (1987), p. 112.

therefore quashes any claims that the adoption of new rotations resulted in far higher stocking densities. Nevertheless, the real achievement here was that the area under the plough could be greatly expanded without any drastic reduction in the overall number of animals kept.[97] Indeed, it would seem from the data that if farms increased their arable to between 30 and 40 per cent of their total area, livestock units could actually rise moderately. Furthermore, the declining figures for milk cattle within the region's overall totals obscure the fact that numbers for predominantly yarded livestock increased noticeably.

Despite these conclusions, it is not the intention of the paper to give a clear defining statement regarding the timing of an 'agricultural revolution' in England. Much ink has been spilt over this contentious issue, but the paper will avoid entering the debate, due in part to the fact that the term revolution is, in itself, unhelpful and misleading. In 1984 Overton went as far to describe it as being 'beyond redemption as it is surely meaningless'.[98] Little can be gained by dogmatically adhering to such a term. To do so, would, for example, lead us to underplay the importance of the gradual, incremental advances in agricultural procedure and output that occurred in the region before 1840. Another reason for this paper's reluctance to enter the national debate, however, is that the data is too incomplete as it stands to allow an accurate calculation of overall agricultural productivity to be made. Firstly, as already mentioned, the pre-1660 data in the paper is either very patchy (for livestock) or non-existent (for crop yields). The lack of any figures for the latter category prevents the paper from completely dismissing the claims of Kerridge and Allen that the late sixteenth and seventeenth centuries saw the greatest improvements in land productivity.[99] The information this paper can utilize to place the crop yields shown in Table 4 into an earlier context are Campbell and Overton's figures for Norfolk. Secondly, due once again to the lack of archival material, no attempt has been made to examine changes in the productivity of agricultural labour. Without such data it is not possible to reliably evaluate whether labour inputs rose in accordance with the increases in grain outputs shown above. For the scope and purpose of this paper, however, the sound assumptions made in *Roots of Change* shed some light on this issue. It is stated there that though the adoption of the four-course rotation and the extension of the cultivated area would require significant increases in the amount of labour employed, the region could meet this demand, due to a 'substantial surplus of labour' and relatively low wage levels.[100] It is therefore unlikely that labour productivity in Woodland High Suffolk improved greatly until after this period, when agricultural wages rose and labour saving measures such as the reorganisation of farm yards and the introduction of harvest machinery began to be adopted.

Nevertheless, though incomplete, the data given above can still make a useful contribution to the historiographical debate concerning productivity growth in English farming. Its primary role in this respect is that it gives further credence and support to research completed in the last ten years by Campbell and Overton, Wade Martins and Williamson and Turner, Beckett and Afton.

[97] Wade Martins and Williamson, *Roots of Change*, p. 173.

[98] M. Overton, 'Agricultural Revolution? Development of the agrarian economy in early modern England' in A. R. H. Baker and D. Gregory (eds), *Explorations in Historical Geography: interpretative essays* (1984), p. 139.

[99] E. Kerridge, *The Agricultural Revolution* (1967); R. C. Allen, 'The two English Agricultural Revolutions, 1450–1850', in Campbell and Overton (eds), *Land, labour and livestock*.

[100] Wade Martins and Williamson, *Roots of Change*, pp. 154–6.

This body of work re-establishes the view of an earlier generation of agrarian historians such as Chambers and Mingay, that in the 170 years after 1700 the agrarian economy of England was utterly transformed, and agricultural practice and productivity significantly improved.[101] Overton noted in 1996 that 'the magnitude of the changes that occurred [in Norfolk between 1750 and 1850] were out of all proportion to those which had occurred during the preceding 500 years, and changes of similar magnitude were happening elsewhere' in England.[102] It follows inevitably from this that by supporting Overton this paper must also cast doubts over some of the revisionist claims made by Kerridge, Jones, John, Allen and Clark.[103] The general consensus from this group of historians was that most of the advances in farming practice and productivity occurred between the late sixteenth and early eighteenth centuries, and that little was achieved after this period. Though all these historians were keen to stress the importance of the seventeenth century as a time of improvement, Clark is the most vehement in his dismissal of the eighteenth and nineteenth centuries. He stated, for example, that there was 'little productivity growth in agriculture' between 1700 and 1850.[104] Not surprisingly, this statement cannot be sustained when the evidence for Norfolk and Suffolk is examined. Of course, the convergence of opinion between the work of Overton, Wade Martins and Williamson and this paper may simply reflect the situation found in East Anglia, and that temporal variations in the progress of agricultural improvement occurred from farming region to farming region. Nevertheless, there is enough analytical evidence available now, including the new data given above, to suggest that far from being a time of inertia and stagnation, the 170 years after 1700 was a period that experienced fundamental agrarian change and hugely impressive gains in agricultural productivity.

APPENDIX ONE

Probate Inventory References, 1587–1803

Suffolk Record Office, Ipswich branch:

Chippenhall Hall, Fressingfield, FEI/4/10; Winston Hall, FEI/4/34; Home Farm, Heveningham, FEI/4/113; Bruisyard College Farm, FEI/4/114; Great Lodge, Framlingham, FEI/5/129; Westhouse Farm, Fressingfield, FEI/6/6; Little Lodge, Framlingham, FEI/6/44; Moat Grove Farm, Pettaugh, FEI/6/90; Redhouse Farm, Framsden, FEI/9/82; an 83 acre farm in Westhall, FEI/21/45; Poplar Farm, Ashbocking, FEI/13/125; Framsden Hall, FEI/25/67; Countess Wells, Framlingham, FEI/21/6; Park Gate Farm, Helmingham, FEI/22/91; Grange Farm, Otley, FEI/22/93; High Elm Farm, Pettaugh, FEI/27/22; Ivy Lodge Farm, Hoo, FEI/28/12; Whittingham Hall, Fressingfield, FEI/28/34; Spaldings Barn, Framsden, FEI/28/35; Great Lodge, Framlingham, FEI/28/73; Green Farm, Cookley, FEI/31/48; Towranna Farm, Huntingfield, FEI/30/11; Ashbocking Hall, FEI/31/9; Abbey Farm, Rumburgh, FEI/29/21; Batts Farm, Mendlesham, HA87/B2/1/1; Reads Hall, Mickfield, *Ipswich J.*, 26 Sept. 1801, p. 4, col. 1; Batts Farm, Mendlesham, HA87/C7/1/1; East End Manor & Longland Hall, FEI/32/2.

Suffolk Record Office, Bury St Edmunds branch:

Bartlett/Wood Hall, Rishangles, IC500/3/5/144; Hestley Hall, Thorndon, IC/500/3/9/109; Westhorpe Lodge, IC500/3/14/172; Dairy Farm, Thorndon, IC500/3/15/146; Charity Farm, Thorndon, IC500/3/16/186; a 20 acre estate in Rishangles, IC500/3/17/159; Finningham Green Farm, IC500/3/21/161; Common Farm, Rishangles, IC500/3/27/72;

[101] J. D. Chambers and G. E. Mingay, *The Agricultural Revolution, 1750–1880* (1966).

[102] Overton, 'Re-establishing the English Agricultural Revolution', p. 11.

[103] ibid., pp. 1–2.

[104] G. Clark, 'Agriculture and the Industrial Revolution, 1700–1850', in J. Mokyr (ed.), *The British Industrial Revolution: an economic perspective* (1993), pp. 246, 249.

Charity Farm, Thorndon, IC500/3/34/27; Westhorpe Hall, IC500/3/50/36; Wetheringsett Lodge, IC500/3/51/116; Redhouse Farm, Thornham Magna, IC500/3/53/17; Badwell Ash Hall, IC500/3/53/93; Wyverstone College Farm, IC500/3/53/100.

Suffolk Record Office, Lowestoft branch:

Six Farms in Flixton c. 1790, (Grange, Abbey, Starknaked, Hill, Wood and Retreat), 741/B1/2/69, 73, 74, 76, 77, 79, 741/E1/8/5.

Norfolk Record Office:

Cuckoo Farm, South Elmham, St. James, INV45/71; Wickham Skeith Hall, INV55A/96; Moat Farm, Mendlesham, INV57B/41; Park Gate, Helmingham, INV62A/40; Old Hall, Helmingham, INV67A/76; a 13 acre estate in Rishangles, INV86/113; Brames Hall, Wetheringsett, INV70/222; Reads Hall, Mickfield, INV73/228; Westhorpe Lodge, INV75B/13; a 35 acre estate in Rishangles, INV78A/14; Cuckoo Farm, South Elmham, St. James, INV82A/193; a 21 acre farm in Saxtead, INV84/3; Grove Farm, Framlingham, INV84/24.

The 'survival' of service in the English agricultural labour force: lessons from Lancashire, *c.* 1650–1851*

by A. J. Gritt

Abstract

The high level of farm service in the north of England in the mid-nineteenth century has previously been seen as a 'survival' of an early modern rural social structure. In contrast, the prevailing interpretation of the decline of service in the south-east between the late eighteenth and mid-nineteenth centuries suggests that this was a product of the spread of agrarian capitalism and improving agricultural regimes. This article explores the changing composition of the agricultural labour force in Lancashire between the mid-seventeenth and the mid-nineteenth centuries. It is argued that farm servants only became a significant part of Lancashire's agricultural labour force in the last third of the eighteenth century in response to the increased labour demands of an improving farming system stimulated by the growth of towns and industry. Farm servants were thus intrinsic to agricultural development, not evidence of an ossified social structure.

The orthodoxy established by Ann Kussmaul's conclusions about the changing composition of the agricultural workforce is increasingly being challenged. This orthodoxy, established in her *Servants in Husbandry*, is simple. From the late eighteenth century in the south of England, rapid population growth, the rise in poor relief expenditure, falling real wages for agricultural labourers and a rise in the cost of living caused capitalist farmers, particularly those with social aspirations, to reject farm service as a means of procuring labour. Farm servants were the victims of the agricultural revolution of the eighteenth and early nineteenth centuries, abandoned by their capitalist masters in favour of a more casual, proletarian labour force. In the North of England, farm service remained a significant feature of the rural social structure until well into the nineteenth century, which, Howkins has suggested, reflects the employment patterns of a backward, perhaps inefficient, agrarian regime where innovation and agrarian capitalism were alien. If it is accepted that farm servants were survivors of a pre-capitalist, primitive rural social structure, then it does not require a substantial leap to see that farm servants do not fit comfortably with the tripartition of a capitalist agrarian social structure.[1]

* I am grateful to Dr S. A. Caunce, Dr H. R. French, Prof. R. W. Hoyle and two anonymous referees for their comments on earlier drafts.

[1] A. Kussmaul, *Servants in husbandry in early modern England* (1981); M. J. Daunton, *Progress and poverty. An economic and social history of Britain, 1700–1850* (1995); M. Overton, *Agricultural Revolution in England. The transformation of the agrarian economy, 1500–1850* (1996); K. D. M. Snell, *Annals of the labouring poor. Social change and agrarian England, 1660–1900* (1985); A. Howkins, 'Peasants, servants and labourers: the marginal workforce in British agriculture, *c.* 1870 – 1914', *AgHR* 42 (1994), pp. 49–62; id., 'The English farm labourer in the nineteenth century: farm, family and community' in B. Short (ed.), *The English rural community: image and analysis* (1992), pp. 85–104.

This conceptual framework has recently come under critical review. In a previous article, it was demonstrated that the flaws in the 1831 census data, and the inadequacies of Kussmaul's methodology, grossly exaggerate the divide between a high service North and a low service south in 1831. Woodward has demonstrated how Kussmaul's analysis of marriage seasonality is subject to serious methodological errors and that her interpretation of fluctuations in the numbers of farm servants in the early modern period is also questionable.[2] Interpretations of the role of the small farmer in agricultural production have also developed in recent years and the significance of family farms and farm servants to agricultural production in the nineteenth century is now increasingly recognized. There is a growing realisation that small farmers geared output to the demands of capitalist markets, and that they were adaptive, efficient commodity producers. They may not have been capitalists in a Marxist sense, and may not fit the tripartite division of society that is characteristic of agrarian capitalism, yet they were innovators who had commercial advantages over larger farmers. It is certainly inappropriate to view them as mere 'survivors' from a more primitive developmental stage, existing on the periphery of the capitalist economy. Small family farms were the most successful class of farmer in late nineteenth-century England, surviving agricultural depression which saw many larger farmers face bankruptcy. Whilst holdings of less than 20 acres and more than 300 acres declined, farms of 20 to 300 acres increased in number between the 1870s and the 1930s, with the increase being most marked for holdings of 20 to 100 acres.[3]

Despite Woodward's criticisms of some of Kussmaul's analysis of early modern data, his agenda for the eighteenth and nineteenth centuries is somewhat wide of the mark. Indeed, he fails to go beyond the inherited wisdom that the divergence in the rural social structure between the north and south of England simply reflected the fact that they had 'disappeared' from most southern and eastern counties while service 'remained remarkably resilient throughout much of the North'. Woodward concludes with a call for research to explain the precise reasons for the 'survival' of farm service in the north of England. This call is inappropriate. Survival suggests two main elements. First, that servants existed in large numbers in a previous epoch. Second, that economic changes in the late eighteenth century had made service a redundant, anachronistic form of contract between capitalists and their workforce. However, it has been

[2] A. J. Gritt, 'The census and the servant: a reassessment of the decline and distribution of farm service in early nineteenth-century England', *EcHR* 53 (2000), table 8, p. 103; D. Woodward, 'Early modern servants in husbandry revisited', *AgHR* 48 (2000), pp. 141–50.

[3] M. Reed, 'Nineteenth-century rural England: a case for "Peasant Studies"?', *J. Peasant Studies* 14 (1986–7), pp. 78–99; M. Reed, 'The peasantry of nineteenth-century England: a neglected class?', *History Workshop J.*, 17 (1984), pp. 53–76; A. P. Donajgrodzki, 'Twentieth-century rural England: a case for "Peasant Studies"?', *J. Peasant Studies* 16 (1989), pp. 425–42; M. Winstanley, 'Agricultural and industrial revolutions: reassessing the role of the small farm', in C. Bjorn (ed.), *The agricultural revolution reconsidered* (Landbohistorisk Selskab, 1998), pp. 89–110; M. Winstanley, 'Industrialization and the small farm: family and household economy in nineteenth-century Lancashire', *Past and Present* 152 (1996), pp. 157–95; C. E. Searle, 'Customary tenants and the enclosure of the Cumbrian commons', *Northern Hist.* 29 (1993), pp. 126–53; C. E. Searle, '"The odd corner of England": an analysis of a rural social formation in transition, Cumbria, *c.* 1700–1914' (unpub. Ph.D. thesis, University of Essex, 1983); T. W. Fletcher, 'Lancashire livestock farming during the Great Agricultural Depression', *AgHR* 9 (1961), pp. 17–42; id., 'The Great Depression in English agriculture, 1873–96', *EcHR* 13 (1960–1), pp. 417–32; D. Grigg, 'Farm size in England and Wales, from early Victorian times to the present', *AgHR* 35 (1987), p. 184.

demonstrated that farm service was not incompatible with agrarian capitalism. Indeed, several studies have shown the positive role fulfilled by farm servants in improving agricultural regimes, where capitalist, market-oriented farmers relied upon servants for their labour requirements. Caunce's work on the East Riding of Yorkshire has shown clearly how farm servants were fundamental to the development of a highly successful capitalist farming regime in the second half of the nineteenth century, and that they actually increased in number during this period. Far from being a 'survival', farm service provided an efficient, motivated labour force on East Riding farms that was essential to the agrarian regime. For Caunce, farm servants do 'not destroy the old tripartite model, only its simplicity'. Moreover, Moses argues that in the East Riding it was 'progressive capital intensive farming that proved to be most deeply attached to the seemingly archaic and backward institution of farm service'. In Lancashire, Mutch has demonstrated that farm service increased in significance in the second half of the nineteenth century in the north of the county as arable cultivation gave way to stock rearing and greater integration into national markets. Similar claims have been made for areas outside the North. Short suggests that farm service in parts of Sussex was a fundamental part of capitalist agriculture. Anthony's work on farm service in lowland Scotland similarly demonstrates that farm servants were the rural proletariat of agrarian capitalism. Moreover, Scottish agricultural development in the lowlands was predicated upon the *creation* of a landless servant and labouring class in the late eighteenth century.[4]

Our knowledge of the changing structure of the agricultural labour force at a regional level is clearly inadequate to conceptualize national changes. There is a demonstrable need for long-term regional studies of the dynamics of rural social structure. Regional patterns are clearly diverse, but the reasonably reliable figures derived from the 1851 census provide the earliest comprehensive national survey of the structure of the farm workforce, despite the undoubted difficulties of using this material. By 1851, farm servants had all but disappeared from many south-eastern counties, but formed more than one-fifth of the agricultural workforce of all the English counties north of the Wash, reaching as high as two-fifths of the agricultural workforce in Cumberland and Westmorland.[5] However, preoccupations with developments in southern English arable counties have provided a model of early modern farm labour dominated by service. The assumption that the high levels of service in the North in the mid-nineteenth century reflected the survival of a fossilized agrarian regime has not been

[4] Woodward, 'Early modern servants', p. 150; S. Caunce, 'Farm servants and the development of capitalism in English agriculture', *AgHR* 45 (1997), pp. 49–60; G. Moses, '"Rustic and rude": hiring fairs and their critics in East Yorkshire *c.* 1850–75', *Rural Hist.* 7 (1996), p. 155; A. Mutch, 'The "farming ladder" in north Lancashire, 1840–1914: myth or reality?', *Northern Hist.* 27 (1991), p. 162–83; B. Short, 'The decline of living in servants and the transition to capitalist farming', *Sussex Arch. Collections* 122 (1984); R. Anthony, 'Farm servant vs. agricultural labourer, 1870–1914: a commentary on Howkins', *AgHR* 43 (1995), pp. 61–4; R. Anthony, *Herds and hinds. Farm labour in lowland Scotland, 1900–1939* (1997); T. M. Devine, *The Scottish Nation, 1700–2000* (1999), pp. 135–40.

[5] E. Higgs, 'Occupational censuses and the agricultural workforce in Victorian England and Wales', *EcHR* 48 (1995), pp. 700–16; D. R. Mills, 'Trouble with farms at the Census Office: an evaluation of farm statistics from the censuses of 1851–1881 in England and Wales', *AgHR* 47 (1999), pp. 58–77; E. A. Wrigley, 'Men on the land and men in the countryside; employment in agriculture in early nineteenth-century England' in L. Bonfield, R. M. Smith, and K. Wrightson (eds), *The world we have gained. Histories of population and social structure* (1986), pp. 295–336.

tested. This article offers a case study of Lancashire from the mid-seventeenth to the mid-nineteenth century and offers a critique of the theory that the social structure in 1851 reflected 'survival'.

Section one summarizes the size, composition and distribution of the agricultural workforce in Lancashire in 1851. It is found that day labourers dominated the hired workforce, albeit with low levels of employment per farm, and large numbers of family labourers. Section two reviews the evidence for change from the mid-seventeenth century to the mid-eighteenth. It is suggested that hired labour was relatively unknown on most Lancashire farms at this time. Section three reviews changes in the century after 1750. It is argued that during the last third of the eighteenth century, levels of hired labour increased in response to agricultural change and a heightened demand for labour. The final section discusses the issue of labour motivation, the relationship between farmers and their servants, and the reasons for the expansion of farm service in the late eighteenth century. It is argued that farm servants were inept, and unmotivated, often requiring close supervision. However, farmers experienced difficulties in procuring labour and the service contract provided them with a more secure labour supply. Labourers were in a strong bargaining position due to the competition Lancashire farmers faced from industry, which offered economic opportunity, independence and inflated wages. In order to satisfy their increased demands for labour, farmers looked to the service contract to supply a guaranteed workforce all year round. Consequently, farm servants increased in number. Farm servants were thus intrinsic to agricultural change in Lancashire, and not 'survivals' from an earlier primitive stage in development.

I

In the mid-nineteenth century, the day labourer overwhelmingly dominated the male farm workforce of Lancashire, although, with an average of fewer than two such workers per farmer, this does not suggest a high degree of proletarianization (Table 1). However, day labourers formed three-fifths of the male agricultural workforce, one-fifth were servants and a further fifth were family members. Women formed a negligible proportion of day labourers (although as Higgs suggests, female farm employment is substantially underrecorded). However, they did form 18 per cent of Lancashire's farm servants. Nevertheless, farmers' relatives undoubtedly dominated the female farm workforce of Lancashire. The employment of family labour is impossible to prove in individual cases, unless the census specifically describes relatives as farm workers, but in the absence of an alternative occupational description it is reasonable to suggest that women described as 'farmer's wife' or 'farmer's daughter' were involved in farm work, if only on a part-time basis. Pamela Sharpe and Joyce Burnette have both recently suggested that women's opportunities for agricultural employment fell during the period of the Industrial Revolution. However, there are clearly significant regional differences and in Northumberland, Gloucestershire and Somerset, for instance, women remained an essential part of the agricultural workforce in the nineteenth century. In Lancashire, the 16,000 female relatives of farmers aged over 10 and without an alternative occupational description in the census cannot be comfortably ignored and were likely to form a substantial and essential part of the farm labour force. Nevertheless, taking the farm workforce as a whole, day labourers still dominated with 43 per

TABLE 1. Composition of the agricultural workforce, Lancashire, 1851

	Males		*Females*		*All*	
	No	*%*	*No*	*%*	*No*	*%*
Agricultural labourer	27,254	60.1	761	3.9	27,995	43.3
Farm servant	8720	19.2	1968	10.2	10,688	16.5
Family labour	9339	20.6	16,641	85.9	25,980	40.2
Farmers	[15,998]		[1803]		[17,801]	
Total	45,293	100.0	19,370	100.0	64,663	100.0

Source: 1851 Census population tables II, vols I and II, ages, civil conditions, occupations and birthplaces (PP 1854, lxxxviii (1691)).
Note: Family labour is defined as all farmers' relatives over 10 not returned as being engaged in alternative employment.

cent, with family labour providing 40 per cent and servants 17 per cent. If we include farmers as part of the workforce, they, along with their family members, provided 53 per cent of the farm workforce, with day labourers at 34 per cent and servants at 13 per cent.[6]

It is perhaps not appropriate to include *all* farmers as part of the workforce, yet this approach is still instructive. In 1870, more than 80 per cent of holdings in Lancashire were under 50 acres and occupiers of land on this scale are unlikely to have been mere managers. Outwardly, this agrarian regime has many of the hallmarks of an anachronistic peasantry, with approximately two-thirds of the labour being provided by farmers, their family, or farm servants. On the other hand, the casualization of the workforce was probably more marked than these data suggest. The biggest single group were male day labourers, and they formed almost three-quarters of the hired workforce. The farm workforce was also swelled by large numbers of industrial workers who supplemented their income by labouring at times of peak demand, as well as the annual influx of Irish labourers that was commented on by contemporaries. The census fails to record either group, but nevertheless, the casualization of agricultural labour in mid-nineteenth century Lancashire appears to have been reasonably advanced, despite the emphasis on family labour and farm service in the literature.[7]

The composition of the workforce, however, was not uniform across the county. Table 2 shows the composition of the adult male agricultural workforce in Lancashire's 26 registration districts in 1851 divided between 'agricultural' districts (part a), districts with a mixed economy (part b)

[6] Higgs, 'Occupational censuses'; Pamela Sharpe, 'The female labour market in English agriculture during the Industrial Revolution: expansion or contraction?', *AgHR* 47 (1999), pp. 161–81; Joyce Burnette, 'Labourers at the Oakes. Changes in the demand for female day-laborers at a farm near Sheffield during the Agricultural Revolution', *JEcH* 39 (1999), pp. 41–67; N. Verdon, 'The employment of women and children in agriculture: a reassessment of agricultural gangs in nineteenth-century Norfolk', *AgHR* 49 (2001), p. 41. And see also S. Coombes and D. Radburn, 'Children and young people on the land', in M. Winstanley (ed.), *Working children in nineteenth-century Lancashire* (1995), pp. 72–92; Winstanley, 'Industrialization and the small farm'.

[7] Winstanley, 'Industrialization and the small farm', p. 168; W. Rothwell, *Report of the agriculture of the county of Lancaster* (1850), app. p. 51. See also A. Mutch, *Rural life in S. W. Lancashire, 1840–1914* (1988), pp. 39–42.

TABLE 2. Composition of the male agricultural workforce aged 20 and over, by registration district, Lancashire, 1851.

(a) Registration districts where more than 25 per cent of the male adult population were engaged in agriculture

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Occupations	*Agriculture (total)*	*Percentage working in agriculture*	*Labourers, family labourers & servants*	*Family labour (%)*	*Day labour (%)*	*Servants (%)*	*Servants per farmer*	*Labourers per farmer*	*Total labour per farmer*
Garstang	2243	63.0	1574	21.5	56.7	21.8	0.5	1.4	2.5
Ormskirk	5097	52.5	3708	24.1	57.9	18.0	0.5	1.6	2.8
Fylde	2356	42.0	1683	19.8	63.2	17.1	0.5	1.8	2.9
Clitheroe	2261	37.3	1306	22.7	76.7	0.5	0.01	1.1	1.5
Ulverston	2973	35.4	1911	21.3	49.7	29.0	0.6	1.0	2.1
Lancaster	2974	32.3	1925	24.0	49.9	26.1	0.5	1.0	2.1
Chorley	2480	25.4	1478	20.1	77.5	2.4	0.04	1.2	1.6
Average	2912	41.1	1941	21.9	61.7	16.4	0.4	1.3	2.2

(b) Registration districts where more than 10 per cent and fewer than 25 per cent of the male adult population were engaged in agriculture

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Warrington	2075	21.8	1611	9.1	88.3	2.7	0.1	3.2	3.6
Barton-upon-Irwell	1572	19.7	1236	11.7	69.7	18.5	0.8	2.8	4.1
Prescot	2789	19.0	2176	11.5	72.9	15.6	0.6	2.9	3.9
Leigh	1441	16.9	1001	25.1	64.3	10.6	0.3	1.5	2.4
Preston	3280	13.4	2079	24.9	57.9	17.2	0.3	1.1	1.9
Wigan	2621	13.1	1859	17.7	68.6	13.7	0.4	1.8	2.6
Burnley	1827	11.1	950	16.7	77.5	5.8	0.1	0.9	1.2
Average	2229	16.4	1559	16.7	71.3	12.0	0.4	2.0	2.8

(c) Registration districts where fewer than 10 per cent of the male adult population were engaged in agriculture

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Bury	1908	8.3	1295	16.1	73.7	10.3	0.2	1.6	2.2
Bolton	2419	8.3	1611	17.9	70.9	11.2	0.2	1.5	2.1
Haslingden	1049	8.1	427	13.1	81.7	5.2	0.03	0.6	0.7
Blackburn	1678	7.4	824	32.8	52.4	14.8	0.2	0.5	1.0
Rochdale	1346	7.0	634	18.1	74.0	7.9	0.1	0.7	0.9
West Derby	2490	6.7	1908	10.4	75.00	14.6	0.7	3.4	4.5
Oldham	1125	5.0	684	15.2	75.7	9.1	0.1	1.2	1.6
Ashton-under-Lyne	1379	4.5	841	13.9	75.7	10.3	0.2	1.3	1.7

continued over

Occupations	*Agriculture (total)*	*Percentage working in agriculture*	*Labourers, family labourers & servants*	*Family labour (%)*	*Day labour (%)*	*Servants (%)*	*Servants per farmer*	*Labourers per farmer*	*Total labour per farmer*
Chorlton	956	3.0	689	7.0	73.3	19.7	0.8	2.9	4.0
Salford	485	2.2	382	1.8	86.1	12.0	1.0	7.3	8.5
Manchester	1060	1.7	758	9.8	76.1	14.1	0.5	2.5	3.3
Liverpool	846	1.2	608	3.1	96.7	0.2	0.01	3.7	3.8
Average	1395	5.3	888	13.3	75.9	10.8	0.3	2.3	2.9

Source: 1851 census population tables II, vols I and II, ages, civil conditions, occupations and birthplaces (PP 1854, lxxxviii (1691)). Unfortunately, the table from which the above data is derived does not include those aged under 20.

Notes: Column 1 shows the total number of adult males contained in Class 9, part 1, of the 1851 census. Column 2 shows the total number of adult males from column 1 expressed as a percentage of the total number of males in each registration district. Column 3 shows the total number of agricultural labourers, farm servants (indoor) and farmers' relatives for each registration district. Columns 4, 5 and 6 respectively show the total number of farmers' relatives, agricultural labourers and indoor farm servants expressed as a percentage of column 3. Columns 7 and 8 respectively show the numbers of indoor farm servants and labourers per farmer. Column 9 shows the total hired and family labour (including family labour, farm servants and day labour but excluding the farmers themselves) per farmer.

and 'industrial' districts (part c).[8] Some significant trends are apparent. Family labourers were more common in the 'agricultural' registration districts contained in part 'a' of Table 2. Only three out of the nineteen non-agricultural districts recorded more than 20 per cent of their agricultural workforce as family labourers, while the lowest proportion in an 'agricultural' district was 19.8 per cent recorded for Fylde. They were least common in and around the major cities, where farming occupied only a negligible proportion of the workforce, with fewer than 10 per cent of the agricultural workforce being farmers' relatives in the registration districts of Chorlton, Salford, Manchester and Liverpool. Conversely, while only two of the seven 'agricultural' districts recorded more than 65 per cent of the agricultural workforce as day labourers, eleven of the twelve 'industrial' districts fell into this category. The distribution of farm servants is also distinct. Whilst five of the seven 'agricultural' districts recorded a proportion of servants in excess of 15 per cent, only four of the nineteen non-agricultural districts did so. Farm servants were to be found in greatest numbers in the registration districts of Ulverston and Lancaster, areas in the north of the county some distance away from the major centres of industry. Moreover, farm service increased in significance in north Lancashire in the later nineteenth century. In general, therefore, it is clear that where agriculture was more dominant, so too were family labourers and farm servants. Conversely, where industry was more dominant, so too were day labourers. There are some anomalies, however. For instance, the 'industrial' registration district of Blackburn returned exceptionally high numbers of family labourers, at the expense of day

[8] The distinction between agricultural, mixed, and industrial districts is for illustrative purposes only. Industry was ubiquitous in nineteenth-century Lancashire, although it is clear that the 'agricultural' districts in Table 2 represents most of west and north Lancashire, the 'industrial' districts cover most of south and east Lancashire where textiles dominated the economy, and the 'mixed' districts are primarily located on the boundary between the 'agricultural' and 'industrial' districts.

labourers, probably reflecting the dominance of small dairy farms in this area. On the other hand, the 'agricultural' districts of Clitheroe and Chorley had a lower proportion of servants than any other registration district except for Liverpool.

Columns seven and eight of Table 2 respectively show the number of servants and labourers per farmer, whilst column nine shows the total labour per farmer. Here the patterns are less clear cut although 'agricultural' districts generally had fewer labourers per farm than non-agricultural districts. The intensively cultivated districts of Warrington, Barton-upon-Irwell, Prescot, West Derby, and the city-fringe districts of Chorlton, Salford, Manchester and Liverpool, representing a large swathe of south and south-west Lancashire where green crop production and market gardening were significant, recorded levels of hired labour per farmer far in excess of the remaining registration districts. However, some districts indicate very low levels of male servant labour. The 'agricultural' districts of Clitheroe and Chorley along with Burnley and Warrington, and the 'industrial' districts of Haslingden, Rochdale, Oldham and Liverpool each recorded fewer than one servant for every 10 farmers. Of these Burnley, Haslingden and Rochdale along with Blackburn also recorded fewer than one labourer per farmer.

It is significant that the districts recording the lowest levels of paid labour inputs were in the upland industrial areas of East Lancashire where pastoral farming and handloom weaving dominated the local economy. In selected communities in the Ribble Valley, east of Preston, the 237 farmers collectively employed only 160 farm servants with a further 299 female relatives and 163 male relatives aged between 10 and 70 either enumerated as farm workers or enumerated without an alternative occupational description. There were 107 day labourers enumerated. However, these communities were also home to 256 handloom weavers and a further 70 persons ambiguously described as 'cotton weavers'. Moreover, twenty-two farmers with an average farm size of just 16 acres collectively had 64 co-resident relatives working in the cotton industry, 94 per cent of whom were described as weavers or handloom weavers. These farmers employed no farm servants. Clearly, part-time industrial employment would significantly bolster the family economy of the small farmer, but labour could also be released from domestic industrial production in order to perform agricultural work when necessary.[9]

This association between industry and agriculture was not specific to the mid-nineteenth century, and was a major feature of the domestic economy in the sixteenth, seventeenth and eighteenth centuries. Richard Latham's account book shows that the volume of textile and agricultural production, and therefore the family income, varied with the life-cycle of the family. Indeed, Latham substantially increased his textiles production on his south-west Lancashire smallholding in the 1740s when his children were in their teens. The processes of enclosure and engrossment did not eradicate these small farms, nor did industrial progress after the mid-eighteenth century and the later spread of factory production universally separate agriculture from domestic industry in Lancashire. In 1809, Dickson, the author of Lancashire's second *General View*, derided the 'great absurdity of small weaving farms', without any sensitivity to the positive relationships that existed between agriculture and domestic industry. Timmins cites evidence from the mid 1820s:

[9] J. G. Timmins, *The last shift* (1993), ch. 5; Ribble valley census analysis of Aighton, Bailey and Chaigley, Chipping, Dutton, Leagram and Thornley with Wheatley, Lancashire RO (hereafter LRO) MF 25/154. *N*=3669.

TABLE 3. Composition of the agricultural labour force, Altcar, Formby, Ainsdale and Birkdale, 1851

	Males		*Females*		*All*	
	No.	*%*	*No*	*%*	*No*	*%*
Agricultural labourer	261	44	24	11	285	34
Farm servant	133	22	2	1	135	16
Family labour	205	34	203	88	409	49
Farmers	[165]	–	[30]	–	[195]	–
Total	599	100	229	100	829	99

Source: LRO, MF 25/49-50, Census enumerators' books, 1851.
Note: Family labour includes those who were aged 10 and over without an alternative occupational description.

> It appears that persons of this description, for many years past, have been occupiers of small farms of a few acres, which they have held at high rents; and combining the business of Hand-loom weaver with that of working farmer, have assisted to raise the rent of their land from the profits of their loom.

In 1840, the assistant handloom weavers' commissioner wrote that '[handloom weavers] calculate upon field work in harvest-time; upon the produce of their potato settings; and in some districts upon fishing; and occasional employment in various capacities'. Clearly, even specialist handloom weavers who did not have access to land themselves could provide a significant proportion of the labour required by farmers at times of peak demand. Moreover, on farms where agriculture was combined with industry, daily routines such as milking were easily accommodated within the working day of a weaver.[10]

In arable south-west Lancashire, male day labourers were the largest single group of agricultural workers and dominated the hired farm workforce. North of Liverpool, in the communities of Altcar, Formby, Ainsdale and Birkdale, farm servants were to be found in 40 per cent of farmers' households, and yet they only formed 16 per cent of the agricultural workforce (Table 3). Female farm servants were virtually unknown. However, of the 81 farmers who provided an acreage, average farm size was 49 acres with only 10 farms over 100 acres. Consequently, farmers displayed a preference for family labour, supplementing this with day labourers where it was needed and only employing farm servants where there was no alternative. In addition whilst more than 90 per cent of family labourers and day labourers and almost 90 per cent of farmers were born within these communities, almost half of the farm servants had migrated (Table 4). Indeed, 14 per cent of servants had migrated more than 20 miles, most of whom had come from Ireland. Although most labourers and servants were local, 20 per cent

[10] J. T. Swain, *Industry before the industrial revolution: north-east Lancashire, c. 1500–1640* (1986), pp. 118–22; A. P. Wadsworth and J. De Lacy Mann, *The cotton trade and industrial Lancashire, 1600–1780* (1931), pp. 322–3; L. Weatherill (ed.), *The account book of Richard Latham, 1724–1767* (British Academy Records of social and economic history, new ser. 15, 1990); A. J. Gritt, 'The farmer as individual: Richard Latham', conference paper given at the Rural History Centre, Reading, September 2001; LRO, DDSc/9/70, R. Dickson, Hendon, to Thomas Eccleston, Scarisbrick, 21 June 1809; Timmins, *The last shift*, p. 72. Timmins provides a useful discussion on the relationship between handloom weaving and agriculture in the first half of the nineteenth century, pp. 71–78.

TABLE 4. Place of origin of farmers and agricultural workers, Altcar, Formby, Ainsdale and Birkdale, 1851.

(a) Males.

	Native		*<5 miles*		*5–10 miles*		*10–20 miles*		*>20 miles*		*Total*	
	No	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*
Agricultural labourer	235	90	14	5	7	3	2	1	3	1	261	100
Farm servants	74	56	24	18	12	9	5	4	18	14	133	101
Family labourer	187	91	1	1	15	7	0	0	2	1	205	100
Farmers	146	89	11	7	5	3	1	1	2	1	165	101
All	642	84	50	7	39	5	8	1	25	3	764	100

(b) Females.

	Native		*<5 miles*		*5–10 miles*		*10–20 miles*		*>20 miles*		*Total*	
	No	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*
Agricultural labourer	23	96	1	4	0	0	0	0	0	0	24	100
Farm servants	1	50	1	50	0	0	0	0	0	0	2	100
Family labourer	182	90	12	6	4	2	2	1	3	1	203	100
Farmers	24	80	5	17	0	0	1	3	0	0	30	100
All	230	89	19	7	4	2	3	1	3	1	259	100

Source: As Table 3.

had been born more than 10 miles away, and there was clearly a dependency on both tied and casual Irish labour. Mutch records similarly high levels of geographic mobility of farm servants in north Lancashire.[11]

II

The 1851 census is undoubtedly the earliest reliable source that allows us to study the size and composition of the agricultural workforce of Lancashire. Consequently, the analyses of pre-census data generate only tentative figures, but the lack of statistical rigidity does not invalidate the general trends. Early references to farm service and waged agricultural labour are not abundant and Wrightson's assertion that early seventeenth-century Lancashire was becoming increasingly proletarianized is not substantiated by the presence of a polarized agrarian social structure. Where we have apparently reliable sources, they uniformly indicate a landscape with few or no servants or labourers. The 1642 Oath of Protestation for the townships of Croston and Ulnes Walton recorded a total of 69 husbandmen and 15 yeomen. At the same time there were 27 'labourers' and 34 'servants', representing 0.73 hired workers per farmer. Moreover, not all of these servants and labourers were agricultural workers. Clearly, inputs of paid labour

[11] Mutch, 'Farming ladder', p. 170.

TABLE 5. Agricultural employment in Lancashire, 1678-9 (percentage of total recusants, male and female).

Status or occupation	*Amounderness hundred*	*Blackburn hundred*	*Leyland hundred*	*Lonsdale hundred*	*Salford hundred*	*West Derby hundred*
Yeomen	3.8	7.2	2.2	6.5	5.6	4.0
Husbandmen	26.8	31.7	30.9	43.6	25.5	39.5
Labourers and servants	16.7	3.1	4.7	0.5	2.8	4.0
N=	242	1121	622	385	216	1791

Source: B. G. Blackwood, 'Plebeian Catholics in later Stuart Lancashire, *Northern Hist.* 25 (1989), p. 163.

were not substantial in mid-seventeenth century Croston. The Oath of Protestation for the central Lancashire communities of Goosnargh and Whittingham reveal similarly low levels of proletarian labour. Indeed, there was a total of 38 yeomen, 114 husbandmen, 103 labourers and eight servants, or about 0.7 hired workers per farmer.[12]

Lancashire was home to the largest community of plebeian Catholics in England in the seventeenth century, and they were particularly concentrated in rural south-west Lancashire, which was also a stronghold of landowning Catholic families. There is no reason to suspect that Catholics were unrepresentative of the communities in which they lived, particularly those which they dominated. Blackwood's analysis of the Register of Recusants from 1678–79 is therefore particularly instructive (Table 5). Out of 1,791 individuals in the register for West Derby hundred, 780 (43.5 per cent) were listed as yeomen or husbandmen with only 71 (4 per cent) as 'labourers and servants'. The highest levels of hired labour were recorded for Amounderness hundred where there were 503 (30.6 per cent) yeomen or husbandmen and 276 (16.7 per cent) labourers or servants. Comparison with a 1682 list of Popish recusants indicates that about 7 per cent of Lancashire's Catholic population were labourers or servants in this period whilst about 38 per cent were yeomen or husbandmen. As Blackwood concludes, 'the fact is plain: labourers and servants formed tiny percentages of the Lancashire Catholic population' but this may equally be true of Lancashire as a whole.[13]

Evidence from the first half of the eighteenth century similarly points to low levels of hired labour. As a life-cycle occupation dominated by unmarried men and women under the age of 25, farm servants are not likely to be found in parish registers even where they were common, at least until their years of service had come to an end. On the other hand, day labourers ought to be readily detectable in marriage and baptism registers. The Blackburn baptism registers in the period 1698–1706 record 123 occupations. Fifty-six are non-agricultural, with 27 yeomen, 34 husbandmen, one gardener but only five labourers. Loschky and Krier, in their reconstitution

[12] K. Wrightson cited in J. K. Walton, *Lancashire: a social history, 1558–1939*, (1987), p. 28; LRO, MF 1/25, Protestation Returns, Croston and Ulnes Walton. I am grateful to my wife for this information. See S. Gritt, 'Family and kinship in Croston parish in the early seventeenth century', unpub. BA dissertation, University of Central Lancashire (1999). I am grateful to Dr. Henry French, University of Exeter, for the Goosnargh and Whittingham data.

[13] B. G. Blackwood, 'Plebeian Catholics in later Stuart Lancashire', *Northern Hist.*, 25 (1989), pp. 164–6.

of the north Lancashire parishes of Over Kellet, Gressingham and Claughton, record only 14 'labourers, serving men and dockers' to 123 'yeomen, husbandmen, and farmers' in the eighteenth century. The baptism register for the south-west Lancashire parish of Altcar in the period 1721 to 1734 records the occupation of 51 individuals. Thirty-nine were husbandmen and two were yeomen. Of the remaining 10, only one was described as a labourer. The baptism and burial registers of Walton-le-Dale in central Lancashire record only 10 labourers for the 36 yeomen and husbandmen in the period 1720–24. Walton-le-Dale was an industrial district, and weavers and bleachers significantly outnumbered farmers and labourers. Walton-le-Dale was not exceptional, and as Hey observes, 'even in non-industrial areas few parishes had many labourers during the years when baptism and burial registers recorded occupations'.[14]

Glennie has argued that militia ballot lists from the mid-eighteenth century onwards provide 'a comprehensive list of a major portion of the population – adult males. The chief advantage of ballot lists ... is as a source of occupational information with a combination of wide social coverage, substantial geographical coverage, and geographical specificity'. Notwithstanding the omission of women, minors and men over the age of 45 or 50, the presence of a rural proletariat ought to be detectable, if not measurable, through ballot lists. A militia list for Parr in south Lancashire from 1768–9 lists 36 husbandmen out of a total of 75 men aged 18 to 44. The list contains no labourers or servants. A quite different source, Arthur Young's *Six Month's Tour*, although contemporaneous, is contrary to the ballot list, and probably even less reliable. He visited 17 farms in Lancashire on his northern tour and recorded the composition of the workforce on each of them. He recorded a high level of hired labour on these farms: 21 servants, 23 maids, 20 boys and 15 labourers. However, as the average acreage of the farms he visited was over 113 acres, these data cannot be seen as representative of the county, and clearly represent an untypical employment pattern. Average farm size on the estate of the Earl of Sefton in south-west Lancashire, for example, was 30 acres in 1769, with fewer than five per cent of farms being over 100 acres. Richard Latham's account book reflects the labour structure of a more typical farmer. As a smallholder working a mixed farm, he relied on family labour for most of the time, hiring extra labour when members of his own family were incapacitated through illness or old age, or for specific tasks such as carting and ploughing. Latham, and many other farmers of south-west Lancashire could probably not have sustained a team of horses all year round and his demand for labour was as much a need for traction as it was for manual labour. This is supported by the fact that the Reverend Peter Walkden, who farmed a 40-acre holding near Chipping in central Lancashire in the 1730s, allowed neighbours to use his horses and farm 'lad' to cart goods, and supplemented his labour supply with more casual labour for ploughing and harvesting. Basil Thomas Eccleston of Eccleston near St. Helens was also in the practice of sending his plough teams to work for his tenants. Captain Dewhurst of Halliwell near Bolton allowed his farm servant to plough for his tenants for which he was

[14] H. Brierley (trans.), 'The registers of the parish church of Blackburn in the County of Lancaster, I, 1600–1660', *Lancashire Parish Register Soc.*, 41 (1911); D. J. Loschky, and D. F. Krier, 'Income and family size in three eighteenth-century Lancashire parishes: a reconstitution study', *JEcH* 29 (1969), p. 434. It is not clear what is meant by 'dockers'. LRO, PR 2465–7, Altcar parish registers, 1664–1809; D. Hey, 'Yorkshire and Lancashire' in J. Thirsk (ed.), *The agrarian history of England and Wales*, V, *1640–1750* (2 vols, 1984), I, p. 66 and n. 25.

TABLE 6. Composition of the agricultural workforce, Lancashire, 1767

	Yeoman		*Farmer*		*Husbandman*		*Labourers*		*Relatives aged 10–70*		*Servants*	
	M	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*	*M*	*F*
South west	27	0	57	7	131	0	23	0	181	355	28	52
Central	28	0	82	3	79	0	27	0	111	247	28	41

Source: E. S. Worrall (ed.), 'Returns of papists, 1767', *Catholic Record Soc.*, occasional publications, 1, 2, 1989), I, *passim*. South-west sample based on the returns from the townships of Astley, Aughton, Bedford, Bickerstaffe, Burscough, Cuerdley, Ditton, Downholland, Farnworth, Garston, Great Sankey, Halsall, Huyton, Knowsley, Melling, Ormskirk, Parr, Penketh, Pennington, Rainford, Scarisbrick, Tarbock, West Derby, Whiston, Windle. Central sample based on the townships and parishes of Garstang, Goosnargh, Samlesbury and Woodplumpton.

'to be made drunk'.[15] All suggest that Young's farmers with their high levels of labour are deeply untypical of the situation *c.* 1770.

The 1767 Returns of Papists are not the most reliable of sources upon which to base an analysis of occupational structure. Apart from the fact that they only cover a minority of the population and do not have the ability to enumerate households made up of different religions, there is a good deal of inconsistency from one parish to the next in terms of layout and detail, and the occupational descriptions themselves cannot be taken at face value. They are undoubtedly of most value in areas with high concentrations of Catholics. Table 6 shows the composition of the agricultural workforce in two sample districts where Roman Catholicism was particularly strong. Although farm servants formed almost 75 per cent of the hired labour force, the most striking feature is the very low level of hired labour. In south-west Lancashire, the 222 yeomen, farmers and husbandmen employed only 103 labourers and servants between them. In central Lancashire the 192 yeomen, farmers and husbandmen employed only 96 labourers and servants between them. Even if hired workers were only employed by yeomen and farmers, there would only be slightly more than one hired worker per farm based on these figures. What is perhaps significant is that almost two thirds of servants were female. Admittedly, some of these servants may have been domestic servants, but they were all employed by farmers and may have been involved in dairying. This dominance of women within the body of farm servants is contrary to the 1851 census evidence.[16]

[15] P. Glennie, *"Distinguishing men's trades": occupational sources and debates for pre-census England* (1990), p. 65; T. C. Barker, and J. R. Harris, *A Merseyside town in the industrial revolution. St. Helens, 1750–1900* (1959), p. 132; A. Young, *A six months tour through the north of England* (1771), pp. 155–6, 161–2, 166, 173–4, 184–5; LRO, DDM 14/12; A. J. Gritt, 'Aspects of agrarian change in south-west Lancashire, *c.* 1650–1850', (unpub. PhD thesis, University of Central Lancashire, 2000), p. 125; Weatherill (ed.), *Latham account book*; Chipping Local History Society, *The diary of the Reverend Peter Walkden for 1733–1734* (2000), 7 May, 11 Oct. 1733; LRO, DDSc 127/2–3, estate memoranda books to be published in A. J. Gritt and J. M. Virgoe (eds), *The memoranda books of Basil Thomas Eccleston, 1757–89* (forthcoming) where see entries for 15 and 16 Oct. 1765 and 3–18 Mar. 1766. W. D. Billington (ed.), *Captain Dewhurst and his diary* (1989) 12 Aug. 1785.

[16] E. S. Worrall (ed.), 'Returns of papists, 1767', *Catholic Record Ser.*, occasional pubs, 1–2, 1989), I, *passim*. See Gritt, 'Aspects of agrarian change', ch. 7 for a discussion of the methodological difficulties of using the returns of papists for the study of occupational structure.

By far the largest group of farm workers in 1767 was landholders' relatives. Juvenile children of landholders and adult relatives constituted 82 per cent of the available workforce. If husbandmen are included as part of the workforce, hired workers formed only 15 per cent of the available labour supply. This does not necessarily mean that relatives performed 82 per cent of the work, as a 10 year old is unlikely to do the same amount of work as an adult farm servant or hired labourer, but the numerical dominance of farmers' relatives is so great that family members must have performed a majority of the labour.[17]

III

There is evidence to suggest that between the mid-eighteenth and the mid-nineteenth centuries, the composition of the agricultural workforce in Lancashire underwent a dramatic transformation, a transformation which undoubtedly originated within the ranks of larger, more progressive farmers. Agricultural change was rapid and the expectations of farmers and landowners changed. Increased demand for agricultural produce accompanied the rapid growth of towns and industry. Land values increased substantially and new transport links provided farmers with the means to sell their produce and procure copious quantities of organic by-products generated by towns and industries. Reclamation of waste land, enclosure and drainage were pursued by landlords with vigour, and, in south-west Lancashire, a reorganisation of the system of tenure wiped out three-life leases for more profitable rack rents for terms of years. Tenants consolidated landholding. In 1769, farms over 100 acres occupied 37 per cent of the land area of Altcar; by 1800, this had increased to 44 per cent.[18]

These changes caused an increase in the demand for hired labour, which coincided with an increased demand for labour from industry. In 1815, Dickson noted that the 'large farmers commonly keep as many servants in their houses as are sufficient to perform the necessary business of the farms'. However, inflated war-time prices were undoubtedly contributing to the fact that many farmers were complaining about the expense of this system and were beginning to favour day-labour. Although Dickson's observations do not facilitate an estimate of the composition of the workforce, it is clear that the number of farm servants had increased since 1767, particularly on large farms, which had also become more common.[19]

Basil Thomas Eccleston owned an estate of around 2500 acres in Eccleston, near St. Helens, of which he farmed about one quarter himself. His memoranda books, covering the period 1757–89 are particularly interesting on the subject of farm servants. He did not have a large body of estate staff and was only employing five male servants, three female servants and two boys in 1766. However, the memoranda books do not suggest an established hiring date in the mid-eighteenth century and between 1757 and 1770 servants were hired in January,

[17] Wage rates suggest a differential in productivity between adult labourers and juveniles. In the Ormskirk district adult wages were said to be around £5–7 per annum whereas a boy of 10 or 12 was paid 30*s*. Young, *Six months tour*, p. 174.

[18] Gritt, 'Aspects of agrarian change', chs. 4–6; T. W. Fletcher, 'The agrarian revolution in arable Lancashire', *Trans. Lancashire and Cheshire Antiquarian Soc.* 122 (1962), pp. 93–122; J. Holt, *General View of the agriculture of the county of Lancaster* (1795). R. W. Dickson, *General View of the agriculture of Lancashire* (1815); Rothwell, *Report.*

[19] Dickson, *General View*, p. 598.

February, March, April, May, June, September, October, November, and December. Despite this pattern of hiring, there was a concentration in January, February and March. Between 1771 and 1782 Eccleston records the hiring date of 22 of his servants. Of these, three were hired in February, one in March, one in April, two in July, three in August, one in September and the remaining 11 were hired in January. Clearly, this was not an established, widespread system and there was no infrastructure in the form of a network of hiring fairs in south Lancashire to service the agricultural labour market. The situation seems akin to that recently described by Youngs in Cheshire in the early sixteenth century, where hiring was not assisted by hiring fairs and consequently servants' terms began and ended throughout the year. Surname evidence suggests that a number of servants who were employed by Eccleston in this period were probably related to each other and to some of his tenants. Nevertheless, Eccleston's hiring became more structured after 1770 as the institution of service became established. There was a clear preference to hire people in the first week of January, and those that were hired in February, March and April and July, August and September may have been on six-month hirings.[20]

Competition for labour, whilst causing a necessity to contract for labour for a set length of time, might also have promoted a more regular pattern of hiring in Lancashire from the mid-eighteenth century onwards. The agricultural economy could only function if labour was guaranteed, and a widespread system of farm service would operate more efficiently if individuals began and ended their period of service on set days. Until the mid-1760s, Eccleston encountered problems keeping his servants for the full period of their service. Individuals were reported leaving service in the first six months of the year, sometimes only a few weeks or months after entering service. This was less of a problem from the 1770s. The Lancashire industrial economy was gaining momentum in the mid-eighteenth century, and in the absence of an abundant surplus labour force coupled with the opportunity for inflated industrial wages, the labour inputs required by an improving agricultural system were neither guaranteed nor cheap. Indeed, in 1766, he observed that 'The labourers begun about this time to raise their wages from 10*d.* and 12*d.* per day to 14*d.* per [day]'. Within a decade, Eccleston had increased his 'plowmans' wages by 37.5 per cent, his 'cowmans' wages by 33 per cent, and his gardeners' wages by 19 per cent. The wages paid to his chambermaid and dairymaid increased by 25 per cent.[21]

In response to fierce competition for labour, agricultural wages were considerably higher in Lancashire than in the south of England, despite marked variations within the county. According to Armstrong, agricultural wages in the North were showing signs of advancement by the 1770s and by 1795 were 19 per cent higher than southern wages. This was not just a Lancashire phenomenon. Labourer's wages in Leyburn, north Yorkshire, remained constant between 1750 and 1767, and then increased by 25 per cent between 1768 and 1771. Even in the difficult years at the end of the Napoleonic wars when rural distress was widespread, Lancashire labourers apparently fared better than labourers in other English and Welsh counties. By the

[20] LRO, DDSc 127/2–3, discussed in Gritt and Virgoe (eds.), *Eccleston memoranda books*; D. Youngs, 'Servants and labourers on a late medieval demesne: the case of Newton, Cheshire, 1498–1520', *AgHR* 47 (1999), p. 149.

[21] LRO, DDSc 127/2–3.

mid-nineteenth century, agricultural wages in the North were some 37 per cent higher than those found in the south of England.[22]

By the beginning of the century, the proportion of farm servants in the agricultural workforce of Lancashire was undoubtedly rising sharply, contrary to the trends in southern England in the same period. The evidence for this is varied, and not always as direct as one would like. Population increase after 1801 was rapid, and in the first three decades of the nineteenth century some rural parishes grew more rapidly than some industrial towns. Moreover, this population growth was not universally accompanied by a significant increase in rural industry and was also maintained without an increase in the extent of pauperism.[23] In part, the expanded population came to occupy reclaimed land, but to a large extent, the increase in population was caused by the new agricultural labour force. Undoubtedly, more farmers' sons were staying in the parental home well into adulthood while others at least stayed in close proximity to the family farm. For example, after the population of Great Crosby increased 41 per cent in the decade after 1801, it was observed that 'The increase is chiefly to be attributed to the farmers and tradesmen bringing up their children to their own occupation & remaining in the village either as farmers, labourers, or tradesmen'.[24]

However, the population increase was also the result of substantial gender- and age-specific migration that was necessary to meet the labour demands of agriculture. In 1801, there was no discernible pattern in the distribution of males and females in Lancashire. By 1831, substantial population movement had caused a distinct and significant distribution of men and women with high concentrations of men being found in the arable areas of west Lancashire and the fertile valleys of the Ribble and the Lune, and women being concentrated in the towns. Average household size was also very high in south-west Lancashire. In industrial south-west Lancashire, typical household size was between 4.5 and 5.5 in 1801, while a central core of the Molyneux estate to the north and east of Liverpool was more congested, with between 6 and 6.5 people per house. By 1831, congestion had increased across south-west Lancashire with many townships containing more than 6.5 people per house. Undoubtedly, the rural houses of south-west Lancashire accommodated more people than those in the large urban and industrial centres in the same period. The increased numbers of males were, therefore, not independent artisans or labourers, occupying their own households as heads of families. The inference is that they were farm servants or family labourers. On many estates there was a reluctance to invest in new buildings, despite the fact that housing quality was particularly poor, and the provision of labourers' cottages was inadequate. Increased demand for hired labour was not accompanied by an increase in fixed capital investment in buildings. Labourers' cottages were generally

[22] J. D. Marshall, 'The Lancashire rural labourer in the early nineteenth century', *Trans. Lancashire and Cheshire Antiquarian Soc.*, 71 (1961), pp. 101–2; A. Mutch, 'The mechanization of the harvest in south-west Lancashire, 1850–1914', *AgHR* 29 (1981), pp. 125–6; G. R. Boyer, *An economic history of the English Poor Law* (1990), p. 45; G. E. Mingay (intr.), *The agricultural state of the Kingdom, 1816* (1970), pp. 141–5; W. A. Armstrong, 'The influence of demographic factors on the position of the agricultural labourer in England and Wales, *c.* 1750–1914', *AgHR* 29 (1981), pp. 76–7; W. A. Armstrong, 'Labour' in G. E. Mingay (ed.), *The agrarian history of England and Wales*, VI, *1750–1850* (1989), pp. 696–8.

[23] E. C. Midwinter, *Social administration in Lancashire, 1830–1860* (1969), p. 7.

[24] LRO, PR 2944/1/2.

unavailable, and living in was, in south-west Lancashire at least, a product of the heightened demand for labour and the deficiencies of the housing stock.[25]

The employment of large numbers of resident day labourers would have required large-scale fixed capital investment in buildings which neither farmers nor landlords were prepared to make. It was not until the 1830s and 1840s, when farm service was undoubtedly in decline in south-west Lancashire, that the estates began a major building programme providing houses and cottages for farmers and labourers. Even after mid-century, however, the provision of cottages for labourers was inadequate in much of the county. As Mutch shows, farmers saw that it was the landlord's duty to provide cottages for labourers, and petitioned the estates about the inadequacies of labourers' accommodation. Before mid-century, the new labour inputs required by the progressive arable farmers could only be obtained by hiring live-in farm servants. By mid-century, the farmers of south-west Lancashire were abandoning farm service as a consequence of further agricultural change. For instance, by the 1840s, more than half the land in Altcar was used for meadow, producing hay as a commercial crop to satisfy the demand from Liverpool. The predominance of hay reduced the need for a permanent workforce and the intensive, but seasonal, labour inputs were satisfied increasingly by employing Irish migrant labour. Moreover, mechanisation after mid-century further reduced the demand for servants.[26]

Increased numbers of farm servants in the early nineteenth century are also suggested by the 1823 militia muster roll, which survives for 59 townships in Amounderness hundred between the Rivers Ribble and Lune. The muster provides occupational details for 4150 men aged between 18 and 45. From these data, we can go some way towards analysing the composition of the agricultural workforce for the Fylde area.[27] Hiring fairs were held at Garstang, Lancaster and Ulverston, and, significantly, the muster shows that in the Fylde some 47 per cent of the male agricultural workforce aged 18 to 45 in 1823 were servants. This sample is not representative of the workforce, omitting women, children and those over 45, but nevertheless, the data are indicative of a high-service agrarian economy in the 1820s, which had declined by 1851.[28]

A serious source of error in the muster, however, is the fact that family labourers are not directly recorded. Some may have been returned as husbandmen, others as labourers, although it is unlikely that they were recorded as servants. The township of Woodplumpton, for instance, recorded 83 husbandmen, eight labourers and no servants in the muster. Winstanley has demonstrated that family labourers were common in Woodplumpton in 1881, and the 1767 Return of Papists suggests a significant amount of family labour. Nevertheless, it is

[25] Gritt, 'Aspects of agrarian change', pp. 294–5, 247–8. On housing provision and housing quality in south-west Lancashire, see A. J. Gritt, '"For want of reparations": tenants and the built environment on the estates of south-west Lancashire, 1750–1850', *Trans. Historic Society of Lancashire and Cheshire* (forthcoming). Mutch suggests that high levels of farm service was a product of deficiencies in the housing supply coupled with the close proximity of mining in north Lancashire in the later nineteenth century. 'Farming ladder', p. 164.

[26] Mutch, *Rural life*, pp. 34–5; Mutch, 'Mechanisation' pp. 125, 129–30; Gritt, 'Aspects of agrarian change', p. 211; Rothwell, *Report*, app., p. 51; Armstrong, 'Labour', p. 682.

[27] LRO, LXA 6. This covers a much bigger area than the 1851 Fylde registration district. The militia returns covers parts of the 1851 registration districts of Fylde, Garstang, Lancaster and Preston.

[28] I am grateful to Dr. S. Caunce for information regarding Lancashire hiring fairs and for his constructive advice regarding their functionality and role in the labour market; A. J. Gritt, 'Occupational age specificity and the study of occupations', unpub. paper (1998); Gritt, 'Census and servant', p. 88.

undoubtedly the case that hired labour was much more significant in 1823 than it had been 50 years earlier.[29]

Despite the flaws in the 1831 census data and the inability of conventional analysis to reveal the composition of the workforce, detailed analysis at the township level still yield some striking trends. Figure 1 shows the ratio of labourers and servants per occupier not employing labour in the townships of Lancashire in 1831. This measure has previously been used as a guide to the extent of proletarianization within English agriculture at the county level. It is certainly a useful indicator of differences in rural social structure. Conventional analysis of the 1831 data indicates that Lancashire, with two paid labourers to every 'peasant' farmer, had the lowest ratio of any English county of labourers and servants per occupier not employing labour. At the other extreme, in Essex there were 43 paid labourers to every 'peasant' farmer. At this broad county level, it is clear that Lancashire's rural social structure was not as polarized as that found elsewhere. However, this county average masks a great deal of significant sub-regional variation. Indeed, there was a significant polarisation within the county reflecting farming type and proximity to market. In general, the least proletarianized, or certainly the least polarized areas, were the industrial uplands in the east of the county, while the highest numbers of labourers and servants per farm were recorded in the immediate vicinity of Liverpool and Manchester. This pattern broadly fits the analysis of the 1851 data above (Table 2). The ratio of 'capitalist' farmers to 'peasant' farmers shows a similar distribution (Figure 2). With such wide variations in the social structure of agrarian Lancashire, it is misleading to consider the issue of agricultural labour at the county level. The fact that 47 per cent of the adult male agricultural workforce were returned as servants in the townships covered by the 1823 muster does not mean that 47 per cent of Lancashire's agricultural workforce were servants at that time. It is certain that the county figure was much less than this.[30]

IV

Farm servants were not widespread in Lancashire before the late eighteenth century. Despite the hiring fairs in Garstang, Lancaster and Ulverston, the general absence of hiring fairs in most of Lancashire is a conspicuous piece of negative evidence about the structure of the farm workforce in the early modern period. Although the estates and the larger farmers had employed labourers and servants, most farms were under fifty acres, and even though they were not subsistence farmers, family labour was usually sufficient to maintain a mixed or dairy farm of this size. However, levels of paid labour inputs increased substantially in the late eighteenth century as agriculture underwent rapid improvement and became increasingly oriented towards urban capitalist markets. In arable south-west Lancashire the number of farm servants probably peaked between 1815 and 1830. On the pasture farms of northern Lancashire the number of farm servants continued to increase throughout the nineteenth century.

In order to achieve and sustain increased land productivity from the late eighteenth century, and to maximize the efficiency of a new farming regime that placed greater emphasis on intensive arable cultivation and market gardening, the progressive farmers of west Lancashire required

[29] Winstanley, 'Industrialization and the small farm', pp. 187–8.

[30] Overton, *Agricultural revolution*, p. 179; See also Gritt, 'Census and servant', p. 86

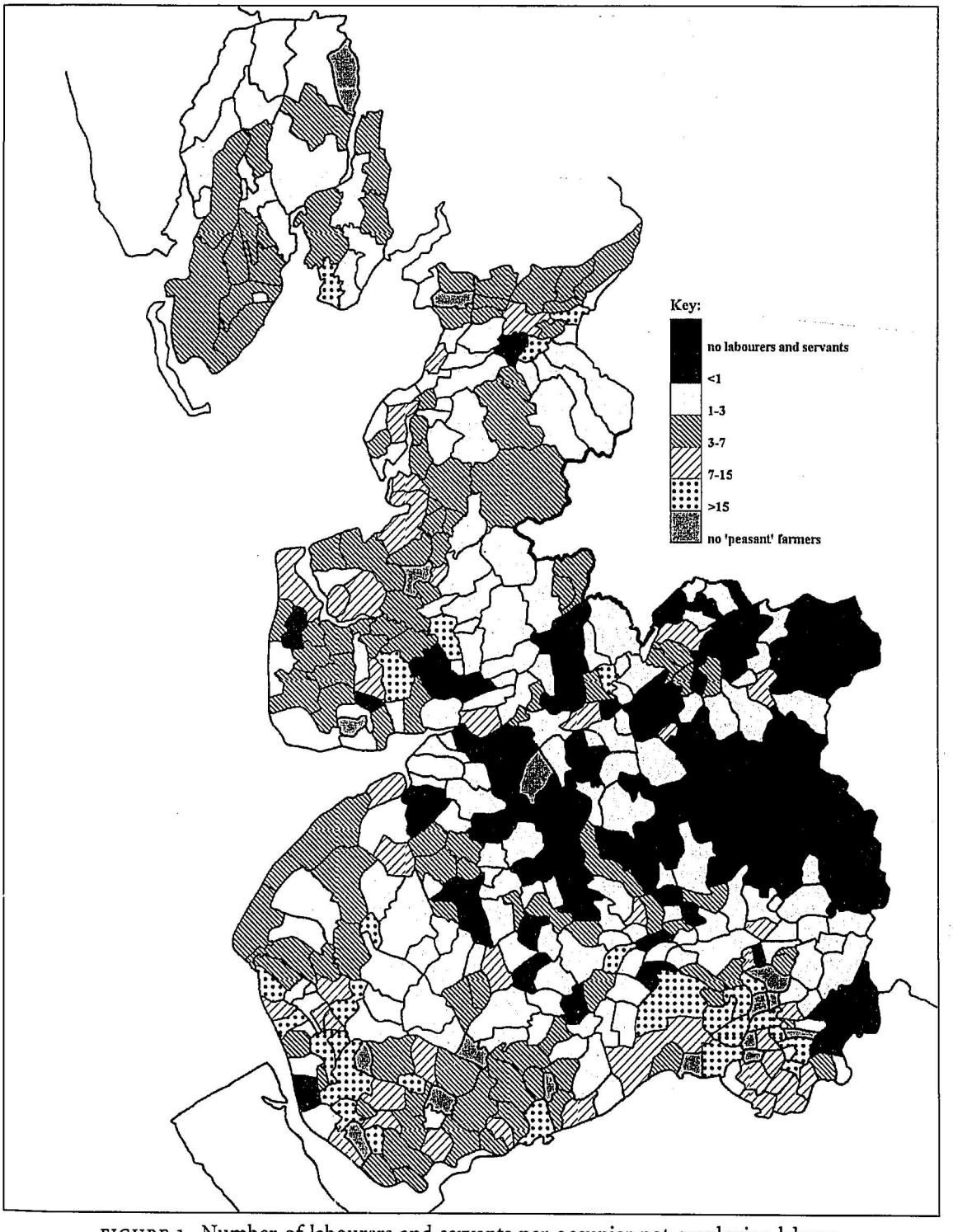


FIGURE 1. Number of labourers and servants per occupier not employing labour, Lancashire townships, 1831.

Source: 1831 census, *Abstract of answers and returns* (BPP 1833, xxxvi (149)).
Base map courtesy of Dr Alan Crosby and the Friends of Lancashire Archives.

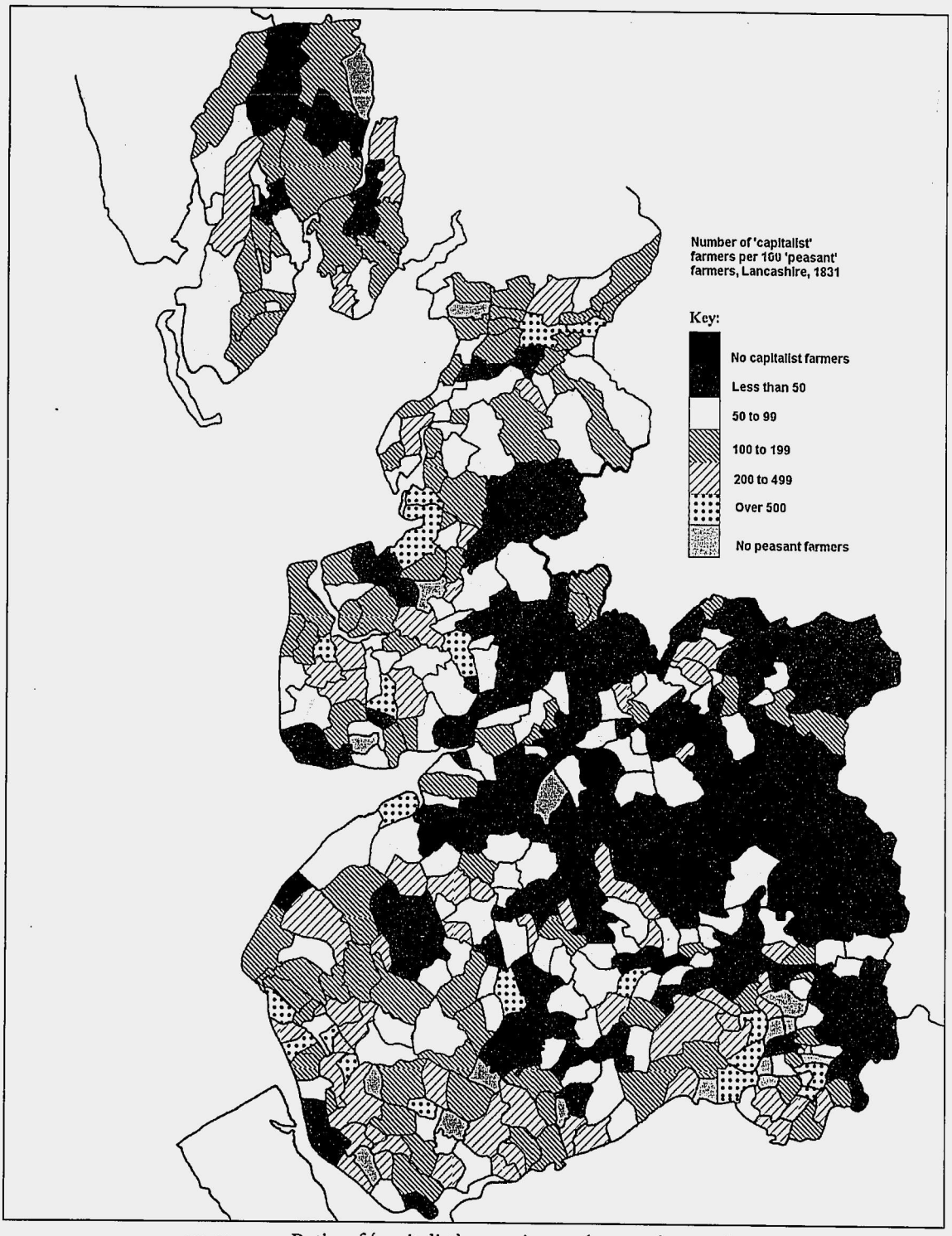


FIGURE 2. Ratio of 'capitalist' occupiers to 'peasant' occupiers, Lancashire, 1831.

Source: 1831 census, *Abstract of answers and returns* (BPP 1833, xxxvi (149)).
Base map courtesy of Dr Alan Crosby and the Friends of Lancashire Archives..

greater labour inputs. Thereafter, as arable cultivation gave way to commercial hay production and the cultivation of green crops in south-west Lancashire, servants declined and were replaced by a more casual farm workforce. In the upland east of the county and in central Lancashire, small dairy farms supplemented by handloom weaving dominated, providing the expanding urban centres with a supply of liquid milk. In certain of these districts, family labour dominated the farm workforce, but in east Lancashire generally, it was the day labourer that dominated by 1851. In northern Lancashire, in the agricultural districts furthest from the main centres of population and industry, where the pull of distant towns depleted the available workforce and local industry provided employment opportunities for the unskilled, farm service continued to grow in strength in the nineteenth century. They did so not as a 'survival', nor as part of a primitive, anachronistic farming regime, but as the only means by which commercial farmers could guarantee a labour supply. Hired farm labour was a development of the commercialisation of agriculture in Lancashire that followed demographic change, and urban and industrial expansion. The precise form of labour contract varied from one region to the next, but farm service as a means of procuring labour was a response to other economic factors. It is clear that between 1767 and 1851 a relatively small rural proletariat was created in Lancashire that had no early modern equivalent. Moreover, farm servants cannot be excluded from that proletariat.

Yet, we have not established why Lancashire farmers turned to service as the solution to their increased need for hired labour in the late eighteenth century. Could it be the case, as Caunce has suggested, that service was agriculture's equivalent of proto-industry, an earlier stage of development that formed a bridge between subsistence and full-blown agrarian capitalism, providing farmers with a guaranteed level of *motivated* labour?[31] Labour motivation is clearly difficult to prove without oral testimony, but the evidence presented by Woodward led him to conclude that

> There is no reason to suppose that servants were intrinsically more reliable than day labourers; indeed, given the youth of the majority of servants, and the absence of the responsibility which marriage brought to day labourers, it is likely that servants were among the least reliable of employees and would have been even more unsteady without close supervision.[32]

The evidence from Lancashire is not abundant, but largely agrees with Woodward's conclusions. The Reverend Peter Walkden employed a servant, Harry Wilkinson, on his forty-acre farm near Chipping in central Lancashire. Wilkinson was aged 16 in 1733 and Walkden's diary testifies to his general ineptitude as a farm labourer, and to the fact that he only worked under close supervision for much of the time. In April 1733, for instance, he was sent with a horse and cart to transport some straw, but 'he not being perfect in the road', Walkden found it necessary to send his wife with him. In May, Wilkinson returned home crying because he had been run over by a cartwheel. He had lost control of the horse in his charge and Walkden only became aware of the accident when the horse arrived home injured 'with the cart, but no wheels, and the cart broken in several places'. He ran away from his service in April when Walkden had found it necessary to 'hit him a blow or 2 on his ear', only to be brought back by his mother who was eager that 'he should stay his year out'. For his part, Walkden 'approved not of his running' and was 'pleased' to have him back, though he expected to 'have him in awe'.

[31] Caunce, 'Farm servants and capitalism', p. 52.

[32] Woodward, 'Early modern servants', p. 143.

In a display of temperamental immaturity, he threatened to leave his service after he had been taunted by a female visitor to Walkden's household. Wilkinson 'Got up our [fire] tongs to strike at her, But mist her and hit daughter Ann of the forehead, and broke the skin and rais[ed] a boil, then took out of our fireiron end and threw at her, and missing her, he hit my Love on the Eye and wounded it'. Wilkinson 'fled' from the house, returned to collect his clothes saying he was going home. Then he returned 'calling Ellen bitch and whore, and said he would have killed her'. Wilkinson seems not to have been reprimanded for this behaviour, and Walkden was generally a lenient employer, allowing Wilkinson some leisure time, and actually giving him money to travel to fairs at Lancaster and Chipping. Nevertheless, Wilkinson could not have been a good advert for the advantages of employing a farm servant, and any degree of motivation is worthless without the ability to perform tasks dutifully, efficiently, independently and effectively.[33]

Basil Thomas Eccleston employed a number of farm servants, and although he does not record their close supervision, he does record their incompetence and the way in which a servant contract did not always guarantee a labour supply for the year. Service did not necessarily provide access to an able, dependable workforce. He records the names of seven dairymaids that he employed between 1761 and 1783, four of whom proved to be unsatisfactory to Eccleston. Of these, two ran away from service, one after being 'much abused and crushed' by his 'cowman', who also left his service as a consequence. In 1775, Eccleston's cheese was said to be 'very ordinary' occasioned by the fact that 'the maid Helen Houghton' was guilty of 'not understanding the business so well as she ought to have done'. In 1783, he recorded that 'Elizabeth Unsworth my dairymaid through negligence spoiled me 40 cheeses'.[34]

Captain Roger Dewhurst owned a small estate in Halliwell near Bolton, and his diary for the years 1784–6 shows that his farm servant, James Ramsbottom, was a particular problem. Ramsbottom preferred drinking to work. At five in the morning on 20 January 1785 he was sent with a message to a Mrs Gregge on the other side of Bolton, but at nine that night Dewhurst received a message to say that Ramsbottom had been taken ill. However, at half past eleven Ramsbottom was brought home drunk, with the cost of the journey being stopped from his wages. He was occasionally capable of carrying out his work with apparent diligence, such as in June 1785 when he was 'mowing from three in the morning till nine at night', but this was untypical. More typical of Dewhurst's relationship with his servant was when he recorded that 'James Ramsbottom was very lazy in mowing the great plot. He waited and rested no less than seven times in the morning'. The consequence was that the mowing, which Dewhurst expected to cost 1*s.*, actually cost him 4*s.* Ramsbottom was not Dewhurst's only troublesome farm servant. In January 1785 he resolved that John Turner, a servant who was also prone to neglecting his duties, 'shall certainly remove next year'. In August 1785, when Dewhurst allowed Ramsbottom to do some mowing for one of his tenants, Dewhurst seemed glad to get rid of him for the day and he employed another labourer to finish his own mowing, which was done in three hours. Ramsbottom 'took this highly amiss' and he was persuaded by the farmer for whom he had laboured for the day to leave his service. Dewhurst was clearly not pleased about this, and noted that 'he is hired by the year, and I have kept him all winter'. Despite the poor relations between

[33] Chipping Local History Society, *Walkden Diary*, 30 Mar., 11, 14 Apr., 5 May, 16, 24 Aug., 25 Sept., 22 Nov. 1733.

[34] LRO, DDSc 127/2–3, discussed in Gritt and Virgoe (eds), *Eccleston memoranda books.*

Dewhurst and Ramsbottom, Dewhurst was prepared to hire him again by October that year, but he recorded that 'He refuses to be hired again, says he will not be fast'. By early November, Dewhurst was looking for a replacement servant, and agreed to take one George Booth 'on trial for a fortnight'. The trial was seemingly unsuccessful, and by February 1786 Ramsbottom was again back at the Dewhurst household, although only temporarily as Dewhurst 'told him he should never come here again'.[35]

In the light of this evidence, it would seem that Rothwell was romanticising the position of the farm servant within the rural social structure when, in 1850, he reflected on changes during the first half of the nineteenth century:

> With respect to the moral principles of the *farm labourers*, in Lancashire, I am afraid they do not stand so high as they did forty years ago. And I am also of opinion that the farmers themselves, do not render that strict justice to their labourers as they did forty years ago; nor is there that fellowship and friendly feeling which there was then. That kindly feeling which ought to exist between them, is still on the decline; and the evils of which I speak, are, I am afraid, much on the increase, arising, in a great measure, from the fault of the masters and mistresses increasing the distance between themselves and their servants. The great body of farmers seem to care little about their servants, except to extract the greatest possible amount of labour from them; and yet, in my opinion, they take the worst means of ever obtaining this ... When I was a farmer, those servants who boarded in the house, partook at the same table as myself, and sat in the same room of an evening, talking over what we had done, how we might have done it better, and how we could best do the work tomorrow, or next week. It was the same in my father's time, and neighbouring farmers, with their regular farm servants.[36]

Nevertheless, whilst Rothwell's memory of farm service at the turn of the nineteenth century may have been flawed, he was certainly not romanticising the relationship between farmers and servants in 1850. Significantly, for an agricultural improver, and for a perceptive and critical agricultural writer, he was in favour of service. He argued that 'Those who board with the farmer, live in a better style' than casual labourers. He also observed the poor, and declining, standard of living of day labourers generally and argued that 'task-work' was 'more practised than formerly'. While there is more than a tinge of paternalism in Rothwell's analysis, farm servants were not necessarily a bar to agricultural improvement.[37]

It may be the case that Lancashire farmers generally, except perhaps the small minority of large farmers, enjoyed better relations with their farm servants than the estate owners Eccleston and Dewhurst and the cleric, Walkden. Each of them was of a higher social status than many of their neighbours, and none of them were dependent on agriculture for their livelihood. Although Walkden frequently worked alongside his servant, ineptitude became apparent when Wilkinson was working alone. Dewhurst never records working alongside his servant, which therefore provided the opportunity for Ramsbottom to neglect his duties. This lack of supervision perhaps explains the independence but lack of skill demonstrated by their servants. It is

[35] Billington, *Captain Dewhurst*, entries for 20, 22 Jan. 26 Jul. 1785, 10, 11 Jun. 1784, 17 Jan. 12 Aug., 26 Oct., 5 Nov. 1785, 9 Feb. 1786.

[36] Rothwell, *Report*, pp. 125–7. See also app., pp. 51–2.

[37] Rothwell, *Report*, app., p. 51.

unlikely that the abundant opportunities for non-agricultural employment and rising real wages were sufficient to *cause* the apparent neglectful, carefree, but confident attitude of servants. In 1758, James Warne, who farmed 'on a substantial scale' in Dorset, confidently wrote that 'I'm like to have work folk a plenty', yet the indiscipline, independence and absenteeism of his farm servants were a source of constant frustration.[38]

In Northumberland and the East Riding of Yorkshire, where capitalist farming in the nineteenth century depended upon farm service, the scale of farming was such that a highly structured form of service evolved which made it a largely self-regulating system. Indeed, in the East Riding, 'servants had virtually no contact with their employers'. The hierarchy of farm service, although different in each region, provided supervision and added responsibilities for those individuals at the top. On the small farms of Lancashire, the farmer did not have the means to be a mere manager, and servants would find themselves working alongside their masters. This is clearly reflected in Rothwell's reminiscences. Although farmers and servants were socially differentiated by the labour contract and the cash nexus, this social division was much narrower for the majority of Lancashire farmers than it was for the well-documented gentlemen farmers. Moreover, Mutch has shown that in 1871 in north Lancashire 48 per cent of farm servants were farmers' sons, which further highlights the general lack of social distance between small farmers and their servants. Nevertheless, it remains to be said that close supervision was the key to the effectiveness of farm service rather than any intrinsic motivation that the servants possessed.[39]

If labour motivation was not the reason for the increased numbers of farm servants in late eighteenth-century Lancashire, why did the changes in the rural social structure take the form they did? It is no coincidence that the new social order was created during a period when agriculture was going through a transitional phase, taking advantage of the new market opportunities. The swelling of the body of farm servants in Lancashire was not a product of agrarian inertia but was a necessary consequence of wider economic and social change, and they were a fundamental part of an improving agrarian regime. The farmers employing them were commercial farmers producing cash crops for sale on open market. They were directly dependent upon the urban-industrial capitalist market economy for their prosperity.

In order to take advantage of the new opportunities it was necessary for them to secure a supply of labour. However, facing fierce competition from industry, this was not straightforward. Marshall argues that there was no 'serious labour shortage' in agriculture in early nineteenth-century Lancashire. However, the labour shortage was only avoided by offering long contracts at wage levels that were significantly higher than southern wages in the same period. The take-off period for the agricultural regime of Lancashire coincided with the industrial take-off period, and the associated developments in the transport infrastructure. Agriculture was in conflict with industry for land and capital, and farmers were in direct competition with industrial employers for labour. One correspondent from industrial east Lancashire commented in 1798, 'We have no servant – they are not to be got here for money'.[40]

[38] G. Mingay, 'The diary of James Warne, 1758', *AgHR* 38 (1990), pp. 72, 75–7.

[39] A. Howkins, *Reshaping rural England: a social history, 1850–1925* (1992), p. 53; Caunce, 'Farm servants and capitalism', p. 56; Mutch, 'Farming ladder', p. 174.

[40] Marshall, 'Lancashire rural labourer', p. 127; LRO, DDX 1609/1, Jno Rutter, Littleborough, to Jane Rutter, Croston, 8 Feb. 1798.

Farmers would use their social contacts in their efforts to secure a labour supply, often over distances of many miles. Basil Thomas Eccleston of Eccleston, for instance, used his contacts in Scarisbrick thirteen miles distant to secure both casual and tied labour. Henry Blundell of Little Crosby on numerous occasions in the early 1790s wrote to John Barrow, a Catholic priest in Claughton near Garstang, looking for reliable servants. Blundell clearly had difficulty in finding servants, especially ones of the right character. In 1792, when he was looking for a groom, he explained to Barrow that 'I frequently hear of serv[an]ts., grooms etc. who have been in places, but parted with for some irregularity. Such servants seldom ans[we]r. I sh[oul]d always prefer a man out of the country, who will soon learn his business'. Servants were no more abundantly available in Claughton as Barrow explained that the 'print houses, cotton factories, forges etc. in this neighbourhood employ the whole of both sexes, so that good servants of any denomination are become very scarce'. Nevertheless, Barrow did manage to supply a succession of servants and dairymaids to Blundell, although in 1795 he explained the reluctance of individuals to be bound in service. Claughton was detached from the main centres of cotton production, and yet even here it employed the majority of the female population. Industry provided economic independence for women 'who are keen of being their own mistresses and living free from constraints'. This economic competition made it 'difficult to procure proper servants'.[41]

The difficulties encountered in procuring farm labour encouraged farmers to offer long contracts and servants would expect substantial financial reward for binding themselves. Thus, from the late eighteenth century onwards the ranks of the farm servant swelled to unprecedented levels. From the second quarter of the nineteenth century regional developments diverge. In south-west Lancashire farm service entered a decline as they were replaced by a more casualized farm labour force made possible by the provision of labourers' cottages. For a brief period farming prosperity was dependent upon the labour of farm servants, but once improvements had begun to take effect the farmers of the 1830s and 1840s began to expect greater social distance between themselves and their labourers. As the built environment was improved, and farmers began to live in greater domestic comfort, the number of servants declined accordingly and by 1851 the day labourer dominated the rural workforce, despite the comparatively large numbers of family labourers and farm servants.

Even by the mid-nineteenth century, individual farmers did not normally employ more than two or three labourers, but although the scale of farming was small, it was undoubtedly capitalistic, and markedly different from the farming regime and agrarian social order that existed half a century earlier, which was in turn different from that of the mid-eighteenth century. Two-fifths of the male agricultural workforce in Lancashire in 1851 were either farm servants or family members, yet the persistence of such forms of labour does not necessarily indicate an inefficient, ossified farming system. The high wages of the Lancashire rural labourer would have made large-scale capitalist agriculture inefficient or even unprofitable and labour supply might not have satisfied the demand. In Cumbria, Wensleydale and Swaledale in the later nineteenth century the low labour costs of small farmers gave them a commercial advantage over the larger 'capitalist' farmers, allowing the former to prosper in adverse economic circumstances. The labour supply of family labourers varied over the life-cycle, but was relatively fixed in any given year, providing

[41] Gritt and Virgoe, *Eccleston memoranda books*, 25 Oct. 1762, 27 Jul. 1772; LRO, RCCl 2/51, letters dated 31 Jan., 19 Feb. 1792, 16 Nov. 1795.

inputs for minimal expenditure. Consequently, as Critchley argues, 'capital is not released for other uses by their idleness or wasted by their uneconomic employment'. Family farming was labour intensive but family labour was not capital intensive.[42]

The same is true of farm servants and to look for the reasons for the 'survival' of farm service in the north of England is a red herring. Farm servants were not a 'survival' but a fundamental part of the development of specialized, commercial production for capitalist markets. Theoretically, service provided farmers with guaranteed levels of labour at a fixed rate. Their employment contract places them outside the true proletariat and despite the social distance between servants and farmers, servants did not demonstrate a proletarian consciousness. Yet, as we have seen, servants could demonstrate a fiercely independent attitude, even if this was sometimes accompanied by ineptitude. During the transitional phase of agricultural development from the late eighteenth century, farm servants occupied the position of the waged labourer in the tripartition of rural society.

Yet servants were more common in the arable districts of west Lancashire than they were in the pastoral/industrial districts of east Lancashire. The presence of cottage industry in east Lancashire, and its survival into the mid-nineteenth century provided a pool of reserve casual labour and the distinctions between agricultural labour and industrial labour only became clear with the onset of the discipline of factory employment. Peter Walkden's farm servant, Harry Wilkinson, was employed in spinning wool when he was not engaged in agricultural work, which also supplemented his wages. Roger Dewhurst's farm servant, James Ramsbottom, was engaged in mowing hay alongside several local 'crofters'. Handloom weavers were not likely to abandon the loom for the scythe in the prosperous years of the late eighteenth century, but by the 1840s agricultural work might have provided a welcome supplement to their family income. This pool of reserve labour was not present in west and north Lancashire, where industry was significantly less important to the domestic economy, and without long contracts the labour supply would have been deficient in these areas. By the mid-nineteenth century, when service was in decline, farmers in west Lancashire were increasingly dependent on Irish migrant labour which provided sufficient levels of labour inputs at times of peak demand. After mid-century farmers in south-west Lancashire increasingly looked to technological solutions to their labour requirements.[43]

Farm service in nineteenth-century Lancashire was not a survival, a hangover from a pre-capitalist era. Indeed, farm service only became significant at the precise moment that agriculture was becoming increasingly capitalist, commercial and market-oriented, in response to wider changes in Lancashire's economy. Farm service may not have provided a skilled, motivated workforce, but as a supplement to family labour and the labour of the landholder, closely supervised servants were a necessary component of the intensification of farming from the late eighteenth century.

[42] Searle, 'The odd corner of England', pp. 425–6; C. Hallas, *Rural responses to industrialisation: The North Yorkshire Pennines, 1790–1914* (1999), p. 24; J. S. Critchley, *Feudalism* (1978), p. 170. The efficiency of family labourers and the extent to which their employment was 'uneconomic' is more complex than Critchley suggests. Many family farms in the northern uplands were not purely agricultural families, and often combined farming with industry. Uneconomic farm work would, therefore, be detrimental to the family economy if that time might be more profitably spent weaving. I intend to investigate the relationship between handloom weaving and family farms on a future occasion.

[43] Chipping Local History Society, *Walkden Diary*, 5 Sept., 23 Oct. 1733; Billington, *Captain Dewhurst*, 12 Aug. 1785. 'Crofters' were bleachers of cotton cloth.

Litigation and the policing of communal farming in northern Burgundy, 1750–1790*

by Jeremy D. Hayhoe

Abstract

This study examines the administration of common land and rights in northern Burgundy (now the *département* of the Côte d'Or). Based primarily on court cases heard and fines handed out in a sample of seigniorial courts, it argues that the glue holding communal farming together was a vigilant local court system assisted by a few inhabitants co-opted each year by the community to work as field guards. The everyday working of communal agriculture involved chronic rule breaking, sneaking, policing, fining and litigation in a constant struggle between the village as a community and each villager as an individual. In their attempts to describe class struggle and fights between lords and villages over commons, French historians have underestimated the extent of everyday conflict that was inherent to the system.

French historians have debated the social politics of communal farming at some length. Marc Bloch posited that the constraints of communal farming were most strongly resented by the better off in the village, the so-called rural bourgeoisie. It was they who most often wanted to withdraw their fields from village-wide crop rotation and divide commons. There is an easy symmetry to Bloch's association of 'agrarian individualism' with those who apparently best mastered market forces. In his assessment, it was the poorer members of the community, with little property and no pasture of their own, who clung most strongly to communal rights and opposed the coming of bourgeois individualist property to the countryside.

Bloch's identification of wealthier farmers with individual property rights has not gone unchallenged by historians. The destruction of the Marxist interpretation of the French Revolution has led to a re-evaluation of the social politics of farming. Alfred Cobban, characteristically, claimed that Marxist historians had things entirely back to front. In fact, it was the village poor who most strongly called for agrarian individualism (enclosure, division of common land) and the better off who most opposed it. The poor, he said, had little access to communal rights and land, which were dominated by those who owned the most animals and had the most clout in the village. The poor wanted to gain a few square meters of land through division of commons or to keep their own pasture away from the large herds of the better off.[1]

Several local studies have provided evidence of Cobban's contention that communal farming did not benefit the poor. In many parts of France the number of cattle that inhabitants were

* For their careful reading and helpful comments on this article, the author wishes to thank Don Sutherland, Rafe Blaubarb, Jeff Houghtby, Robert Schwartz and Nadine Vivier.

[1] Marc Bloch, 'La lutte pour l'individualisme agraire dans la France du XVIIIe siècle', *Annales d'Histoire Economique et Sociale* 2 (1930), pp. 329–381, 511–565; Alfred Cobban, *The social interpretation of the French Revolution* (1965), pp. 112–117.

allowed to put out to common pasture, and onto openfield stubble after the harvest, was limited by wealth. Nadine Vivier says that everywhere the commons belonged only to those villagers who owned land, occasionally only to those landowners who had inherited their land. In lower Provence it was usual for the number of cattle permitted on common land to be determined by the amount of taxes each person paid. And in many regions villagers were allowed to keep on *vaine pâture* (communal pasture on privately held stubble and fallow) only the number of cattle they could fodder through the winter. This meant that only those who could provide winter hay could take full advantage of communal rights.[2]

The debate over which social classes were enclosers and which were fence-smashers focuses our attention on class conflict, but misses the sheer extent of conflict of all kinds in communal farming. This article employs evidence from court cases and village archives in late eighteenth-century northern Burgundy (Map 1) to propose that historians have underestimated the amount of contention that was inherent in the system of communal agriculture. Taken together, the volume and nature of disputes over common land and communal farming suggest that, despite the popularity of the system, what held communal farming together in northern Burgundy was neither social harmony nor class interests, but an effective and vigilant court system.

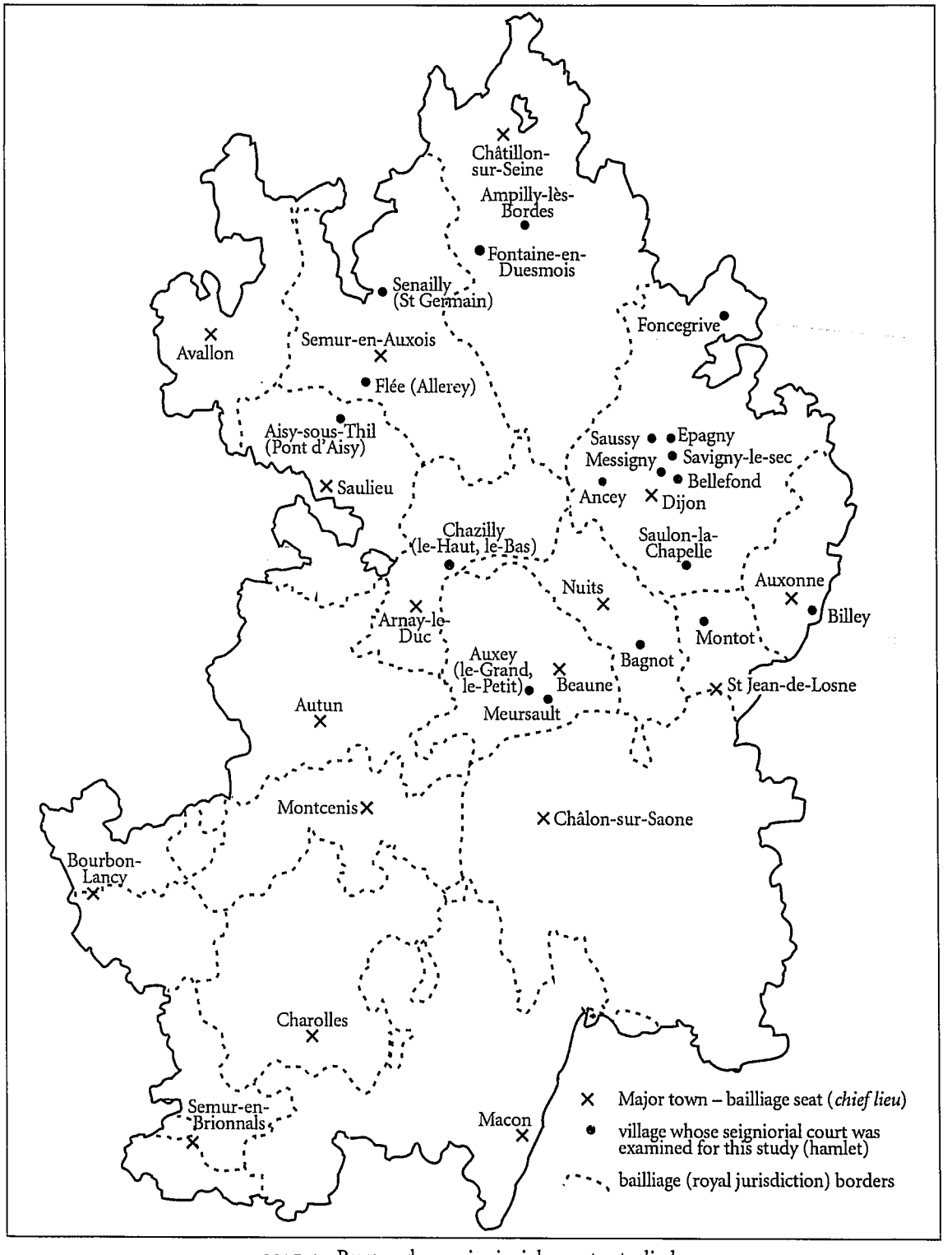
The article begins with a description of the rules and practices of communal farming in eighteenth-century northern Burgundy. Due to royal edicts and Parlement *arrêts*, by the mid-1770s villages and private individuals could do away with communal agriculture. That few chose to do so is used to suggest that the system remained popular. We then move on to a discussion of the way local seigniorial courts joined forces with the village community to police agriculture. The fields, forests and heaths of each village in northern Burgundy were protected by the local seigniorial court and up to six inhabitants who were appointed annually to patrol the fields. The most striking thing about the policing of agriculture in northern Burgundy is the volume of fines that local courts handed out each year. In most courts, fines for breaking the rules of communal farming outnumbered every other operation of the court (including civil, criminal, police and probate cases). Furthermore, every community had to be alert to protect its common land, suing its own inhabitants for wood theft, illegal pasturing and theft of commons.

I

The rules governing communal pasture on fallow and post-harvest stubble in northern Burgundy were similar to those in other European regions of openfield farming and village-wide crop rotation. The whole village harvested at the same time.[3] After the harvest was complete, all the

[2] Nadine Vivier, *Propriété collective et identité communale. Les biens communaux en France, 1750–1914* (Paris, 1998), pp. 48–54. René Baehrel, *Une croissance. La Basse-Provence rurale de la fin du seizième siècle à 1789. Essai d'économie historique statistique* (Paris, 1961), pp. 195–197.

[3] Inhabitants were forbidden from harvesting until the *prud'hommes* (locals elected each year for the estimation of civil farming torts) decided that the fields were ripe for harvest. Sometimes the lord was entitled to nominate two experts to accompany the village's two. Starting the harvest before the publication of the *ban de moisson* would lead to a fine, if caught. In one village, for example, four inhabitants appeared before the local judge to tell him that 'having roamed the fields of wheat [they] have decided that for the public good and utility the harvest cannot be opened before next Monday, ninth of the present month'. Departmental Archives of the Côte d'Or (hereafter ADCO,), B2 605/1, seigniorial court of Fontaine-en-Duesmois, Grands-Jours, 2 May 1781.



MAP 1. Burgundy – seigniorial courts studied.

Source: Drawn from Christine Lamarre, *Petites villes et fait urbain en France au XVIIIe Siècle. Le cas bourguignon* (Dijon, 1993), p. 124.

fields of the village were thrown open for pasture on the stubble. Village pasture rights also applied to unenclosed meadows after the first cutting of hay, although in some parts of Burgundy, notably the *bocage* of the Morvan, pastoral land had long been surrounded by hedges and stone fences and was exempt from communal pasture. This right was the result of the division of land into miniscule plots spread over the countryside, the size of which made it impossible to keep grazing animals on one's own fallow or stubble.

There were several controls on the use of pasture that helped the system work smoothly. The two main considerations were the protection of fields still planted in crops and the need to ensure the fair distribution of existing pasture resources. To settle these problems, the law of Burgundy's provincial Parlement required that each village have a communal herder and that all cattle, sheep and even pigs be committed to his care.[4] Depending on the size of the herds, the same herder could look after all of the animals, or the herds could be divided into the 'large' and 'small' cattle (cows and horses in one case and sheep and pigs in the other). The herders were paid by those whose animals they kept, according to the number of animals in the herd. In Senailly the communal herder annually received two bushels of wheat and one bushel of barley per cow, a half-bushel of wheat per calf and a quarter bushel per pig.[5] All inhabitants, as the local courts never ceased repeating, were to keep their animals 'under the staff of the communal herder'. The only exception was animals used to work the fields. Oxen and horses, by definition work animals, never appear in lists of animals in the communal herd. Those without oxen but well off enough to own a plough could keep several cows out of the herd as work animals.

The main purposes of the communal herd were to control access to village farming resources and to protect the unharvested fields. The herder did his most important work during the summer, keeping the animals on pasture and fallow and out of the wheat, barley and oats in the fields. He also made it much easier for the court and local officials to police the fields, since hundreds of wandering animals under the careless eye of children and domestic servants could have caused untold, and unattributable, damage in the fields. The requirement that all inhabitants keep their animals in the communal herd also made it easier for the village community and the court to know exactly how many animals each villager owned, making it harder for a few inhabitants to monopolize pasture.

In Burgundy most villages owned some land. This could range from fertile permanent meadow used for hay, to scrub land fit only for occasional pasture, to dense forest. Whatever the nature of the land, commons in northern Burgundy benefited wealthier villagers the most. When the community harvested the land and divided the crop among the inhabitants, whether the crop was wood or hay, the better off got the most. The most common arrangement was to divide a third of the hay or wood evenly among all the families, in equal portions. The remaining

[4] This was a long-standing policy of the Parlement of Dijon. A pamphlet published for officers of seigniorial courts with relevant police laws, lists under the heading of 'troupeau séparé' (separate herd) Parlement *arrêts* from the following years: 1608, 1609, 1622, 1656, 1660, 1670, 1676, 1679, 1683, 1697, 1700, 1732, 1733, 1735, 1740, 1771. *Règlements généraux qui s'observent dans tout le ressort de la cour, et dont on fait lecture à la tenue des Grands-Jours. Nouvelle Edition. Revue, corrigée et augmentée* (Dijon, 1786). See Henri Forestier, 'Le troupeau commun', *Annales de Bourgogne* 14 (1942), pp. 130–134.

[5] ADCO, B2 1220/7, seigniorial justice of Senailly, St Germain, Grands-Jours, 22 June 1789.

two-thirds they would divide 'au marc la livre de la taille royale', in proportion to the amount of royal taxes each household paid.[6] Occasionally the division was still less equal. For instance, in Villerrottin the villagers decided to divide half of the hay proportional to taxes, and to sell the other half 'to the profit of the community'.[7] Since inhabitants paid village expenses in proportion to royal taxes, this division of the hay was in effect entirely proportional to income. In Chazilly-le-Haut all of the harvest from the communal forest was divided in proportion to taxes.[8]

The same uneven use of communal resources applied to pasture rights. In Lanthes, after the public prosecutor had brought a suit against three locals, the judge ordered them to get rid of any sheep they owned or leased 'over and above the amount of land they cultivate'. Apparently a formula was used to relate the amount of land farmed to the maximum number of sheep each family was allowed to put on common land or stubble.[9] The unequal division of the produce from communal resources was not only the practice in most villages, but was also the formal policy of the Dijon Parlement. This can be seen most clearly in the Parlement's policy toward *regain*. In 1779 this court authorized all communities to reserve some of their lands for growing a second crop of hay. The *arrêt* specified that this hay be sold in public auction, with the revenue divided 'in proportion to what each of the said inhabitants has heads of large cattle'.[10]

A consensus is emerging among historians of communal agriculture in France that the view of common land as a pre-capitalist form of land holding where all villagers shared equal access is romanticized and inaccurate. The wealthy had a larger share. There remains some question, though, on the extent and ways that the village poor could make use of common land and rights. Access to commons in many parts of France was determined by law and enshrined in written legal custom.[11] This was not the case in Burgundy, and the result was that access of the poor to common land varied from village to village.[12]

In a few villages, the poor were explicitly included among those entitled to use common land. The village of Senailly devoted part of its commons to arable farming. Every twenty years or so they re-divided the land among the inhabitants. In 1789 they did such a division. A survey

[6] ADCO, B2 603/2, seigniorial justice of Foncegrive, Grands-Jours, 18 Dec. 1787.

[7] ADCO, E Dépôt 701/1, communal archives of Villerrottin, register of village assemblies, assembly, 30 May 1781.

[8] In 1788 Emilland Bize sued the village of Chazilly-le-Haut to receive what he claimed was his share of that year's harvest of wood from the communal forest. He claimed that since he paid an eighth of the village's taxes, he should be entitled to an eighth of the wood. The villagers never challenged him on this, pointing out instead that he was an inhabitant of Chazilly-le-Bas, where he paid his taxes. ADCO, B2 sup 77, seigniorial justice of Chazilly-le-Haut, sessions 26 Apr., 31 May, 7, 14 June, 19 Aug. 1788.

[9] ADCO, B2 668/1, seigniorial justice of Lanthes, sessions 27 June, 8 July 1785. Similarly in 1755, the judge of Montot reminded the village of his ruling of 1744 limiting the number of sheep according to the amount of land owned and leased. ADCO, B2 763/1, seigniorial justice of Montot, Grands-Jours, 3 Sept. 1755.

[10] Dijon Municipal Library, MS 19,178, Recueil des déclarations, édits, lettres patentes et arrêts du Conseil d'Etat du Roi, registrés au Parlement de Dijon. vol 12, Arrêt 6 July 1779.

[11] Vivier, *Propriété collective*, pp. 49–50.

[12] The Burgundian Custom contains sections on common land, but is more concerned with relations between neighbouring villages and between lords and villages than with relations within the village over rights to land. Jean Bouhier, *Les coutumes du duché de Bourgogne avec les anciennes coutumes, tant générales, que locales, de la même province, non encore imprimées.* (2 vols, Dijon, 1742), I, pp. 22–23.

determined that the land measured 204 *journaux*, which they split into 200 plots and divided among the 64 families (each got three plots of first, second and third quality). The land was divided among all taxpayers in the village, and since even the poor paid nominal taxes they received as much land as the other inhabitants.[13]

It was more usual for villages to use their commons for pasture than to divide it for arable use. In these cases, could the village poor send animals out for free pasture? The question of whether the poor could put a cow or two onto the commons is difficult to answer. We will see below that the poor almost never got fined for illegal pasturing of cows on the commons, suggesting that they did not own any bovine animals. But since a cow represented a serious investment that would likely be beyond the means of most poor inhabitants, it is more instructive to consider the rules for smaller animals like sheep, goats and pigs. There was great variety in the pasturing of these smaller animals. In some cases the number of pigs allowed onto the commons was to be proportional to taxes, effectively barring the poor.[14] Some villages forbid pigs entirely from commons, while others allowed them into the village herd.[15]

Rights over commons varied not only from village to village, but over time within the same village, with the rights of the poor changing depending on the leanings of the judge, the local power-brokers, the lord and even the provincial Intendant. In Ancey, for example, after 1754 villagers were not allowed to own any goats, due to the way their teeth destroyed the trees even in mature forests. In 1788 the judge told the same village that thereafter they would be permitted only one goat per household.[16] Access to common land in northern Burgundy remained inegalitarian everywhere, and in most places the poor had no established right to use the land. The poor, though, did what they could get away with, sending sheep, goats, geese and other small animals onto the commons until they became troubling enough for some of the more settled inhabitants to complain to the local judge.

The uneven access to common land and communal rights meant that conflict over these resources sometimes split the village along lines of wealth. In 1782 the seigniorial judge of Montot called the village together to see if the inhabitants wanted to allow sheep and geese to pasture on the commons. Of the 42 men present at the assembly, 27 were opposed to the free pasturing of sheep and geese, while 15 wanted the practice to continue. Of those opposed to the ban, six had herds of sheep and geese that they routinely sent onto the commons. It is also significant that all but two of those who voted to allow the sheep and geese access to the land were poor *manouvriers* and *journaliers*.[17] This is not only because some of these poorer

[13] ADCO, B2 1221/2, seigniorial justice of Senailly, St. Germain, village assembly before the judge, survey, description of land, 1789. For a list of the households, ADCO, C 7375, tax rolls, Senailly. Ampilly-lès-Bordes also split some of its common into plots for arable farming. See ADBO B2 1078/1, seigniorial justice of Ampilly-lès-Bordes, village deliberation before the judge, 13 Feb. 1787.

[14] ADCO, E Dépôt 701/1, Villerrottin, register of village assemblies, 4 Oct. 1789.

[15] For the former, Belleneuve, ADCO, B2 451/1, seigniorial justice of Belleneuve, Grands-Jours 29 Oct. 1755. For the latter, Senailly. ADCO, B2 1022/7, Grands-Jours 14 Apr. 1750.

[16] ADCO, B2 1253/1, seigniorial justice of Ancey, local ruling, 15 May 1754. ADCO, B2 1252/3, seigniorial justice of Ancey, Grands-Jours 21 Oct. 1788.

[17] A note on occupational titles: by definition *laboureurs* were those better-off peasants who owned their own plough and a team of horses or oxen. *Manouvriers*, on the other hand, were too poor to have their own plough.

farmers in the village used the commons to feed a small gaggle of geese for subsistence, but also because some *manouvriers* kept large flocks of sheep, most often acquired by credit in the form of the *bail à cheptel*. In this case it seems that some of the less wealthy villagers used the commons to raise some money and were opposed to attempts to reserve common pasture for horses and cows, the animals of the more prosperous.[18]

Disputes that pitted social groups against each other could also arise when the villagers discussed the mode of division of communal resources. The policy of the Parlement of Dijon to divide the wood, straw and hay from common land a third by head and two-thirds by taxes, sometimes came up against local practice, which in some places was division entirely in proportion to taxes. In Messigny, at a village assembly ordered by the provincial Intendant to determine whether division of wood from the forest would be done in the prescribed proportions, five inhabitants stormed out of the assembly in expression of their opposition to this slightly more egalitarian division. All of those who left were *laboureurs* and all paid more taxes than average. They included the seigniorial over-tenant (*fermier*) and the second wealthiest inhabitant of the village.[19]

In these local disputes between social groups there is no indication that anyone was truly opposed to village-wide crop rotation, post-harvest communal pasture, or common land. By the late eighteenth century individual farmers could choose whether to participate in communal agriculture. In 1770, at the request of the provincial Estates of Burgundy, the king formally authorized all farmers to enclose their land, subtracting it from communal crop rotation and pasture. Land enclosed by a hedge or fence of any kind, the edict specified, was not to be subject to 'the pasturing of animals other than those to whom the land belongs'. Furthermore, to facilitate the consolidation of the small strips characteristic of openfield agriculture, the king offered exemptions on royal and seigniorial land transfer fees to any who exchanged small plots within the next six years. Four years later, again at the request of the Estates, the king allowed communities to divide their common land among the inhabitants.[20]

Despite the physiocratic programme of Burgundy's administrators, communal farming remained vibrant until well into the nineteenth century. There was little enclosure of arable land in the province. Since *vaine pâture* was in effect a reciprocal arrangement, any farmer who enclosed and thereby kept others' animals off his fields would then not be allowed to put his animals onto the village fields. There would be, therefore, little real gain for the

[18] ADCO, B2 764/1, seigniorial justice of Montot, village deliberation recorded in judicial archives, 9 June 1782. The identities of the villagers come from ADCO, C6036, Montot tax rolls, 1782. The list of those who had sheep and geese is from ADCO, B2 764/1, seigniorial justice of Montot, report of the sergeant, 5 Apr. 1784. The *bail à cheptel* was a form of credit whereby the farmer agreed to raise a herd of borrowed sheep in exchange for half of the profits (the lambs and the manure). The farmer generally also engaged himself to take half of the losses. Françoise Fortunet, *Charité ingénieuse et pauvre misère. Les baux à cheptel simple en Auxois aux XVIIIe et XIXe siècles* (Dijon, 1985).

[19] ADCO, 4E 5/120, notary Forneron of Messigny, village assembly, 21 Dec. 1788.

[20] ADCO, B 12138, Parlement de Dijon, registration of royal acts, Edit portant permission ... de clore, Aug. 1770. ADCO, B 12143, Parlement de Dijon, registration of royal acts, Jan. 1774.

encloser.[21] In a sample of 3200 court cases from fourteen local seigniorial courts in northern Burgundy during the 1750s and 1780s, there is only one case that clearly involved arable land enclosed by a farmer.[22]

Communal agricultural practices remained an important part of the running of farms in late eighteenth-century Burgundy. In an openfield system it would have been impossibly difficult to police the fields and guard against pasture theft and roaming animals. Few Burgundian farmers took advantage of the possibility of enclosure of arable land because people were not opposed to *vaine pâture*. Put simply, the incredible multiplicity of miniscule plots in these fields made open pasture and communal herds the most logical arrangement.[23]

II

If communal farming simplified the policing of fields and forests by giving everyone a stake in all the land, there was nevertheless a great deal of patrolling, reporting and fining required to keep the system running smoothly. In northern Burgundy communal farming worked through a close relationship between the village community and the local seigniorial court.[24] Most of the interaction between the court and the village took place each year at the Grands-Jours. These were annual assizes, held in each village, where the judge read aloud the relevant royal and Parlement edicts and *arrêts* and oversaw the election of local officials. The judge would ask the assembled heads of household (whose attendance was mandatory and enforced by fines) whether they had any complaints about village affairs. The complaints could come from any of the villagers present and might touch on a wide variety of matters. Frequently the inhabitants informed the court that the forest was in poor condition, that encroachments were eating

[21] On attempts of administrators to reform agricultural practice, André-Jean Bourdes, *Agronomie et agronomes en France au xviiie siècle* (3 vols, Paris, 1967); Georges Weulersse, *La physiocratie à la fin du règne de Louis XV, 1770–1774* (Paris, 1959); Georges Weulersse, *La physiocratie à l'aube de la Révolution, 1781–1792* (Paris, 1985); Elizabeth Fox-Genovese, *The origins of Physiocracy: economic revolution and social order in eighteenth-century France* (Ithaca, 1976). See too Saint Jacob's discussion of the effects of enclosure. He lists many examples of *clôture*, but they all involve meadows rather than arable land. Pierre de Saint-Jacob, *Les Paysans de la Bourgogne du Nord au dernier siècle de l'Ancien Régime* (Paris, 1960), pp. 450–53. Jean Meuvret, *Le problème des subsistances à l'époque Louis XIV*, (6 vols, Paris, 1977–88), II (i), pp. 12, 26–28, 30–32.

[22] In 1786 in the village of Villerrottin, Jeanne Roussey, widow of François Merceret, was fined for not having constructed a strong barrier around her land. She had subtracted some land from the communal rotation, choosing to plant to wheat a parcel that was in the field reserved that year for fallow. ADCO, B2 458/4, seigniorial justice of Billey, Villerrottin, Grands-Jours, 7 Sept. 1786. Jeanne Roussey and her husband were from the poorer half of the village (in 1782 they paid 13 livres in royal taxes, while the average for the village was 21 livres). When Merceret died in 1782, Roussey asked that the court should not conduct an inventory of the estate, claiming that the costs of the probate inventory would devour all of the property. Merceret died with so little property that his four children only got 3 livres each from the moveables of the estate. For the appointment of guardianship for the children: ADCO, B2 454/7, seigniorial justice of Billey, Villerrottin, tutelle, 10 Dec. 1782. For the tax data, ADCO, C6452, Villerrotin tax rolls, 1782.

[23] D. N. McCloskey, 'English open fields as behavior towards risk', *Research in Economic History* 1 (1976), pp. 124–170.

[24] Quite possibly Burgundy had the most active seigniorial courts in all of France, in part because of a series of reforms undertaken by the Dijon Parlement from the late 1760s. See Jeremy D. Hayhoe, '"Judge in their own cause": seigniorial justice in northern Burgundy, 1750–1790' (unpublished PhD thesis, University of Maryland, 2001).

up the commons, even that an inhabitant's chimney threatened to set his home and the village afire. The judge ruled on these matters, sometimes simply ordering the community to investigate. He then handed out all of the police fines for the past year. These fines included some feudal matters like poaching, some disruptions of public order such as charivari, public drunkenness and working on the Sabbath. The vast majority of fines were for violating the rules of communal farming.

For the judge to pass sentence on illegal pasturing and wood pilfering he first had to hear of the offence. Local officers known in Burgundy as *messiers* reported pasturing on private land before the fields were opened. These field guards, known elsewhere in France as *gardes champêtres*, were nominated and elected each year by the village community. Since each village appointed two new *messiers* each year, a high proportion of married men served in the position at one time or another.[25] They patrolled the fields, seized any trespassing cattle, and then submitted a report to the clerk of the seigniorial court. The clerk held the reports, and submitted them to be judged at the next annual assize.[26]

Villagers did not want the job of *messier*. They were paid a small amount of money, but not enough to pay for the time they spent on the job.[27] They would also be held civilly responsible for any offences that they failed to report. In 1783 the *messiers* of Foncegrive were fined 3 livres 5 sols for failing to catch some cattle roaming the fields. In civil damages they paid the owner of the land a half measure of oats (about twenty litres).[28] In fact 178 of 603 civil trespass torts tried in the assizes of fourteen local courts from 1780 to 1789 saw civil damages assessed against *messiers* rather than those actually responsible. This civil responsibility made the job undesirable for villagers, who often tried to pass the job off on someone else.[29]

III

The fines levied each year by the judge of the local seigniorial court on those whose animals were caught either in other people's fields or on the stubble before all fields had been completely

[25] For a discussion of local office holding in northern Burgundian villages, see Robert M. Schwartz, 'Beyond the parish pump. The politicization of the peasantry in Burgundy, 1750–1850', in Michael P. Hanagan, Leslie Page Moch and Wayne te Brake (eds), *Challenging authority: the historical study of contentious politics* (Minneapolis, 1998), pp. 120–35.

[26] In regions where the villagers made wine, the inhabitants also generally appointed two *vigniers*, whose duties were virtually identical to the *messiers* except that they were to seize cattle that wandered into the vines.

[27] In Messigny the *messiers* were paid 4 sols for every cartful of hay or clover harvested in the village. In Ancey, on the other hand, villagers had to pay 5 sols for each *journal* of land (about half an acre) they planted. See ADCO, B2 1048, seigniorial justice of the religious chapter St. Bénigne, justice of Messigny, Grands-Jours, 28 Aug. 1780. ADCO, B2 1252/3 seigniorial justice of Ancey, Grands-Jours, 4 Sept. 1786.

[28] ADCO, B2 603/2, seigniorial justice of Foncegrive, Grands-Jours, 17 Nov. 1783.

[29] Being a *messier* was a heavy responsibility, both financially and in time spent patrolling. The judge of Belleneuve enjoined the *messiers*: 'to report to the clerk, with the same exactitude the whole year ... all offences to the fields and to land planted in wheat, barley, oats, hemp, beets and other small grains and the pasture torts ('*mésus*'), as well as degradations committed to the communal forests, heaths and bushes either by animals or by the theft of grass, hay and wheat, or in cutting, removing, gathering wood ... and if they fail to seize the guilty ... will be responsible for the torts and offences in their own private name'. ADCO, B2 451/1, seigniorial justice of Belleneuve, Savolle, la Motte d'Ahuy, and Lambelin, Grands-Jours, 12 Nov. 1753.

TABLE 1. Offences tried in eight northern Burgundian seigniorial courts.

	1750-59	*1780-89*
Pasturing fines	1638	1625
All cases in regular session	324	530
All (civil and criminal) cases in the assizes	220	1181
Probate acts	365	578

harvested can help us see how the system worked in practice. There were a large number of violations of the rules of communal farming. Even courts with no more than two or three meetings a month in regular sessions, and fewer than fifty cases over a decade, remained active in fining people for farming misdemeanours at the assizes. The court of Fontaine-en-Duesmois heard only twelve cases in regular session during the entire decade of the 1780s. Over the same period this court fined 148 people for letting their cattle roam free in the fields of the village. In the same decades the court of Ancey had only 21 cases in regular session, yet saw 138 fines handed out. Fines for pasturing offences were by far the most common kind of judicial activities carried out by the courts. In eight courts studied in detail, these fines outnumbered every other legal action. In the 1750s there were three times more farming fines than all civil and criminal cases combined! From 1780 to 1789 the fines approximately equalled the number of civil and criminal disputes (Tables 1 and 2). The seigniorial courts of northern Burgundy worked hard to protect the fields from the premature exercise of pasture rights and from roaming cattle.[30]

The professions of those fined for pasture offences should allow some insight into the social politics of farming, with the social group that most resented communal constraints being over-represented in the fines. The courts of northern Burgundy handed out fines to virtually everyone. In Ampilly-lès-Bordes, a village that in 1752 had 26 hearths, the court handed out 53 fines over the 1750s. Of the 26 families in the tax-rolls, fourteen paid fines. These fourteen families paid 41 of the 53 fines – the remaining twelve fines were either paid by inhabitants of nearby villages, or by members of local families who could not be matched to their households (wives, for example, were not always identified by both their own name and that of their husbands). Jacques Demont, a *laboureur*, was the worst culprit, with seven fines over the decade, but Denis Languereau and his widowed mother (also *laboureurs*) came a close second with six fines. The situation was almost identical in the village of Bagnot. In the 1750s, of the 36 families in the Bagnot tax rolls, 25 paid fines. Claude Trivier, *laboureur*, had to pay fines nine times, almost once a year.[31]

The better off in the village were fined for roaming cattle far more often than the village poor. In both Ampilly-lès-Bordes and Bagnot during the 1750s there was not a single *laboureur* who made it through the decade without being fined. The twelve who did not get fined in Ampilly-lès-Bordes had the following professions: an innkeeper, five *manouvriers*, a mason, a domestic servant, two beggars, a weaver and a hemp-worker. Those fined, by contrast, were

[30] ADCO, B2 605/1, seigniorial justice of Fontaine-en-Duesmois. ADCO, B2 1252/3, seigniorial justice of Ancey.

[31] For the tax records, see ADCO, C6886 and C6887, Ampilly-lès-Bordes tax rolls, 1755, 1785; C7057, Bagnot tax rolls, 1754, 1785.

TABLE 2. Pasture fines in eight seigniorial courts, 1750-9, 1780-9.

	1750-59	*1780-89*
Ampilly	53	107
Ancey	175	138
Bagnot	158	219
St Bénigne prieuré	190	37
Billey	469	569
Foncegrive	434	213
Fontaine	7	148
Lanthes	152	194
TOTAL	1638	1625

13 *laboureurs* (all of them) and a bourgeois. Similarly in Bagnot it was mostly *manouvriers* who escaped fine-less, although here there were also several artisans (a carpenter and a boot-maker) who paid no fines.

There are two reasons for the over-representation of *laboureurs* among those fined for pasturing offences. The first is that only *laboureurs* were allowed to keep any cattle or horses out of the communal herd. Since *manouvriers*, by definition, did not have a team of oxen or horses to work the land (or did not have a plough on which to hook a team of cows), all of their cattle were required to be in the village herd. The other reason for the over-representation of *laboureurs* in these fines is simply that they owned more animals than *manouvriers*. Indeed those who did not get fined by the courts always included the village artisans. In Ampilly the innkeeper, mason, servant, beggars, weaver and hemp-worker almost certainly did not own any animals that could have been caught by the court. The *manouvriers* who paid no fines generally came from the bottom of the village social scale and most likely owned neither cattle nor horses.

Another way to address the issue of the social bases of communal agriculture is to consider those whom seigniorial courts fined for having illegal separate herds of cattle.[32] This was closely related to the simple pasture offences discussed above. Nevertheless, seigniorial courts treated this as a separate matter, fining for 'troupeau séparé' only those who consistently failed to hand their cattle over to the communal herder. In fourteen seigniorial courts during the decades of the 1750s and the 1780s there were about a hundred such cases involving 150 defendants, of whom 77 could be matched to the tax-rolls of the villages.[33] The villagers who failed to submit

[32] See for example, the Grands-Jours of Franxault reproduced in Pierre de Saint-Jacob (ed.), *Documents relatifs à la communauté villageoise en Bourgogne* (Paris, 1962), p. 61.

[33] Generally I recorded all individual entries from the tax rolls of 1752 and 1782. But when this year was missing or illegible I used instead another year (usually 1753 or 1783, but also 1755 and 1785). The tax records employed are as follows: ADCO, C5929, Bellefond; C5978, Epagny; C6033, Messigny; C6077, Saussy; C6078, Savigny-le-Sec; C7057, Bagnot; C5914, Ancey; C5930, Belleneuve; C5993, Foncegrive; C6036, Montot; C6131, Chazilly-le-Haut; C6403, Lanthes, le Meix; C6452, Villerrottin; C6533, Auxey-le-Grand, Auxey-le-Petit, Moulin au Moines; C6590, Meursault; C6887, Ampilly-lès-Bordes; C6961, Fontaine-en-Duesmois; C7228, Aisy, Pont-d'Aisy; C7292, Flée, Allerey; C7375, St. Germain and Senailly.

to this communal institutions could hardly be described as the rural elite. On average those who kept illegal separate herds paid 1.2 times as much royal taxes as the village average in the 1750s and 1.15 times more than average in the 1780s. Those fined for separate herds paid about six-tenths the taxes of *laboureurs*, the rural elite. The better off did not oppose the use of the communal herd in eighteenth-century Burgundy. In fact, as with those fined for pasture offences, these farmers did not form a coherent social or economic group at all, with villagers from across the social spectrum being fined for separate herds. If they did pay a few *livres* more taxes than average, this again was due to cattle owners being generally wealthier than the village mean. Those who consistently refused to put their cows in the charge of the village herd did so not because they belonged to a class of better off farmers who yearned to break free from the constraints of their poorer neighbours but in order to pasture where they wished, possibly because of the poor quality of the care the herders sometimes provided.[34]

IV

Seigniorial courts had to remain vigilant to enforce the rules of pasture. They also had to police common land. Several historians of northern Burgundy have pointed to seigniorial usurpation of common land as a major threat to communities there.[35] When common land originated in a past concession from the lord, that seignior was entitled either to a third of the revenue from the land, or to a third of the land in a once-off division.[36] The practice of *triage*, whereby lords took a third of the land, harmed villages considerably. Unfortunately, the nature of the sources used for this study do not allow for the evaluation of the extent and effect of *triage* and seigniorial usurpation of commons. There are no lawsuits between villages and lords over commons among the cases heard in the seigniorial courts of northern Burgundy. Given the likelihood that the lord's personally appointed judge would find in his favour, the absence of lawsuits in seigniorial courts against lords over commons is only to be expected.[37]

Another documentary source for *triages* are municipal archives, specifically the registers of village assemblies. Usable records of this sort are unfortunately rare in northern Burgundy, and of the 21 villages studied, only two contained references to *triage*. In 1727 the inhabitants of Foncegrive voted unanimously in favour of *triage*, granting the lord ownership of 251 *journaux*

[34] In 1754 René Mercier sued the village herd for money lost to him through the death of a pig committed to the communal herd. Blaise's sheep dogs, René claimed, tried to devour the pig, ultimately chasing it off a cliff. In the end the court sentenced Blaise to pay 21 livres for the value of the pig and three piglets, not yet weaned, which starved to death. ADCO, B2 601/2, seigniorial justice of Flée, sessions 30 July, 5, 12, 19 Dec. 1754, 23, 30 Jan., 13, 20 Feb. 1755.

[35] Most notably, Saint Jacob, *Paysans de la Bourgogne du nord*, pp. 377–379; also Régine Robin, *La société française en 1789: Semur-en-Auxois* (Paris, 1970), p. 153; Hilton L. Root, *Peasants and king in Burgundy. Agrarian foundations of French absolutism* (1987), pp. 162–163, 178; Jean Bart, *La Révolution française en Bourgogne* (Cleremont-Ferrand, 1996), pp. 50–52; Arlette Brosselin, *La forêt bourguignonne, 1660–1789* (Dijon, 1987), pp. 111–114.

[36] This had been decided by the Parlement of Dijon in 10 Dec. 1644. The onus in these cases was on the community, which had to prove that the land had not been conceded by the lord. See ADCO, B 12071/8, Recueil des délibérations secrètes du Parlement de Bourgogne, written by Président Bénigne Bouhier, 1748. See entry, '*triage*'. There is another copy of the same manuscript at Dijon Municipal Library, MS 2292.

[37] These lawsuits would be heard in the royal *bailliage* court or in the Maîtrise des Eaux et Forêts. Jean-Claude Wacquet, *Les grands maîtres des eaux et forêts de France de 1689 à la Révolution* (Geneva, 1978), pp. 278–82.

of land in exchange for his renouncing his right to a third of the revenue from the common forest. But in 1792 when the community discussed dividing its commons, the total area was again 750 *journaux*, suggesting that in the intervening 75 years the community had somehow recovered the land. In 1781 the community of Villerrottin deliberated in a general meeting to request that the lord exercise his right of *triage*, 'that is to say that the said lord ... would take his third on one hand and the inhabitants their two-thirds on the other so as to avoid all difficulties that could arise'. The community hired experts to survey the land and divide it into three parts of equal value. Three years later, though, the lord backed out, effectively ending the attempted *triage*.[38]

The full evaluation of seigniorial usurpation of commons awaits detailed study,[39] but it is clear from parish *cahiers de doléances* (lists of grievances drawn up in 1789 in every parish in France) that people perceived a great deal of unfairness in the exercise of this right. The most common complaint about *triage* was that lords who had taken a third of the village's land continued to claim their share of the revenue from the remaining two-thirds. In Vivry the inhabitants requested that lords who had exercised *triage* no longer be permitted rights of use or pasture in the remaining commons. Similarly in Minot the inhabitants complained that the lord continued to take some of the wood from the communal forest, and this despite the fact that 'there are elders who say that long ago the lord exercised his right of *triage*'.[40]

In her study of southwestern France, Anne Zink analysed conflicts that involved village communities. Of 136 conflicts over common land, 40 per cent (52 disputes) involved the lord. Of the remaining 84, 59 involved outsiders to the village, seven were semi–internal disputes between neighbourhoods of the same village and only 18 were truly internal conflicts.[41] In northern Burgundy, on the other hand, internal conflicts over common land were far more common than were lawsuits that pitted villagers against outsiders. The reason for this difference is not that villages in the south were more peaceable, or that the inhabitants did not try to defraud the system. Local elected village officials in the southwest had the authority to settle this type of internal dispute over common land summarily. They could, for example, order a villager to restore land that he had usurped from the commons. In northern Burgundy, on the other hand, most village political affairs came before the local seigniorial judge, and the elected *syndics* had no authority over the inhabitants.[42]

In northern Burgundy, the myriad of small thefts of land by inhabitants was as important a threat to common land as was seigniorial usurpation. The inhabitants of northern Burgundy devoted much time to usurping land from the commons, in pieces ranging from small to large.[43]

[38] ADCO, E Dépôt 283/24, communal archives of Foncegrive, folder on common land. ADCO, E Dépôt 701/1, communal archives of Villerrottin, register of communal assemblies, assemblies 14 Apr. 1781, 7 Oct. 1783, 25 Mar. 1784.

[39] Jeff Houghtby of Emory University, is currently engaged in such a study.

[40] ADCO, B2 242/1, bailliage of Arnay-le-Duc, cahiers de doléances, cahier of Vivry. ADCO, B2 209 bis, bailliage of Châtillon-sur-Seine, cahiers de doléances, cahier of Minot.

[41] Anne Zink, *Clochers et troupeaux. Les communautés rurales des Landes et du Sud-Ouest avant la Révolution* (Bordeaux, 1997), pp. 85–94.

[42] In the southwest it was primarily local elected officials who policed the system of communal agriculture, a job that in northern Burgundy fell overwhelmingly to the local seigniorial judge and public prosecutor (*procureur d'office*).

[43] For corroboration in another part of France, see A. Achard, *Une ancienne justice seigneuriale en Auvergne. Sugères et ses habitants* (Clermont-Ferrand, 1929), pp. 205–6.

All villages periodically began proceedings to re-take common land sown, fenced or harvested by inhabitants. To investigate the ways village communities worked to protect their common land from encroachers, the various judicial, administrative and local records have been sampled for evidence of disputes over common land. As part of a larger study on seigniorial justice in northern Burgundy, all cases heard during two decades (1750–1759 and 1780–1789) in fourteen local seigniorial courts that sat over twenty-one villages (for which see Map 1) have been extracted. These villages were selected to secure a wide distribution over all the agricultural regions of northern Burgundy. Other records for these two decades were also searched for cases concerning the administration of commons.[44]

Only three of the twenty-one villages did not initiate judicial proceedings to take back common land from one or more inhabitants in these two decadal periods. Two of the three villages without recorded official disputes over commons had very little or no common land. Larrey, one of the dispute-less villages, was a suburb of Dijon and probably had no common pasture or forest.[45] Bellefond, another village without recorded disputes over commons, probably also had no common land.[46] The only village without disputes over commons that did have common land was Bagnot.[47] In all there were 42 disputes, an average of two per village. Since these disputes all occurred during two ten-year periods, on average a village in northern Burgundy had to go to court about once a decade to take common land back from usurpers and encroachers.

Of the nineteen villages with common land, eighteen had to go to court more than once during the 1750s and the 1780s to protect their common forest and pasture. In 1789, for example, the inhabitants of Aisy complained to the judge that, despite a survey done several decades ago, people had recently usurped so much of the commons that the land was hardly wide enough for one cart to pass (that is, all the arable and/or pastoral land had been taken by locals, leaving only the path through the fields). The court ordered the community to appoint experts to investigate the usurpations and authorized it to take back the land in question.[48] Similarly in 1751 at the assizes of Meursault, some complained of usurpations, this time naming the culprits. The court commanded Lazare Jobard and François Feragni to give the land back to the village.[49]

Complaints made by villagers to the judge concerning usurpation of common land which name those that had stolen the land and planted grain or garden crops are exceptional. Most

[44] In addition to the archives of seigniorial courts, I used the records of the royal Intendant (primarily requests from villages for permission to defend or initiate court cases, but also village fiscal accounts that mention commons), and municipal records (not abundant in northern Burgundy, but indispensable where they do exist).

[45] Indeed the seigniorial court of the religious order of St. Bénigne, which had judicial authority over Larrey, had to fight to maintain its jurisdiction in opposition to the municipal court of Dijon, which claimed that Larrey was properly part of the city. See, for example, Dijon Municipal Archives, C31, jurisdictional disputes, legal *mémoire* dated 1715. The judicial officers of the municipal court noted that the inhabitants of Larrey paid taxes as Dijonnais and were exempt from the *octroi* tax imposed on strangers selling wares inside the gates of the city.

[46] There were no fines assessed in Bellefond for illegal pasture on common land or pilfering in communal forest. Since the local seigniorial court here policed the village as carefully as any court, this suggests that there was no common land here.

[47] Village account books list revenue from forests. ADCO, C1454, Intendant, village fiscal accounts, Bagnot, account 12 Jan. 1780, and other years.

[48] ADCO, B2 423/1, seigniorial justice of Aisy, Grands-Jours, 12 May 1789. They did a survey of the common land in 1765. ADCO, E Dépôt 10/33, communal archives of Aisy, bornage des communaux, 19 Sept. 1765.

[49] ADCO, B2 734/1, seigniorial justice of the barony of Meursault, Grands-Jours, 4 Oct. 1751.

often the court simply ordered that all who had taken land from the commons were to plough under their crops and hand the land back to the village. Occasionally, though, communities brought to court individuals who must have refused to submit. Since these cases required the use of the court's authority, pressure from other villagers must have been ineffective in getting the land restored to common. This sample, therefore, overestimates the social standing of the usurpers. Still, the professions and social standing of these villagers challenge the notion that most usurpers were subsistence farmers or the village poor. In 1754, for example, the community of Ampilly-lès-Bordes sued Jean Demont to get back the common land it claimed he had usurped. Demont, though not one of the economic elite of the village, was a *laboureur* (he had his own plough) and paid marginally more taxes than average.[50] François Michel, on the other hand, was one of the village elite of Savigny-le-Sec. Michel, who paid double the average taxes for the village in 1782, was ordered by the court to restore to the village the land he had usurped, enclosed and planted with hay.[51] In 1777 the Dame of Chambolle and Morey wrote to the judge of her seigniorial court. She complained that, although everyone in the village usurped and enclosed land from the commons, the better off got away with it while the poor found themselves in trouble. She suggested that the judge talk with the community to see how best to 'make the community enjoy the use of the ancient lands that now are possessed by the village elite (*coqs du village*)'.[52]

Villagers also pastured their animals on the commons illegally. This could involve sending the cattle onto common pasture in a separate herd, or letting cattle wander into a meadow set aside for hay. These cases were similar to pasture offences on private land, in that the court both assigned a fine to the delinquent, and ordered the payment of damages for the hay eaten and trampled. In the villages of Billey and Villerrottin there was so much of this kind of illegal pasturing on the commons that the inhabitants petitioned the royal Intendant for a reduction in the amount of the fines. In the spring of 1789 they wrote the Intendant, claiming that: 'it would be impossible to recover the fines, since some are insolvent, and others dead or absent'.[53]

Lords and big property owners employed forest guards to protect their woods from the pilfering of villagers. Lords used their courts to impose heavy fines and payments of damages for wood thefts. In 1781 the court of Foncegrive assigned 240 livres of fines and the same amount of civil damages for the theft of three old oak trees from the seigniorial forest.[54] Like lords, village communities too needed continued vigilance to halt theft of wood in their forests. The court of Epagny fined Prudent Michel, *laboureur*, 12 livres and the same amount in damages for theft from the communal forest.[55] If there are fewer examples of court cases of pilfering in communal than seigniorial forests, this is only due to the fact that lords owned more forest.[56]

[50] ADCO, B2 1077/1, seigniorial justice of Ampilly-lès-Bordes, sessions 2 Oct., 30 Dec. 1754, 7 Mar., 2 May 1755, 23 Feb. 1756.

[51] ADCO, B2 1048, seigniorial justice of the religious chapter St Bénigne, village of Savigny-le-Sec, sessions 30 July 1785, 10 Sept. 1785, 26 Oct. 1785, 7 Dec. 1785.

[52] ADCO, 18J 30, private papers, seigniory of Chambolle and Morey, letter from Madame de Clery dame de Chambolle et Morey to M. Ondot, procureur d'office in the same justice, 30 Sept. 1777.

[53] ADCO, C849, Intendant village files, Villerrottin, petition Mar. 1789. See also ADCO, C741, Intendant village files, Billey, for a similar document.

[54] ADCO, B2 604/2, seigniorial justice of Foncegrive, sessions 5, 9 Apr., 21, 24 July, 17 Sept. 1781.

[55] ADCO, B2 1248, seigniorial court of the religious chapter St. Bénigne, justice of Epagny, Grands-Jours, 24 Aug. 1784.

[56] Brosselin, *La forêt bourguignonne*, pp. 100–101.

By the late eighteenth century most communities had appointed a guard who patrolled the communal forest to watch that the trees were allowed to grow enough to be harvested and divided among the villagers. At a village assembly in Fontaine-en-Duesmois, the villagers noted that:

> they have learned that there are committed offences daily in their communal forest, and that [they arise] by the negligence of the said Philipe Renaut, now guard of their community, to do regular patrols like he should according to his appointment. If the inhabitants do not bring order to these abuses, annoying results (*suites fâcheuses*) will follow ...

Wishing to replace him with 'a person of probity to be guard of their forest', they chose one Claude Chouxblanc as their new guard.[57] Villages in northern Burgundy needed to watch carefully over their communal resources. Inhabitants took advantage of the slightest lapse in vigilance to pasture their animals illegally and to steal wood from communal forests. To keep pilfering and illegal use under control, villages needed frequent recourse to the local courts, suing those caught in violation of the rules of communal agriculture for damages.

V

Ordinary people and elites alike understood that villages had to fight continually to maintain their common land. In 1776 and 1779 the provincial Estates of Burgundy petitioned the king on the subject. Villages lost much land, they suggested, because of the lack of written title to common pasture and forest. This meant that villages were generally left to establish ownership through proof of continual use over the past thirty years. 'It is not uncommon to see the inquiry of the inhabitants as plaintiffs and that of the defendant equally conclusive'. When the usurpers were locally important people, 'they act against him slowly, and after thirty years of use, the community would try without success to retake the land'.[58] The Estates suggested that each village name four principal inhabitants who would draw up a declaration of all common land ('forests, bushes, fields, marshes, islands, heaths, good pasture and generally all lands') owned by the village. The municipality, the local seigniorial court and the provincial administration would hold copies of the declaration, which would have force of law. Lawsuits over commons would not have to lead to costly investigations by the court and the calling of multitudes of witnesses to testify of agricultural practice.[59] Although the king turned down their request out of fear that the proposal would lead to innumerable court cases that would bankrupt villages, the request shows that the province's administrators were aware of the continual struggle that villages faced in the upkeep of their commons.

The Cahiers de doléances of 1789 contain many references to the policing of common land. The inhabitants of St. Germain-la-Feuille complained of an expensive court case against an individual over the communal forest. The case had reduced them to 'a state of indigence so

[57] ADCO, B2 606/1, seigniorial justice of Fontaine-en-Duesmois, village assembly, 5 June 1780.

[58] ADCO, C3012, provincial Estates, décret des Etats, Remontrances des conseillers et procureurs syndics, 1781, 'Usages et communaux'.

[59] ADCO, C3332, provincial Estates, cahier des remontrances, 1761–76, 1776, art. 7, 'Usages communaux'. ADCO, C3333, provincial Estates, cahier des remontrances, 1779, art. 9, 'communaux'.

terrible' that many inhabitants had left the village. In Chissey they noted that those elected to fill local offices were poorly informed of their duties. They requested detailed instructions on the duties of these officers, instructions that should be 'capable to stop usurpations and destruction of communal land'. The inhabitants of Thoisy-la-Bergère less specifically requested that those who had usurped common land be made to give it back. The inhabitants of Austrude asked for a survey of the commons, and restitution of all land usurped over the past twenty years.[60] The *cahiers* of northern Burgundy make it clear that conflict characterized the use of commons.

Villagers understood the need for the coercion of a few inhabitants each year to police the fields. Twenty *cahiers* (from a total of 301 in four *bailliages*) comment on the lot of village pasture guards. The most common demand is that *messiers* be paid a decent salary to compensate for their onerous duties. In Bussy-le-Grand the inhabitants commented that:

> it would be appropriate to give payment to the *messiers* for the guard of the countryside. It is unfair, despite the decisions of superior courts, that unfortunates be made responsible for the offences while exercising unpaid office.

The other request that crops up repeatedly in the *cahiers* is that *messiers* be given more authority. Country-dwellers complained that, while seigniorial forest guards were believed on the simple strength of their reports, the unsubstantiated word of a field guard could only lead to a maximum fine of seven sols – that is, for the court to assign more than a seven sol fine the *messiers* would need corroborating witnesses to prove that the animals seized were indeed in the field in question. The authors of the *cahier* of Charencey complained that: 'nasty (*coquin*, the word is written and then crossed out) guards ... are believed up to 500 livres, while two honest *messiers* are only trusted up to seven sols, which requires a remedy'.[61] Most people understood the importance of the policing of agriculture and the need to seize animals pasturing illegally. They wanted to give more strength to the system, by allowing the seizures of guards to bring higher fines, and by ensuring payment to those who policed the fields.

VI

In northern Burgundy communal farming survived without the need to coerce the better-off or to convince the poor that they profited from it. There is no evidence in the court cases that those fined had any ideological opposition to communal agriculture or wanted to inaugurate a private, individual system of land tenure. Peasants realized that the system benefited everyone at least some, and more importantly that in open fields it was the only practical way to protect private property. If farming in open fields with communal rights over private land worked at all in northern Burgundy, it was because the local seigniorial courts, with the help of a few

[60] ADCO, B2 209 bis, bailliage of Châtillon-sur-Seine, cahiers de doléances, cahier of St. Germain-la-Feuille. ADCO, B2 254/1, bailliage of Saulieu, cahiers de doléances, cahier of Chissey. ADCO, B2 254/1, bailliage of Saulieu, cahiers de doléances, cahier of Thoisy-la-Bergère. ADCO, B2 226/1, bailliage of Semur-en-Auxois, cahiers de doléances, cahier of Austrude.

[61] ADCO, B2 209 bis, bailliage of Châtillon-sur-Seine, cahiers de doléances, cahier of Bussy-le-Grand. ADCO, B2 209 bis, bailliage of Châtillon-sur-Seine, cahiers de doléances, cahier of Charencey.

villagers each year, policed the system. The biggest threat to communal agriculture was not enclosure, for as historian Saint-Jacob argued, enclosure of arable land remained rare in eighteenth-century northern Burgundy. Nor was seigniorial usurpation the most significant threat to common field and forest. The system was under continual assault by the cows, horses, sheep and goats of the inhabitants. Communal farming, in fact, did work for the benefit of most inhabitants (some more than others, of course), but this did not stop practically everyone from trying to work the system to his advantage, even if at the expense of a neighbour or the community as a whole.

The Hereford bull: his contribution to New World and domestic beef supplies*

by Joan E. Grundy

Abstract

The most recognisable characteristic of the Hereford breed of cattle is its white face. This prepotent feature confers an advantage where visual evidence of ancestry is needed, and has huge economic importance in the commercial cattle trade, far outside the confines of the pedigree world. Hereford bulls were used extensively to upgrade cattle populations when there was a need for increased and improved meat supplies. In the late nineteenth century, when unimproved range cattle were upgraded to useful beef animals, the Hereford was more successful internationally than at home. In mid-twentieth century Britain the breed dominated the commercial beef trade, due to demand for beef from dairy-bred calves. The paper offers insights into the interaction between the pedigree and commercial sectors of the livestock industry in the improvement of national cattle stocks.

The Hereford bull has had a major role in ensuring the beef supply of the world's first industrialized country since the nineteenth century, firstly when the White-face upgraded the range cattle of the world's temperate grasslands, replacing indigenous and mongrel cattle with its own trademarked progeny and then secondly, in the last half-century when an increasing proportion of our beef has been supplied by British farms. In both of these periods the Hereford's role as a crossing bull has been of crucial importance in maintaining New World and domestic beef supplies.

In livestock markets all over the country are found the cattle from which most stock farmers make a living, and which finish up on the nation's dinner plates as rump steak, stewing beef and ox tongue. The regular day-to-day trade in commercial cattle does not make the dramatic headlines of the elite pedigree world, yet these workaday cattle have been estimated to comprise around 98 per cent of the national herd.[1] Commercial cattle are by no means a random collection of different breeds and cross-breeds: many are well-bred but unregistered; some owe allegiance to a particular breed type; others are the outcome of planned cross-breeding programmes. They are the products of commercial decisions made by individual farmers who are all working in the same business environment, aiming to produce what the consumer, through the meat trade, demands. It is in this context that the Hereford bull has proved himself.

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[1] Calculated for England and Wales, Dec. 1919, Ministry of Agriculture and Fisheries, *Census of pedigree livestock* (1921), p. 12. See also n. 44 for a US estimate.

Developed as draught oxen, Herefords are alert, active and well muscled. They are adaptable and efficient grazing cattle, hardy enough to convert forage to beef under a wide range of climatic conditions. The Hereford is the ideal farmers' beast, not needing extravagant labour-intensive housing, expensive oilcakes or costly veterinary attention. But, in addition to these essential assets, the key to the breed's sustained popularity is its distinctive trademark, its white face; positive evidence that a Hereford bull has been at work. It is a characteristic so prepotent that every Hereford bull passes it to each and every one of his calves, regardless of the dam's coat colour or pattern. This trait, 'colour marking', has considerable economic value in the commercial cattle trade, where visual evidence of ancestry is vital (Figure 1).

Although early agricultural writers knew of the prepotency of the 'white face',[2] crossing bulls were not important to nineteenth-century cattlemen. The national breeds – at first Bakewell's Longhorns, which were steadily ousted by the improved Shorthorns of Booth, Bates and the Collings – were dual purpose, producing both milk and meat. By the early 1860s, two-thirds of Smithfield cattle were Shorthorns or Shorthorn crosses.[3]

The Hereford was one of several highly localized breeds and types. Sixty-one per cent of the bulls named in the first Hereford herd book of 1846 were bred in Herefordshire; 90 per cent in the three adjoining counties of Herefordshire, Shropshire and Worcestershire.[4] There was little trade in breeding stock outside areas local to the breed, but the Hereford was especially valued by graziers. Both store and draught beasts travelled the midlands and south of England, making their way towards Smithfield.

Founder breeders had no need to consider the merits of crossing bulls; their objectives were to produce muscular plough oxen and quality beef animals. They developed the breed by selecting market cattle which most closely matched their ideal, mating them to bulls of their own shrewd breeding, then selecting the best heifer calves to mother the next generation. The early Hereford breeders believed that a good animal was never a bad colour. Mottled faces, black noses, and light roans were all seen in the foundation herds of the breed. Pioneer breeders such as Benjamin Tomkins of King's Pyon would never reject a good animal because of its colouring. Two of his foundation cows were a mottle-face and a 'grey' (light roan), and in 1848 the Hereford Agricultural Society instructed judges not to discriminate on the grounds of face or body colour.[5] The first volume *The Herd Book of Hereford Cattle* includes plates of the four colours 'usually seen among Hereford cattle'. Fifty-seven per cent of bulls were white-faced, but a *mottle-faced* with a dark crest (31 per cent) appears on the frontispiece; others are grey and light grey.[6]

By the mid-1830s the merits of the Hereford as a crossing bull for improving later-maturing

[2] For example, at Petworth, Sussex, Lord Egremont found that Hereford × Sussex and Hereford × Devon calves 'uniformly had white faces and bellies'. Rev. Arthur Young, *General view of the agriculture of the county of Sussex* (1813), pp. 231, 264.

[3] E. L. Jones, 'Hereford cattle and Ryeland sheep: economic aspects of breed changes, 1780–1870', *Trans. Woolhope Club* 38 (1964), p. 40 (repr. in id., *Agriculture and the Industrial Revolution* [1974]).

[4] T. C. Eyton, *Herd Book of Hereford Cattle* 1 (1846). The calculation is based on the 540 bulls bred by 90 breeders whose locations were identified. Volume 1 lists bulls only, calved between *c.* 1797 and 1846.

[5] James Macdonald and James Sinclair, *History of Hereford cattle* (rev. edn, 1909), pp. 50, 137. (The 1909 edition was a revision by James Sinclair of an earlier edition of 1886.)

[6] Eyton, *Herd Book*, 1. Colour was specified for 62% of the total of 555 entries.

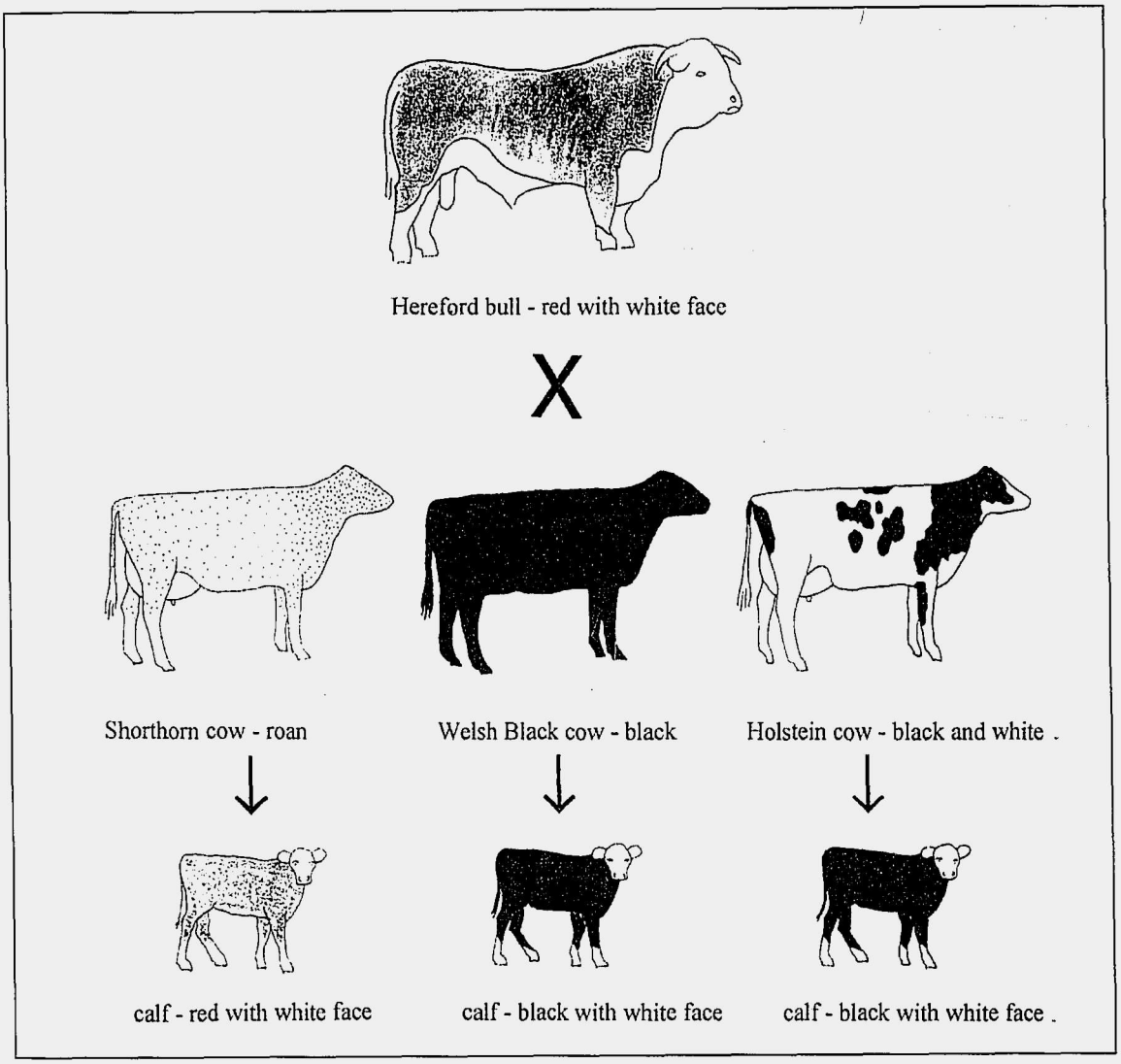


FIGURE 1. How a Hereford bull colour-marks his calves.

and less-meaty breeds were becoming appreciated, and the 'white face' recognized as the badge of the Hereford sire. An early printed reference, in 1834, describes the cattle which Radnorshire farmers had successfully improved. The Hereford cross produced a beast usually 'red or brindled, and the true white face of the Hereford marks the source whence the improvement in the stock was derived'.[7]

Over the following thirty years a definite preference for 'white-faces' became established among bull buyers and hence among bull breeders, indeed, in 1863 it was said that 'the all but universal appearance of the red-with-white-face Hereford is such, that when any animals of the

[7] William Youatt, *Cattle: their breeds, management and diseases* (1834), p. 58; also p. 30 on Devon: 'red with a white face which marks the Hereford cross'.

other classes are exhibited, the purity of their blood is questioned by those who are not cognizant of these facts'.[8] Although the ability of Hereford bulls to colour-mark their calves was recognized in the early decades of the nineteenth century, its potential as a marketable feature could not be exploited in the context of the cattle and meat trades of mid-nineteenth-century Britain. The right conditions for exploitation of this trait were created when strong demand from a growing industrial population for regular beef supplies coincided with the spread of speedy and reliable steam transport. The present paper shows how the colour-marking white face boosted the national beef supply, firstly in the late nineteenth century from North America's Great Plains, and secondly in the mid-twentieth century from the UK dairy herd.

I

North America, the first major destination of British pedigree cattle exports, set the pattern of upgrading nondescript cattle with high performance European breeds, mainly British. By the 1860s Hereford cattle, along with other breeds, had found their way overseas in considerable numbers, but their real opportunities emerged with the settlement of the Great Plains. The period is well documented, partly due to the romance of the 2000-mile trail-drives of the cowboy era, immortalized by a legacy of Western films.

After the end of the American Civil War in 1865, railways pushed westwards across the prairies – the Union Pacific reached Abilene in 1867, the Canadian Pacific reached Calgary in 1883 – dissecting the buffalo ranges of the Great Plains.[9] Greater accessibility ensured the virtual extermination of the buffalo and the subjugation of native Americans by the late 1870s in the south and, up to a decade later, on the northern plains. To European eyes the land was now empty, and to stockmen the potential was obvious. The natural grasslands of the prairie would keep cattle the year-round just as they had kept the buffalo.

The governments of both the United States and Canada were keen to settle the West, and large enterprises quickly made use of the opportunities this provided. In the United States, the Homestead Act of 1862 allowed settlers to purchase after six months of residence, subsequent sales leading to aggregations into large holdings.[10] In Alberta, Canada, in 1881 individuals or corporations could apply for twenty-one-year leases of up to 100,000 acres at a cost of one cent per acre, to be stocked within three years at a density of one beast per 10 acres.[11] Canadian leases encouraged speedy stocking but, on all unfenced prairie, it was vital to lay claim to one's range by crowding out trespassing cattle. Investors from Europe and America moved in to furnish the capital, and cattle companies flourished.[12] For instance in 1882 the *Hereford Journal* featured a prospectus for the United States Cattle Ranche Company which proposed to purchase eight ranches in Colorado. £250,000 in £5 shares was needed to acquire ranging

[8] T. Duckham, *A lecture on the history, progress and comparative merits of the Hereford breed of cattle, read by him before the members of the Royal Agricultural College at Cirencester, Dec. 4 1863* (1863), p. 12.

[9] The term 'buffalo' (strictly bison) follows Frank Gilbert Roe, *The North American buffalo: a critical study of the species in its wild state* (1972), p. 3.

[10] Laurence A. Stoddart and Arthur D. Smith, *Range management* (New York, 1955), p. 10.

[11] Chester Martin (ed. Lewis H. Thomas), *'Dominion Lands' Policy*, (Toronto, 1973), p. 179; also Shelagh Jameson, *Ranches, cowboys and characters: birth of Alberta's Western heritage* (Calgary, 1987).

[12] Ernest Staples Osgood, *The day of the cattleman* (Chicago, 1929, repr. 1957), pp. 94–97.

and grazing rights over 700,000 acres. The ranges were already stocked with 11,000 'well-graded Colorado cattle', that is, improved by the use of pedigree bulls from Great Britain, or by British strains. One hundred and fifty well-bred Hereford and Shorthorn bulls were also on the ranches.[13] A report of 1886 on eleven UK-financed cattle companies recorded the Cattle Ranche Company as leasing 153,607 acres on which were 13,500 cattle, the total capital being £105,600. The Prairie Cattle Company owned or leased 189,140 acres, with a herd of 124,212 head, and capital of £585,822.[14] One of the directors of the Dominion Cattle Company Ltd. (which wished to raise capital of $800,000) was A. R. Boughton Knight Esq. of Downton Castle, Leintwardine (Herefordshire), a leading breeder of Hereford cattle. The president of the company, the Hon. M. H. Cochrane, kept Aberdeen-Angus, Hereford and Shorthorn cattle on his farms in Quebec and in 1881 leased 100,000 acres in Alberta. Company meetings were held in Montreal, but in 1884 an office was opened in Leintwardine.[15]

The combination of cheap land and overseas finance stocked the ranges at a phenomenal rate. In the United States, cattle numbers (excluding milk cows) in eleven western states had risen from 1.8 million in 1867 to 7.3 million by 1900.[16] On the Canadian ranchlands of southern Alberta, imports of cattle rose from 1352 head in 1880 to 16,282 in 1882; by 1886 estimates suggest there were 90,000 to 104,000 cattle in the 'grazing portion of the North-West'.[17] These cattle were largely drawn from Texas, which, with over three million cattle in 1870, was the great cattle reservoir.[18] Herds were trailed thousands of miles northwards to Colorado, Montana, and over the border into Canada. So great was the demand, a hotch-potch of stockers (store cattle), especially yearling and two-year-old breeding stock, was also moved west by rail from the old eastern states.

There were no indigenous cattle in the Americas, but by the mid-nineteenth century a 'collection' of cattle had become established. Settlers had shipped cattle to the New World for use as draught animals; as dairy cows for milk on the voyage; and as foundation stock for new herds in a new land. Animals of uncertain or mixed ancestry were widespread, and these found their way onto the plains, for pure-bred stock were too valuable to risk on the open range. The first cattle in the new territories, described in 1878, were of two main types. Texan cattle were of Spanish descent, with 'long, spreading, half-turned-back horns; long legs; thin, lanky body; big, ill-put-together bones, throwing the body high at the hooks and low on the rump and loins; ... generally yellow, red, roan, dun and black, with very often an iron-coloured stripe along the back'. The common cattle of Kansas, Colorado, Nebraska and the territories, descended from those introduced from several European homelands, were 'big-boned, too sharp along the back, too flat in the rib, and display too much muscle and far too little quality and evenness of flesh'.[19] Pioneer farmers in the New World saw Europe, especially Britain, as their market for

[13] *Hereford J.*, 2 Dec. 1882, p. 8.

[14] 'American cattle companies in 1885', *The Economist*, 20 Mar. 1886, p. 365.

[15] Hereford Record Office, A 74/504.

[16] The eleven states were Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. Stoddart and Smith, *Range management*, pp. 3, 17.

[17] Simon M. Evans, 'Stocking the Canadian Range', *Alberta History* 26 (1978), pp. 1–8. The prairie provinces of Alberta and Saskatchewan were carved from the Northwest Territories in 1905.

[18] Joseph G. McCoy (ed. Ralph P. Beiber), *Historic sketches of the cattle trade of the West and Southwest* (Kansas City, 1874, repr. 1966), p. 80.

[19] James Macdonald, *Food from the far west* (1878), pp. 30, 272.

the produce of the newly-settled land. Speedy and reliable steam transport, coupled with refrigeration, made it feasible to ship across the globe bacon and ham, cheese, butter and eggs – and also live cattle and fresh meat – all products which were more perishable than grain and wool. In 1884, the Wyoming Stock Growers' Association explored the possibility of exporting both 'beeves' and lighter cattle, via Montreal, 'to the very highest market, viz.: Great Britain'.[20]

The export from the United States to Great Britain of chilled meat, which began in the winter of 1875–6, was immediately seen as a threat to the UK producer. In 1877 the *Scotsman* despatched an agricultural journalist, James Macdonald, to North America for four months with the express purpose of reporting on the cattle industry and the meat trade. He assessed the cattle of the plains with a stockman's eye and his reports to the *Scotsman* were later re-published as *Food from the far west.*[21] (Although he favoured the Beef Shorthorn, James Macdonald was later to become co-author of the *History of Hereford cattle* and *History of Aberdeen-Angus cattle.*[22])

Central to the expansion of the Hereford influence was Macdonald's recommendation to improve Spanish and common cattle. 'The beef of Texans, Cherokees, and the "common" American cattle ... will never meet a steady demand in Britain, or realize such prices as will remunerate its exporter – at least so long as it remains the quality it now is ... Texas beef ... is teasingly tough ...'. However, he considered that the beefing qualities of American cattle would be vastly improved over the next eight to ten years.[23] This would need the services of a vast number of well-bred bulls. Astute cattlemen, in both Britain and North America, began to promote their favoured breeds.

Both pedigree Shorthorns and Herefords had been introduced into North America in the second decade of the nineteenth century, and Aberdeen-Angus in the 1860s.[24] The Shorthorn, whose high-caste bloodlines were fashionable on both sides of the Atlantic, made the earliest headway with rapid expansion in the eastern states between 1866 and 1878.[25] But high priced, highly bred and highly fed favourites were unsuited to 'the iron environment of the open range', being too apt to hang around the homestead waiting for feeding time. Where improved Shorthorn bulls had been used, their progeny were leggy, and the bulls suffered in the Texan climate. There was urgent need for 'vigorous and impressive bulls that could stand grief and be depended upon to leave behind a progeny well adapted to the business of converting the wild grasses of the range into marketable beef ...'.[26] On the plains, cattle were

> compelled to rustle for a living, not wholly when the air is soft and balmy and the grass green and abundant, but when it is dry and hard and even covered with snow for days and perhaps weeks at a time, the thermometer indicating 20 degrees or more below zero, driven before pitiless winds or forced to seek shelter beneath the rugged banks of hollows and ravines, with

[20] Osgood, *Cattleman*, p. 109.

[21] James A. Scott Watson and May Elliot Hobbs, *Great Farmers* (1951), p. 283.

[22] James Macdonald and James Sinclair, *History of Hereford cattle* (1886, rev. edn 1909); id., *History of Aberdeen-Angus cattle* (1910). Macdonald became Secretary of Royal Highland and Agricultural Society and his *Food from the far west* was studied in North America as well as in Britain.

[23] Macdonald, *Food from the far west*, pp. 47, 265, 293.

[24] James R. Barclay and Alexander Keith, *The Aberdeen-Angus breed: a history* (1958), p. 589; Macdonald and Sinclair, *History of Hereford cattle* (1909 edn), p. 295; James Sinclair, *History of Shorthorn cattle* (1907), p. 583.

[25] Sinclair, *Shorthorn*, pp. 607–11. See also J. R. Walton, 'Pedigree and productivity in the British and North American cattle kingdoms before 1930', *J. Historical Geography* 25, (1999), pp. 445–7.

[26] Alvin H. Sanders, *The story of the Herefords* (Chicago, 1914), pp. 417–8.

> only snow for a bed and an angry sky for a cover. These are the conditions through which all range cattle are compelled to pass or perish ... [Ranchers] ... have generally adopted Herefords on account of their hardihood, activity, and self-reliance ... coupled with their aptitude to fatten on grass without other feed, and their wonderful impressiveness as sires, will always make the white-faces more popular than any other breed with our ranchmen.[27]

The most important promoter of the Hereford breed in the West was T. L. Miller. In 1872, while still running a fire and life insurance business in Chicago, he founded his Hereford herd at Beecher, Illinois. Miller purchased foundation stock in Ohio and in Ontario, Canada: in 1880 he travelled to England to purchase animals direct from the principal Hereford breeders. Miller quickly recognized both the opportunities on the Great Plains and the potential of the breed to take advantage of them.[28] His almost single-handed efforts launched Hereford cattle in the West. In 1874–5 he began to send pure-bred bulls by rail from his farm in Illinois to Denver, Colorado, and in 1876 to Las Animas on the Arkansas river; these bulls were bought by cattlemen from as far away as Wyoming and New Mexico.[29] The prepotent white face ensured that the first cross of the Hereford bull on range cows colour-marked the calves, providing immediate evidence of improvement and an instant impression of uniformity. C. M. O'Donel, manager of the Bell Ranch in New Mexico, noted that 'the popularity of the Hereford on the range is due undoubtedly to his conspicuous, uniform and attractive coloring which proclaims the blood even to the most inexperienced'.[30] This was a vital asset – Shorthorn crosses appeared in motley colours – yellow, red, black and brindle.[31]

As James Macdonald observed, the open, unfenced ranges made it impossible for a rancher to be certain that 'his own sires only shall mingle with his own cows'.[32] This restricted the use of pure-bred bulls, and economical fencing of range grazings had to await the coming of cheap barbed wire in the late 1870s.[33] In any case, the sheer number of improved bulls required to service the millions of 'narrow-chined, bad-backed'[34] plains cows posed problems of supply. Obtaining and multiplying pedigree animals quickly was a major obstacle. But even as little as a quarter-grade Hereford bull would produce white-faced progeny and therefore pure-bred bulls were not essential for the first stages of improvement. The early demand from the range was for grade (part-bred) bulls.[35] Farmers and stockbreeders in the Mid-West began the business of crossing pure-bred Hereford bulls with common and Shorthorn cows in order to rear grade bulls for the range. This, of course, also stimulated demand for pure-bred Hereford bulls.

Anecdotal evidence gives some idea of the size of the trade. In the mid-1880s T. L. Miller sold, to one cattle company in one season, 40 head of thoroughbred Herefords and 150 head of high-grades.[36] It was reported that, between 1882 and 1890, another cattleman, O. H. Nelson,

[27] Colorado rancher W. E. Campbell, quoted in T. L. Miller, *History of Hereford cattle* (Chillicothe, Mo, 1902), p. 523.

[28] Sanders, *Herefords*, pp. 348, 358, 433.

[29] Miller, *Hereford*, pp. 229, 322.

[30] Sanders, *Herefords*, p. 793.

[31] Miller, *Hereford*, p. 488.

[32] Macdonald, *Food from the far west*, p. 269.

[33] Osgood, *Cattleman*, p. 191; Walter Prescott Webb, *The Great Plains* (Boston, 1931), p. 309.

[34] United States Consular Reports, *Cattle and Dairy Farming* (Washington, 1887), p. 172.

[35] *Ibid.*, p. 113. The progeny of a Hereford bull and a common cow (or one of any other breed) is termed a 'half-grade', referring to the proportion of Hereford blood. A half-grade crossed with a purebred Hereford produces a three-quarter-grade; a half-grade Hereford × any other breed or cross produces a quarter-grade Hereford.

[36] Macdonald and Sinclair, *History of Hereford Cattle* (1886 edn), p. 311.

placed over 10,000 high-grade Hereford bulls on the ranges of the Texas panhandle.[37] Indeed, so severe was the scarcity of Hereford bulls that nearly all males were kept for use as sires, leading to a shortage of grade Hereford steers for the 1882 Chicago Fatstock Show: '. . . there has been such a demand for grade Hereford bulls to go west and south ... scarcely any [steers] can be got ...'.[38]

There is only anecdotal evidence of numbers of Hereford cattle exported to the United States during the crucial years 1880–86. The *Hereford Journal* reported news of the latest shipments in a regular column, 'Hereford Notes', usually gleaned from *Bell's Weekly Messenger*, which in 1884 estimated that during the previous five years 3900 to 4000 head of Herefords were exported to the United States, but no more than 200 head prior to 1880.[39] The early 1880s became known as the 'Yankee Boom' in Herefordshire as American buyers and their agents trawled the top breeding farms and bid recklessly at sales.[40] Earlier writers have recorded the excitement at celebrated sales where American buyers were prominent.[41] Almost the whole Stretton Court herd of 95 head was purchased in 1882 by A. H. Swan of Cheyenne, who became president of the Wyoming Hereford Association when it was founded the following year.[42]

Disparate data, of varying reliability, allow some assessment of the distribution of pedigree Hereford cattle, their extending influence, and their relative importance compared with other breeds in the period *c.* 1880 to 1920. Table 1 and Figure 2 show how the breed invaded the Great Plains after 1886. Figures 3 and 4, both based on the 1920 United States Census of Pedigree Cattle, shows the dominence the Hereford had achieved within a period of forty years. Figure 3 shows the importance of the mid-west as a source of well-bred Herefords; Figure 4 demonstrates the breed's complete dominance in the west and southwest. The latter point was emphasized in a report the *Hereford Times* carried on the census. The newspaper pointed out that, although total numbers of the main British beef breeds were, respectively, Shorthorn, 416,000; Hereford, 405,582; Aberdeen-Angus, 108,512, in the ranching state of Texas, where climatic conditions were severe, water scarce and grass poor, there were 70,000 Herefords, 4,000 Shorthorns and 2,000 Aberdeen-Angus, 'proof indeed of the superiority of the Hereford as a ranching breed'.[43] However, Table 1 and Figures 3 and 4 all underestimate the influence of pedigree Herefords on commercial cattle stocks in the West, as all data refer to animals registered in the American herd book. As only 3 per cent of beef cattle in 1920 were registered purebreds, hundreds of thousands of high-grade Herefords and their crosses are not acknowledged.[44]

So swift was the success of the Hereford that, by 1883, grade Hereford steers, unknown there

[37] J. Evetts Haley, *The XIT ranch of Texas and the early days of the Llano Estacado* (Chicago, 1929), p. 187.

[38] Miller, *Hereford*, p. 248.

[39] Sanders, *Herefords*, pp. 517–9. But see p. 87 below for restrictions imposed by American breeders on imported Herefords from 1883.

[40] The effects of the 'Yankee Boom' years in Herefordshire are the subject of a further study.

[41] Hereford Herd Book Society, *Hereford Breed Annual and Breeders' Guide 1923* (1923), pp. 7–12; id., *Hereford Breed Annual and Breeders' Guide 1924* (1924), p. 19; Macdonald and Sinclair, *History of Hereford cattle* (1909 edn); Miller, *Hereford*, p. 430. E. Heath-Agnew, *A history of Hereford cattle and their breeders* (1983).

[42] Osgood, *Cattleman*, p. 138; Macdonald and Sinclair, *Hereford* (1886 edn), p. 240.

[43] *Hereford Times*, 15 Oct. 1921. A distribution map from this newspaper report, 'States where Herefords predominate', is reproduced in Robert Wallace and J. A. Scott Watson, *Farm livestock of Great Britain* (1923), p. 112.

[44] The United States census of 1890 estimated that fewer than 1% of all cattle were pedigree. Walton, 'Pedigree and productivity', p. 457.

TABLE 1. Distribution of Hereford cattle in the USA, late nineteenth century to 1920.

	Eastern states (%)	*States west of Mississippi river* (%)	*Total number*
Cattle imported 1848-86	57.3	42.7	3703
Registered cattle alive in 1914[a]	19.3	79.1	118,130
Registered cattle in 1920	6.7	84.3	369,111

Note: [a] based on an estimated 120,000 registered cattle living in 1914: the table excludes states with fewer than 250 head.

Sources: 1848-86 and 1914: Alvin H. Sanders, *The story of the Herefords* (1914), pp. 518, 1043. Sanders estimates no more than 200 prior to 1880; 1920: United States Department of Agriculture, *Yearbook 1921* (1922), p. 239. Data give the location of 91 per cent of the total of 405,482 registered Herefords at 1 January 1920.

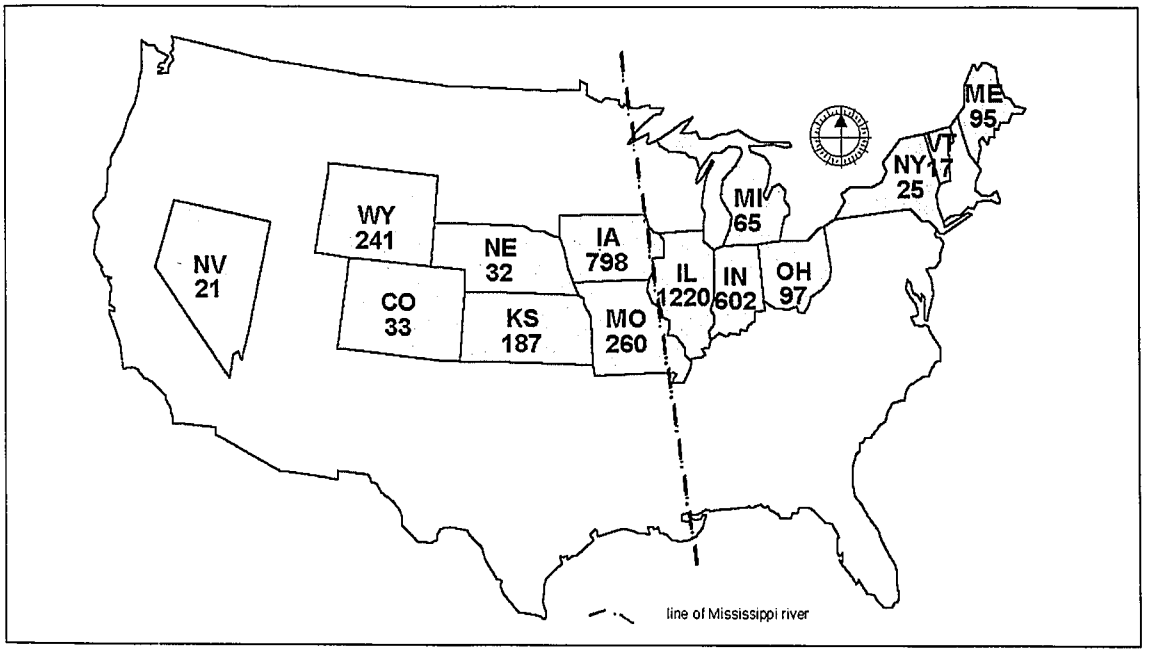


FIGURE 2. Destinations of 3703 Hereford cattle imported into the USA, 1848–86.

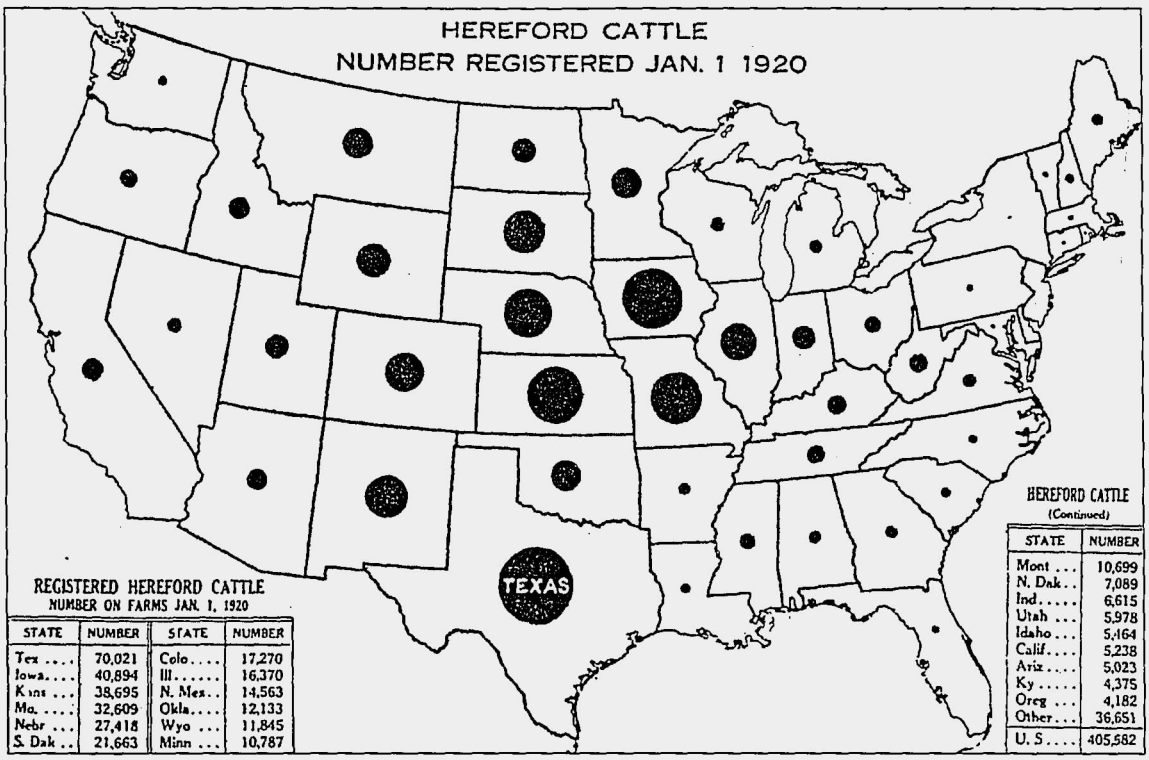
Source: as Table 1

five years earlier, were making top prices in the stockyards of Chicago, St. Louis and Kansas City.[45] By 1911–12 the noticeably longhorned range animal was rarely seen in the Chicago stockyards.[46] In 1923, two of the livestock industry's most knowledgeable commentators wrote that, as a result of Hereford influence, especially in the West, 'the beef industry of the United States was revolutionized'. The acceptable beef animal changed from the four- or five-year-old 2000 lb. ox to the fifteen- to eighteen-month-old superior quality steer.[47]

[45] Miller, *Hereford*, p. 318.

[46] *ICS Reference Library*, no. 242, section 49 (Scranton, Pa, 1913), p. 49. For data on the increased liveweight and higher value of upgraded beef cattle in Colorado, Wyoming and Illinois, see Walton, 'Pedigree and productivity', p. 457.

[47] Wallace and Watson, *Livestock*, p. 112.



STATE	NUMBER	STATE	NUMBER
Tex	70,021	Colo....	17,270
Iowa....	40,894	Ill.....	16,370
Kans ...	38,695	N. Mex..	14,563
Mo.	32,609	Okla....	12,133
Nebr ...	27,418	Wyo ...	11,845
S. Dak ..	21,663	Minn ...	10,787

STATE	NUMBER
Mont ...	10,699
N. Dak..	7,089
Ind.....	6,615
Utah ...	5,978
Idaho ...	5,464
Calif....	5,238
Ariz....	5,023
Ky.....	4,375
Oreg ...	4,182
Other...	36,651
U. S....	405,582

FIGURE 3. Distribution of registered Hereford cattle in the USA, 1920.

Source: as Table 1.

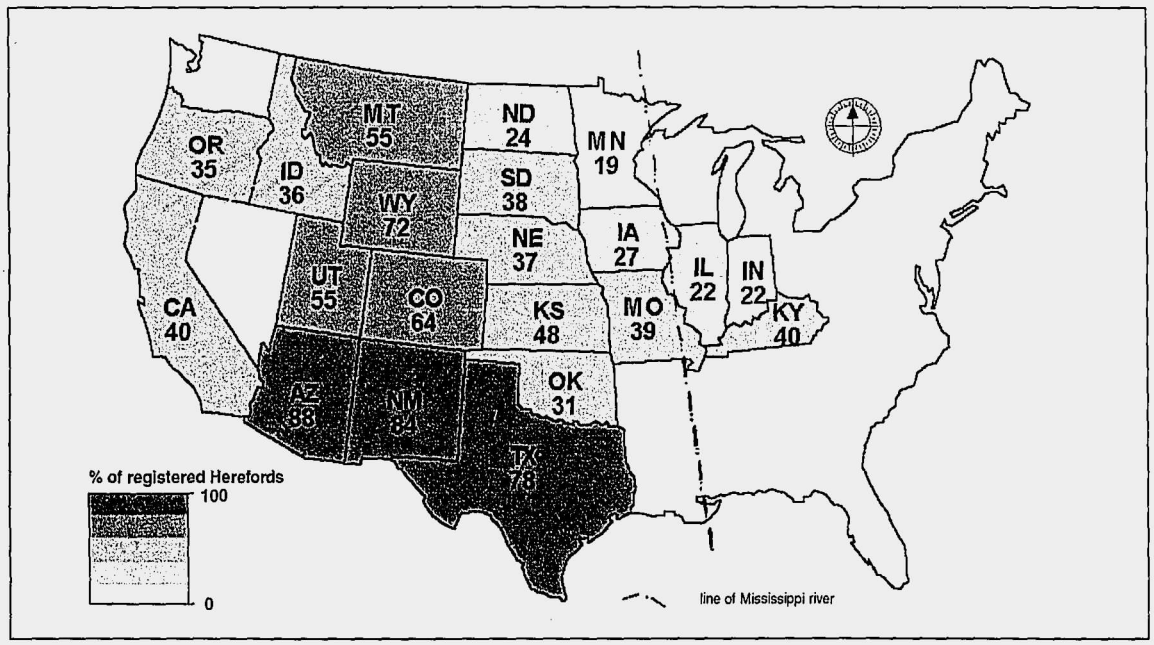


FIGURE 4. Hereford cattle as percentage of all registered beef cattle in the USA, 1920. In Rocky Mountain semi-arid states the Hereford is clearly dominant.

Source: as Table 1.

TABLE 2. Sources of beef imports, 1877 to 1924

Source	*1877* (%)	*1886* (%)	*1910* (%)	*1924* (%)
Europe	52.4	20.9	6.2	4.1
North America	47.6	79.1	24.8	1.6
South America			57.3	90.4
Australasia and South Africa			11.6	3.8
Total '000 tons	84	139	176	220

Notes: Figures for 1877 and 1886 are for live cattle and beef imports into the UK. Figures for 1910 and 1924 are for beef and veal sold through Smithfield Market. Total beef and veal imports into Great Britain and Ireland were (in '000 tons): 1910: 426; 1924: 640.

Sources: 1877 and 1886: P. G. Craigie, 'Twenty years' changes in our foreign meat supplies', *JRASE*, sec. ser., 23 (1887), pp. 465–500; 1910: Loudon M. Douglas. 'The meat industry in its relation to agriculture in the United Kingdom', ibid., 71 (1910), p. 137; 1924: Ministry of Agriculture and Fisheries, *The trade in refrigerated beef, mutton and lamb* (Economic Series No. 6, 1925), pp. 58, 61.

Many of the cattle thronging the Kansas City and Chicago stockyards were destined for Great Britain. Both the threat to the British livestock industry, identified by *The Scotsman* in 1877, and the prediction by James Macdonald of improvement in eight to ten years, had become realities. In 1877 North American supplies of live cattle and beef were almost equal (by weight) to European supplies; nine years later they were four times greater (Table 2).

The Hereford's success on the Great Plains was founded on qualities which were valued in the Welsh Marches. It was an early-maturing animal, and an economical converter of grass to quality beef. Its ability to forage in the most hostile of environments, outwintering in the foothills of the Rockies and thriving in the arid deserts of New Mexico, soon became known in other grazing regions of the world. Its reputation for easy calving commended the breed to graziers and ranchers whose herds had to thrive without close supervision, yet be sufficiently docile to handle when necessary. From late in the nineteenth century reliable records survive of the numbers of registered Hereford cattle exported from Great Britain, and of their destinations. In the decade ending 1900–01, although North America was still taking 51 per cent of these exports, there was now strong demand from South America which accounted for a further 40 per cent. Three decades later (ending 1930–1), 62 per cent of exported registered Herefords went to South America, while North American demand had almost dwindled away.[48] The reorientation of the export trade was paralleled in the origins of imported meat supplies, now vital in feeding a growing industrial population. From the last quarter of the nineteenth century improved cattle began returning to the UK, both as carcases and as live store and fat cattle. At first a high proportion was sourced from North America, but after 1900 South American supplies predominated (as may be seen in Table 2).[49]

By the 1930s, the Hereford could legitimately claim to be 'The Universal Beef Breed' (Figure 5,

[48] Hereford Cattle Society Offices, Hereford, Exportation Certificate Book.

[49] Between 1841–50 and 1900–4, meat imports increased from nil to 41 per cent of total supplies. Richard Perren, *The meat trade in Britain, 1840–1914* (1978), pp. 3, 124, 208.

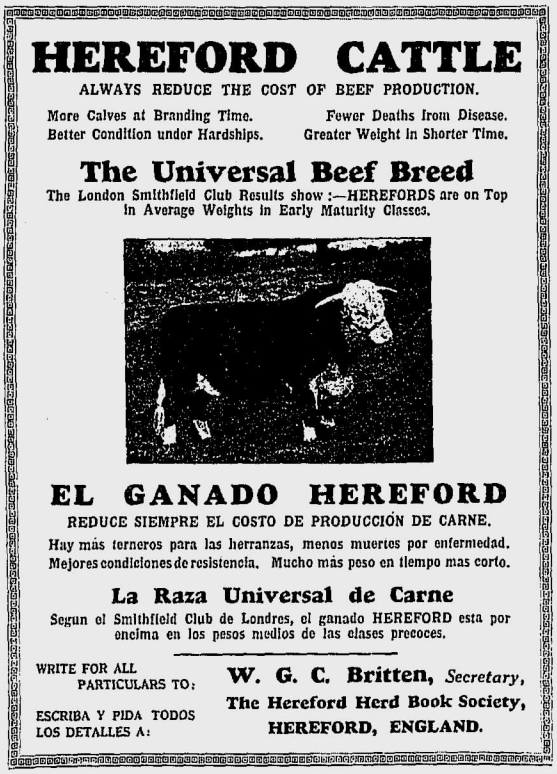


FIGURE 5. An example of Hereford breed society publicity, 1930.

Source: R. de Toll, *International Directory of Pedigree Stockbreeders (1930–31)*.

which also shows the growing interest in Spanish-speaking markets), graphically illustrated by the sign above the entrance of the Hereford Cattle Society offices – the sculptured figure of a Hereford bull dominating the globe. At the end of the twentieth century, it could be said that the Hereford was 'probably the most numerous and widely distributed beef breed in the world' and had contributed to the genetic make-up of at least two dozen breeds worldwide. Twenty-five countries had their own Hereford herd books, with over 30 million cattle registered.[50]

II

Despite success in pastoral countries worldwide, the Hereford remained extremely localized in its native land. The 1908 census of breed type of all cattle (not just pure-bred) in Great Britain demonstrated the overwhelming numerical superiority of the dual-purpose Shorthorn. Cattle of Shorthorn type were 64 per cent of the total herd of 4.5 million beasts; Hereford types amounted to only 6 per cent.[51] The 1919 *Census of Pedigree Livestock* revealed that the Hereford was one of the most localized breeds. Although there were nearly 12,000 pedigree Herefords in England and Wales, only nine English counties had more than 50. Seventy-one percent of

[50] Valerie Porter, *Cattle: a handbook to the breeds of the world* (1991), pp. 62–4; Hereford Cattle Society, breed publicity, 1996.

[51] Board of Agriculture and Fisheries, *The agricultural output of Great Britain* [Cd 6277] (1912).

pedigree Herefords were still to be found within the three counties of Herefordshire, Shropshire and Worcestershire (81 per cent if Breconshire is included). In contrast, out of a total of 36,000 pedigree Shorthorns, only Devon had fewer than 50.[52] Whilst it is remarkable that a breed which had colonized every continent of the globe had such restricted distribution in its native country, this was to change dramatically in the next half-century. As the pastoral countries of the New World (the destinations of British pedigree beef bulls) were becoming more industrialized, the imported beef on which we had formerly relied was increasingly being consumed in the countries of origin. In 1938, for example, 27 per cent of the meat produced in Argentina was exported; in 1954 this had dropped to 8 per cent.[53] Post-war government policy was in any case directed towards achieving greater self-sufficiency in temperate foods.

Wartime emphasis on milk production had accelerated a growing trend towards pure dairy breeds, and milk production continued to be profitable after World War II. The quest for higher milk yields led to specialized dairy breeds, particularly the British Friesian, ousting the dual-purpose Shorthorn (Table 3). The change to bony, angular dairy breeds meant that the living by-products of milk production – the bull calves, surplus heifers and cull cows – were less suitable for beef production than had been the dual-purpose types. (Cull cows supplied about 40 per cent of home produced beef in 1939.[54]) Since only a quarter of each year's crop of heifers was needed for dairy herd replacements, three quarters of the heifers and almost all of the bull calves would, if of suitable beef type, be available for fattening. This huge potential meat supply was a wasted resource. In Great Britain in the 1930s and 1940s, a million 'bobby' calves, fit only for pie meat and manufacturing, were slaughtered every year.[55] Not only was there wastage of calves which could be reared, there was also an urgent need to upgrade surplus dairy-bred calves into stock with recognisable beef-producing potential.

The nature of the cattle trade in the United Kingdom was such that commercial beef animals seldom remained throughout their lives on the farms where they were born. Calves judged likely to be worth rearing could change hands several times as store cattle before finally arriving on fattening farms. To encourage the rearing of the right type of calf, beef potential had to be recognisable at every stage of growth, from week-old calf to store beast 'close to profit'. The problem was remarkably similar to that in North America 60 or 70 years earlier: how to bring about country-wide improvement in the beefing qualities of the national herd – and quickly.

Dealing with calf wastage was straightforward. A government calf subsidy scheme was started in 1947 to encourage rearing of calves suitable for beef production or for breeding replacements in dairy or beef herds. In 1952 payments were restricted to steers of beef type, and to heifers suitable for beef breeding.[56] Upgrading the calf crop by mating lower-yielding dairy cows to beef bulls required a different strategy. As in North America, it would take time to multiply the necessary stud bulls, but following legislation aimed at improving the quality of bulls used

[52] Ministry of Agriculture and Fisheries, *Census of pedigree livestock* (1921). See also J. R. Walton, 'Pedigree and the national cattle herd, *c.* 1750–1950', *AgHR* 34 (1986), p. 156.

[53] G. P. Hirsch and K. E. Hunt, *British agriculture: structure and organisation* (1957, rev. 1960).

[54] Viscount Astor and B. Seebohm Rowntree, *British agriculture: the principles of future policy* (1939), p. 153.

[55] H. F. Marks (ed. D. K. Britton), *A hundred years of British food and farming: a statistical survey* (1989), table 17.5.

[56] W. E. Bowden, *Beef breeding, production and management* (1962), p. 337.

TABLE 3. Changes in sire type, England and Wales, 1936/37 to 1950/51

	Beef (%)	*Dairy* (%)	*Dual-purpose* (%)
1936/37[a]	16.5	14.5	68.5
1937/38	16.0	15.1	68.6
1938/39	16.0	16.1	67.7
1939/40	16.0	17.6	66.4
1940/41	15.6	20.1	64.2
1941/42	14.3	24.4	61.3
1942/43	12.5	30.3	57.1
1943/44	10.8	36.3	52.9
1944/45	11.0	39.2	49.8
1945/46	12.0	39.4	48.6
1946/47	12.8	39.4	47.7
1947/48	12.5	42.4	45.1
1948/49	12.5	46.6	40.8
1949/50	12.8	50.8	36.4
1950/51	13.9	52.6	33.5

Note: [a] not all bulls were classified by type.
Source: data supplied by the Ministry of Agriculture, Fisheries and Food. Based on numbers of bull licences issued, England & Wales; data presented as three-year moving averages.

for service, the use of grade bulls was not acceptable in United Kingdom.[57] Instead, the government made use of the recently established national cattle artificial insemination (AI) service, now increasingly used in dairy herds.[58] This had the potential to bring about upgrading far more rapidly than by natural mating. Freetown Vanguard, one of the most prolific Hereford bulls, sired more than 50,000 calves during his ten years of AI service.[59] To ensure that beef-cross calves were readily identifiable to a potential buyer, in 1947 the government introduced free inseminations from bulls of colour-marking breeds. These were Aberdeen-Angus, Galloway (both of which sire black, polled calves) and, of course, Hereford. Naturally, colour-marked calves were eligible for calf subsidy and this meant a higher price for the week-old calf. So successful was this scheme that the subsidy on beef inseminations was halved two and a half years later, and withdrawn in 1951.[60] The effects on the demand for both beef AI services and for beef crossing bulls were dramatic (Figure 6).

Not only was there a general shift towards the use of beef sires, the ability to colour-mark his calves became an increasingly important attribute for a beef bull (Figures 7–8). Colour-marking

[57] Improvement of Livestock (Licensing of Bulls) Acts: 1922 Northern Ireland; 1931 Scotland; 1934 England and Wales. William C. Miller and E. D. S. Robertson, *Practical animal husbandry* (1952), pp. 583–7.

[58] Established in 1945, Bowden, *Beef breeding*, pp. 85–6.

[59] *Farmers Guardian*, 21 Mar. 1975.

[60] Bowden, *Beef breeding*, p. 113.

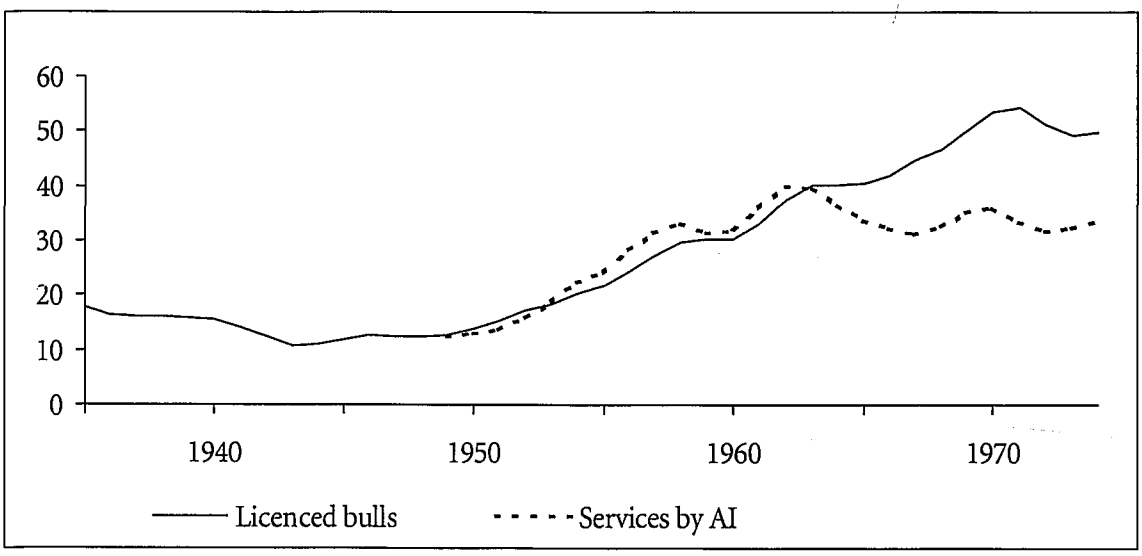


FIGURE 6. Demand for beef sires as percentage of total sire demand, 1935–74.

Sources: Licenced bulls: as Table 3. A.I. data: Milk Marketing Board (MMB), England and Wales. Data presented as three-year moving averages.

was (and remains) *the* most important feature of AI beef, due to the breeding in dairy herds of calves intended for sale. From 1950 until the early 1980s (apart from the three years 1956–58) the Hereford was responsible for more than half of all beef inseminations. Its only serious rival was the finer-boned Aberdeen-Angus, preferred by some dairy farmers because the incidence of difficult calvings in Friesian-type heifers could be reduced by the smaller calf. In 1969–70 60 per cent of heifer services were by Aberdeen-Angus bulls.[61] Herefords took an increasing share of the total market for beef bulls from 1937 to 1970. In 1936–37 35 per cent of licenced beef bulls were Herefords, 49 per cent by 1950–51, 61 per cent in 1960–61 but 78 per cent in 1970–71. Likewise 57 per cent of beef inseminations came from Herefords in 1950–51 but 65 per cent by 1970–71.[62] They also dominated the colour-marking breeds, increasing their share of this sector from 72 per cent to 90 per cent (Figures 7 and 8). The number of Hereford bulls licenced annually increased from around 2,000 in the late 1930s to nearly 6,000 in the early 1970s. Sixteen per cent of the latter total were non-pedigree, emphasising the strength of demand for crossing bulls.

The white-faced calf commanded a financial premium. In a Milk Marketing Board survey, the Hereford × Friesian cross topped calf prices in the years 1965–1970, and by 1969/70, 40 per cent of rearing calves marketed annually were of this parentage. They were of consistently good quality – fewer than five per cent of this cross were classified as 'bobbies', compared with up to 31 per cent for other breeds and crosses. A bobby calf in 1970 was worth less than £7.00, but Hereford × Friesian bull calves for beef rearing averaged £25.20.[63] As a result of the use of Hereford semen in AI, white-faced calves came to be found in markets far outside the native

[61] Milk Marketing Board, *Report of the breeding and production organisation*, 20, (1969–70), p. 89.

[62] Data supplied by the Ministry of Agriculture, Fisheries and Food of the number of bull licences issued (as tabulated in Table 3).

[63] Milk Marketing Board, *Report of the breeding and production organisation*, 20, pp. 80–82.

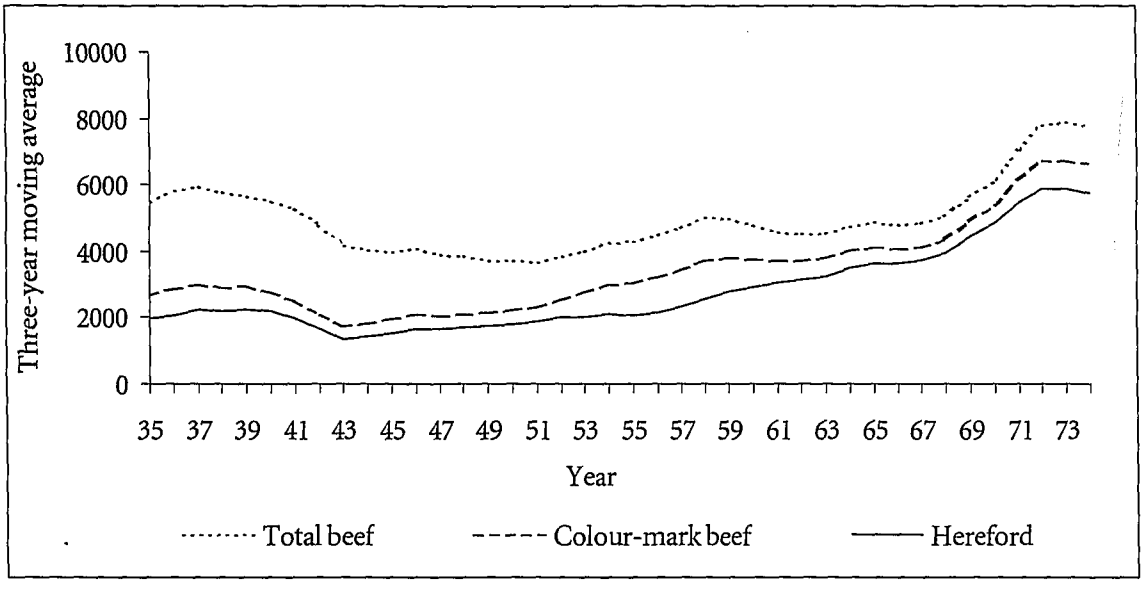


FIGURE 7. Demand for beef sires, licenced bulls, 1935–74.

Source: as Table 3.

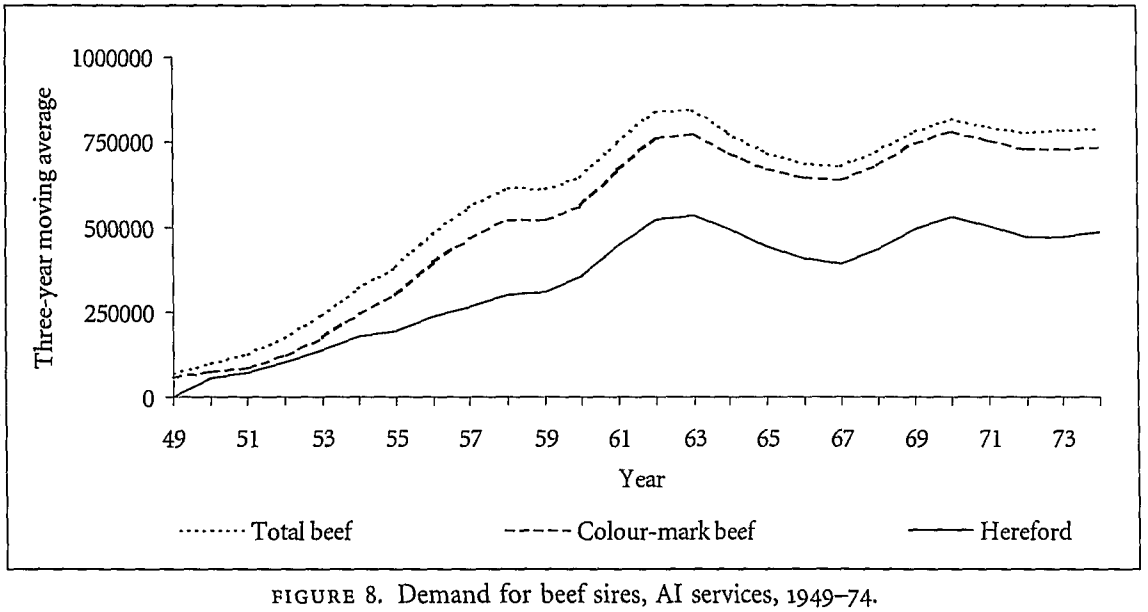


FIGURE 8. Demand for beef sires, AI services, 1949–74.

Source: as Figure 6.

haunts of the breed – in the dairying districts of Cheshire and Wiltshire, and in the former Shorthorn strongholds of the Cumbrian fells and Yorkshire Dales – resulting in a dramatic extension of the geographical distribution of the breed. By 1970, Hereford bulls were present in all the historic counties of England and Wales, except Middlesex and Rutland. However, there was still a noticeable concentration in the breed's historic homelands of the southern Marches and adjoining counties, where the Hereford had virtually no competition from any

TABLE 4. Counties with 100 or more licensed Hereford bulls, 1970/71.

	Hereford bulls	
	Number	*as per cent of total bulls in that county*
Herefordshire	875	98.1
Breconshire	425	97.9
Shropshire	326	64.8
Yorkshire	223	21.4
Radnorshire	197	97.5
Gloucestershire	186	70.7
Worcestershire	168	70.6
Montgomeryshire	161	80.5
Warwickshire	146	47.6
Hampshire	115	51.1
Devon	112	20.1
Staffordshire	100	35.5
TOTAL in England and Wales	4798	42.3

Note: counties are pre-1974 administrative units.
Source: As Table 3.

other breed (Table 4). This was not simply a success story for the Hereford breed, for the objective of boosting home-produced beef supplies had also been achieved. The nation's beef supply no longer depended upon imports but was bred, reared and finished on British farmland. In 1938, 50 per cent of UK beef and veal supplies were imported, but by 1980 the proportion had dropped to 9 per cent.[64]

In the late 1950s, however, undercurrents of change began to threaten all native breeds of beef cattle. Changing consumer tastes, particularly a desire for less saturated fat in the diet, led to a search among Continental breeds for cattle types which, being later-maturing, produced leaner, heavier carcases than the native British breeds and were of superior conformation. These traits were valued by the butcher, as they made available economies of scale (fewer carcases provided an equivalent yield of meat), and the carcases yielded a higher proportion of expensive cuts of meat, with less fat trim. Once again, the main need was for crossing bulls to produce beef from the dairy herd. In 1961 26 Charolais bulls were imported for AI service. These were followed by a consignment of both bulls and cows in 1965, and by Simmental and Limousin stock in 1970 and 1971 respectively.[65]

The effects of these imports can be traced using AI data (bull licencing ceased in 1975). In 1970, Hereford bulls provided 65 per cent of all beef inseminations – but 15 per cent were by Charolais. By 1984, the Hereford, at 44 per cent, had been overtaken by Continental breeds (predominantly Charolais and Simmental), now 47 per cent.[66] They posed a severe challenge

[64] Marks, *Food and farming*, table 17.10.

[65] Peter Johnson, 'Foreigners behind the cattle lines', *Farmers Weekly*, 30 Nov. 1973, pp. iii–ix.

[66] Data for AI supplied by the Milk Marketing Board (see Figure 6).

to the Hereford because, in addition to their assets as beef producers, they also colour-marked their progeny. The Charolais diluted black coat colour to dun or silver and red to fawn or cream; the Simmental passed on his white face. Subsequent importations of other breeds gave further impetus to this trend, particularly as the Continental crosses proved to be well adapted to intensive systems of beef production, whereas early-maturing native breeds are more suited to forage-based diets.

III

This study focuses on two highly successful periods for the Hereford breed, but these episodes are not simply accounts of the fortunes of a single breed: they illustrate two different approaches to the upgrading of cattle stocks on a countrywide scale, and offer significant insights into the symbiotic yet antagonistic relationship between pedigree and commercial sectors of the livestock industry.

The interaction between herd-books, pedigree and the commercial sector has interested earlier writers, predominantly using the Shorthorn as a model for detailed analysis. The show-ring 'fancy' and high caste bloodlines are irrelevant to commercial producers as long as their present stock meet market requirements, i.e. they are readily saleable at a price which pays. Ritvo has argued that the pedigree world was an art form irrelevant to working farmers and related more to status and genealogy than to practical considerations, a view which our analysis would support.[67] In early nineteenth-century England, the Hereford was much more a farmers' beast and did not attract aristocratic and fancy breeders. It was noted in 1868 that Herefords 'as a breed ... have been maintained principally by struggling tenant-farmers', for the lower price of good specimens, compared with Shorthorns, brought the best blood within their reach.[68]

International trade in breeding stock involves an element of speculation and relies on recorded proof of merit. Herefordshire farmers, who had hitherto relied on the local reputation of their cattle, did not see the advantages of pedigree until the 'Yankee Boom', when registration in the herd book became a prerequisite of entry and provided the passport into this highly profitable trade.[69] In 1882, the editor of the *Hereford Herd Book* wrote: 'Now that there is a very extensive demand sprung up for purebred Hereford cattle for exportation to America, their being entered in the English Herd Book is a *sine qua non*. Those who have hitherto ridiculed the idea of entering their herds, and who have not paid proper attention to keeping private herd books, anxiously send in such pedigrees as they can make out'.[70] Until breeding stock was sold outside local region, there was clearly little enthusiasm for formal association or for records other than private herd books, but it is highly likely that the threat posed by the American Hereford Breeders Association was an important catalyst.

[67] Harriet Ritvo, *The animal estate* (1990), pp. 45–81.

[68] H. H. Dixon, 'History of the rise and progress of Hereford cattle', *JRASE*, sec. ser., 4, (1868), pp. 277–290.

[69] E. Parmalee Prentice, *American dairy cattle* (New York, 1942), p. 433 points out that the sale of pure-bred stock had become a speculation, and (quoting Charles H. Hill, *The Guernsey breed* [Waterloo, Iowa, 1917]) held that that high prices in the United States 'will only be forthcoming for animals whose purity of origin is demonstrable'.

[70] T. Duckham, 'What is a Hereford?', *Livestock J.*, 10 Nov. 1882, p. 431; quoted by E. H. Whetham, 'The trade in pedigree livestock, 1850–1910', *AgHR* 27 (1979), pp. 47–50.

Walton and Brassley have gone so far as to argue that pedigree had minimal effects on livestock improvement in the nineteenth century.[71] From the standpoint of the twenty-first century, it is perhaps too easy to devalue the benefits, in a nineteenth-century context, of meat animals which consistently produced uniform offspring and showed the ability to survive and thrive in the absence of modern nutritional and veterinary knowledge. Furthermore, early maturity frees for other use land previously used for three- or four-year-old store cattle. These aspects of improvement cannot be measured on the basis of individual animals. Livestock improvement by the upgrading of 'country bred' types means that commercial farmers *need* the produce of the elites of their favoured breed. When market requirements change, rendering current animals unprofitable, 'better', i.e. more suitable strains are sought. Walton has drawn attention to the more practical approach of breeders in North America, stating that 'free competition between rival cattle breeds ensured that the possibilities of pedigree were neither subordinate to nor subverted by fancy breeders as they were in Britain'.[72] It can be shown, however, that in the United States a newly-formed elite did attempt to control developments, supporting Prentice's view of pedigree registration as restricting choice of breeding stock in a manner never experienced in the first half of the nineteenth century.[73]

Americans who saw the opportunities on the Great Plains were businessmen as well as cattlemen, and their motivation was not status but money. The potential market for improved bulls was so great and the prospect of profit so tempting that, once a strong nucleus population of Herefords had been imported from the United Kingdom and Canada, American breeders restricted the trade to their own elite group, thus safeguarding their investment in imported pedigree cattle. They began by forming a breed society in 1881 and publishing a herd book.[74] Control was further tightened in 1883 by restricting entries in the American herd book to the produce of animals registered in volumes one and two, or in the first 13 volumes of the English Herd Book.[75] In 1885 a fee of $100 was imposed for the registration of imported cattle.[76] As a restrictive practice the 'Volume 13 rule' had a precedent in the identification by American Shorthorn breeders, of 'the Seventeens', the unfashionable non-pedigree progeny of the 1817 Shorthorn importation.[77] The monetary value of well-authenticated, fashionable lineage was now clear. Taken together, these measures not only restricted British Hereford breeders, but also inhibited United States cattlemen from by-passing the newly-formed association by making their own direct importations from Great Britain.

Since the supply of pure-bred cattle was insufficient for the job, grade cattle became the

[71] J. R. Walton, 'Pedigree and the national cattle herd', pp. 169–70; P. Brassley, 'Livestock breeds', in E. J. T. Collins (ed.), *The agrarian history of England and Wales*, VII, *1850–1914* (2000), pp. 563–9.

[72] Walton, 'Pedigree and productivity', p. 456.

[73] Prentice, *Dairy cattle*, pp. 432–3.

[74] Sanders, *Herefords*, p. 520. The association purchased T. L. Miller's privately published *American Hereford Record* for $5000. His first two volumes were published in 1881 and 1882 respectively.

[75] Sanders, *Herefords*, p. 521

[76] Sanders, *Herefords*, p. 1041; Macdonald and Sinclair, *History of Hereford cattle* (1886 edn), p. 310. The $100 fee was removed in 1891.

[77] Walton, 'Pedigree and productivity', pp. 445–6. The 'Volume 13 rule' came about due to the different registration practices of the two herd books. At this time, the English herd book required that all bulls should have four crosses of registered Hereford and cows three. The Americans, with their more mongrelized foundation stock, insisted on five for bulls and four for cows, as they wished to know 'not only that an animal was thoroughbred, but how and why it was thoroughbred'. Miller, *Hereford*, p. 251

currency of most ranchers and feeders. Low-grades could be multiplied independently of breed society – as were horses.[78] Pedigree was not relevant, but conformation, thriftyness, and reliable breeding were. A breeder who could supply high-grade cattle of the right type would find his stock in demand, but would need to maintain that quality from the stock of the pedigree elite. It is likely that up-grading was an ongoing ambition of many ranchers and producers of breeding stock, not necessarily with pedigree as the ultimate aim.

In the twentieth century, AI introduced new possibilities by making the services of quality, registered bulls of a variety of breeds available to commercial farmers at a reasonable price; breed societies varied in their attitude to this technology. There were legitimate concerns about the wide dissemination of the genes of unproven bulls and reduction of genetic diversity, but there were also fears about the effect on bull sales. The Hereford Herd Book Society did not allow registration of AI sired calves until 1969.[79] This ruling effectively prevented the formation of new pedigree herds or multiplication of pedigree cattle by AI, or upgrading commercial cattle to pure-bred Hereford without buying or hiring a bull.[80] However, it did not inhibit dairy farmers who wanted a more valuable cross-bred calf, nor commercial beef cattlemen whose raw materials were chiefly these dairy-bred calves.

Breed societies and the concept of pedigree have had both positive and negative influences on the improvement of commercial farm livestock. The recorded ancestry of pedigree animals offers assurance that heritable attributes will be passed on to progeny; visual inspection cannot guarantee this – animals of mixed ancestry will not breed true to type. However, once a herd book is closed, pedigree restricts improvement within a breed by limiting the gene pool. Although awareness of potential is increased by publicity and breed promotion, the high profile pedigree sector can be seen as impeding, by high prices and restricted supply, the pace of livestock improvement. Nevertheless, it cannot be disputed that the tiny proportion of pedigree animals laid the solid foundation for worldwide improvement of farm livestock, and it is in this context that the Hereford bull and his breeders played a major role in boosting the supply of prime fresh and chilled beef to the world's first industrialized country. The efforts of this committed group of breeders, in a small English county, transformed the quality of commercial beef cattle world-wide.

[78] R. J. Moore-Colyer, 'Aspects of the trade in British pedigree draught horses with the United States and Canada, *c.* 1850–1920', *AgHR* 48 (2000) pp. 48, 55.

[79] Hereford Cattle Society, breed publicity, 1996. (Registration was subject to stringent rules.)

[80] Contrast this with the attitude of the British Friesian Society, founded 1909. In 1950 the society itself purchased 17 Dutch bulls to stand at AI centres. J. K. Stanford, *British Friesians: a history of the breed* (1956), p. 177; G. E. Mingay, *British Friesians: an epic of progress* (1982), p. 186.

The myth of neglect: responses to the early organic movement, 1930–1950*

by Philip Conford

Abstract

There exists a commonly-held view that the pioneers of the British organic movement were ignored and their ideas disregarded, a myth which this article sets out to dispel. On the contrary, the early organicists were taken seriously, particularly by the fertilizer industry. The views of the agricultural botanist Sir Albert Howard on the vital importance of humus aroused much interest and opposition. The nutritionist Sir Robert McCarrison gained a wide audience for his ideas on diet and some leading members of the dental profession were sympathetic to the theory that organically-grown food would promote health. The early organic movement was favourably treated by the *New Statesman* despite the movement's links with the political right; its supporters gained considerable radio air-time. The figures from the movement influenced the Church of England's Malvern Conference (1941) and the Lord Justice Scott's *Report* on rural life (1943). The article concludes by suggesting some possible reasons for the movement's failure to influence post-war agricultural policy.

There is within the contemporary organic movement a firmly-held view that the movement's founders were neglected and their ideas ignored; that they were voices crying in the wilderness because no-one was prepared to offer them access to mainstream channels of communication. In the summer of 2000 for instance, during the course of an interview for a radio documentary, Patrick Holden, the Soil Association's Director, described the early organic school as 'a very interesting group of individuals who I think had a vision, had some very big ideas which were not heard, arguably, in the next half-century'. He continued: 'Very few of the ideas that we have today weren't thought about and articulated in the early editions of *Mother Earth* and elsewhere in the Soil Association. And yet when those ideas were first expressed they were completely ignored'.[1] Another prominent figure in today's movement, the farmer and estate-owner Julian Rose, has written in his contribution to the symposium *Town and Country* that 'back in 1946 almost nobody concerned with "progressive" farming methods paid a jot of attention to those early pioneers of organic farming'. Writing in the New Age journal *Resurgence* in 1998, on Lady Eve Balfour and Rachel Carson, the journalist Sophie Poklewski Koziell quoted the soil scientist Dr V. I. Stewart, who considered that Lady Balfour's research

* This article is an expanded version of a paper given to the annual conference of the British Agricultural History Society at Ambleside in April 2001. The author would like to thank the Society for the opportunity to speak on that occasion.

[1] *Organic Roots*, BBC Radio 4, 23 Sept. 2000.

had been 'ignored because the agricultural scientists of the time were naively self-confident of their ability to dominate Nature. [...] Lady Eve herself was dismissed as a mystic'.[2]

The same sort of idea has been expressed by one of the last survivors of the generation who founded the organic movement, Mary Langman, who worked at the Pioneer Health Centre in the 1930s and was a founder-member of the Soil Association. Talking about the work of the nutritionist Sir Robert McCarrison, she described how in his experimental work he 'had produced [...] communities of rats with no disease, and you would have thought that the medical profession would have thought that interesting, but they ignored it completely'.[3]

My aim on this occasion is to offer a body of evidence which suggests that this view of the early organic movement is quite mistaken. First of all, however, a brief description of the movement and the problems which it addressed is required. In this paper the phrase 'early organic movement' will refer to that group of people who in the 1930s and 1940s were concerned about the interrelated questions of soil erosion and land fertility, the potential dangers of mechanized farming and artificial fertilizers, the nutritional value of food and the physical health of Britain's population, the state of the nation's agriculture and the perceived decay of rural life, and the wider effects of an urban bias on Britain's social and cultural health. Underlying these concerns was the conviction that living processes must be interpreted biologically and ecologically, and that any chemical, mechanistic or purely economic approach to agriculture was inadequate and potentially harmful. Human beings should seek through science to work with the God-given natural order rather than exploiting the environment out of greed.[4]

Many of the figures who propagated this philosophy of agriculture were well-known and a number of them were highly distinguished in their various fields, so it does seem inherently improbable that nobody took any notice of them. Yet it is undoubtedly true that the theory and practice of organic cultivation found no place in the 1947 Agriculture Act. The organic school had written prolifically between 1938 and 1946 about the direction which they wanted farming to take when the time came for post-war reconstruction, but the 1947 Act confirmed British agriculture on its wartime path of mechanization, increased input of chemicals, and a standard of efficiency measured by output per worker.[5]

This approach had been advocated during the inter-war period by some notable agriculturalists, among them Sir Daniel Hall, Viscount Astor and C. S. Orwin.[6] They believed that small, mixed farms were an anachronism and that the future lay with larger-scale specialist enterprises. Chemical fertilizers would render crop rotation systems irrelevant and reduce the need for animal manure; use of more powerful machinery would bring about economies of scale;

[2] J. Rose, 'An organic connection' in A. Barnett and R. Scruton (eds), *Town and Country* (1998), p. 124; *Resurgence* 195 (1998), p. 38.

[3] Interview with the author, 28 June 2000.

[4] For a full description of the early organic movement see Philip Conford, *The origins of the organic movement* (2001).

[5] On the 1947 Agriculture Act and its effects, see Anthony Cripps, *The Agriculture Act 1947* (1948); Graham Harvey, *The killing of the countryside* (1997), and B. A. Holderness, *British agriculture since 1945* (1985).

[6] See for instance Viscount Astor and B. S. Rowntree, *British agriculture: the principles of future policy* (1938), and *Mixed farming and muddled thinking* (1946); A. D. Hall, *Reconstruction and the land* (1941); C. S. Orwin, *The future of farming* (1930), and *Speed the plough* (1942). See also Conford, *Origins*, pp. 26–46.

use of pesticides and herbicides would reduce labour costs; strict accounting methods would ensure that farmers became businesslike in their approach to profitability. Farming could, and should, survive only if it were free of taxpayers' support and subsidies, and that meant that it should be – to use the cliché of a later era – leaner and fitter. There was no place for sentimentality about tradition: to increase output per man would mean a reduced workforce, and those who remained would be not so much skilled husbandmen as skilled mechanics.

The outbreak of war ensured that agriculture was again of fundamental importance to national survival, yet only two years previously Britain had been importing 65 per cent of its food. A massive expansion of home production was essential, and was achieved. Simultaneously there was a dramatic increase in application of artificial fertilizers and in the use of machinery, most notably tractors and combine harvesters.[7] The clear inference was that industrial methods produced the goods, and thus they ascended the moral high ground.

In contrast, the organicists wanted to see a greatly reduced application of artificial fertilizers and a correspondingly great increase in the use of composts and farmyard manure; they wanted the survival of the mixed, family farm; many more people employed on the land; small-scale, appropriate technology; and efficiency measured by output per acre, a criterion which encouraged the creation of a richly fertile soil and avoided the implicit rural depopulation of measuring efficiency by output per worker. They were also sceptical about the proposed National Health Service because it would concentrate on treatment and cure rather than prevention. Sir Albert Howard considered agriculture to be the best form of preventive medicine, believing like McCarrison that a diet of food produced from humus-rich soil strengthened resistance to disease. Experiments in social health like the Pioneer Health Centre at Peckham were threatened by the proposed state system.[8]

The organic pioneers were ignored in the sense that their proposals were not enshrined in law. But if we mean by 'being ignored' that they were denied the opportunity to express their views, or that nobody paid any attention to those views, then it cannot at all be claimed that they were ignored. As this paper demonstrates, they had ample opportunity to express their views in a wide range of publications and at a variety of venues, and those views were thoroughly debated. In fact the artificial fertilizer industry took organic ideas very seriously, saw them as a threat, and went to considerable effort to see that they were refuted or mocked.

I

We can begin with Sir Albert Howard, probably the most important figure in the early organic movement. His title itself provides a hint that he was not ignored; similarly we can bear in

[7] R. J. Moore-Colyer, 'Back to basics: Rolf Gardiner, H. J. Massingham and "A Kinship in Husbandry"', *Rural Hist.* 12 (2001), p. 85; John Martin, *The development of modern agriculture* (2000), pp. 47–54, 106. For a contemporary account of the increase in productivity see N. Gangulee, *The battle of the land* (1943).

[8] See, for example, Sir Albert Howard, *An agricultural testament* (1940), and *Farming and gardening for health or disease* (1945); H. J. Massingham (ed.), *England and the farmer* (1941), *The natural order* (1945), and *The small farmer* (1947); Sir Robert McCarrison, *Nutrition and health* (1961); Lord Northbourne, *Look to the land* (1940); Innes H. Pearse and Lucy H. Crocker, *The Peckham experiment* (1943); Lionel J. Picton, *Thoughts on feeding* (1946), and Edgar J. Saxon's journal *Health and Life*, from 1934 until his death in 1956.

mind Sir Robert McCarrison, Sir George Stapledon,[9] and Sir Norman Bennett. Howard served the Empire in India from 1905 to 1931 and was President of the Indian Science Congress in 1926. In conjunction with his wife Gabrielle he published innumerable articles in scientific journals. In a review of their 1929 book *The Application of Science to Crop Production* in the journal *Nature*, the agriculturalist F. L. Engledow, who had visited Howard's Institute of Plant Industry at Indore, praised the strong potentialities of the Howards' work, and described it as a major agency of development in Central India's agriculture.[10]

Two years later, after Gabrielle's death, Howard wrote in collaboration with Y. D. Wad the book which he intended to be his last contribution to agricultural science, *The Waste Products of Agriculture*, which described the development of his system of composting, known as the Indore Process. He returned to England the same year, 1931, and was knighted in 1934. By then the Indore Process was being adopted by a number of experimental farmers and estate-owners in different parts of the world, and Howard found himself launched on his crusade for the virtues of humus and against the potential dangers of chemical pesticides and artificial fertilizers. He found many disciples and made plenty of enemies, and he was given a platform for his ideas at various venues. One of his best-known British followers, the fenland market gardener Roy Wilson, heard Howard speak at the Cambridge University School of Agriculture in 1935. In February 1937 Howard addressed the Farmers' Club, his audience on that occasion including some formidable representatives of the chemical approach to soil fertility: the agricultural chemist Dr J. A. Voelcker; Dr E. M. Crowther of Rothamsted, and Dr S. J. Watson of ICI's Jealott's Hill Research Station. Obviously it was essential for the interests which they represented that Howard's views should be refuted. Other guests at the meeting included the Wiltshire farmer A. J. Hosier, and the estate-owner Christopher Turnor.[11]

In 1939 Sir Bernard Greenwell, who was successfully using the Indore Process on his estates in Suffolk and Surrey, also spoke at the Farmers' Club, on the topic of 'Soil fertility – the farm's capital'. Lord Bledisloe, one of the most noted of agriculturalists at the time, attended the meeting, as did a representative of the Ministry of Health, J. C. Dawes. During the discussion Dr G. T. Wrench spoke about the relationship between agriculture and public health: like Howard he had spent many years in India, and he was a keen supporter of the organic cause.[12]

Bledisloe was sympathetic towards Wrench's views, and Wrench was invited to dinner afterwards. He asked the Farmers' Club if they could arrange for him to meet the Ministers of

[9] Stapledon's relationship to the organic movement is complex. He did not consider the case against chemical fertilizers proven, but he was a close friend of leading organicist Rolf Gardiner and a major influence on the 'Kinship in Husbandry' group, sharing many of their concerns about rural society. See R. J. Moore-Colyer, 'Sir George Stapledon (1882–1960) and the landscape of Britain', *Environment and History* 5 (1999), pp. 221–36, and Robert Waller, *Prophet of the new age* (1962).

[10] *Nature* 124 (1929), pp. 974–76; Albert and Gabrielle Howard, *The application of science to crop production* (1929).

[11] Albert Howard and Yeshwant D. Wad, *The waste products of agriculture – their utilization as humus* (1931). On Wilson, see George Godwin, *The land our larder* (1939). For Howard's talk at the Farmers' Club see Sir Albert Howard, 'The restoration and maintenance of fertility', *J. Farmers' Club* (Feb. 1937).

[12] Sir Bernard Greenwell, 'Soil fertility: the farm's capital', *J. Farmers' Club* (Feb. 1939); G. T. Wrench, *The wheel of health* (1938). Greenwell, who was chairman of the County of London Electric Supply Company, owned farms near Woodbridge in Suffolk and Godstone in Surrey. He used municipal wastes from the London Borough of Southwark at the latter site as part of his composting process. His son Peter was a founder member of the Soil Association.

Agriculture and Health – respectively Sir Reginald Dorman-Smith and Sir Walter Elliot – and a dinner was arranged with both men at the AA Club in May 1939. Wrench argued that land should be earmarked for organic farming, and the quality of its food tested. 'The two Ministers [...] listened to me without interruption', Wrench recalled. Elliot said that what he wanted was both 'possible and desirable', but with the threat of world war nothing could be done at that time.[13]

With the actuality of war, agriculture became explicitly what it always is implicitly, a matter of vital national importance, and Howard and his followers seized the opportunity to press their case as vigorously as possible. A fertile, humus-rich soil would not only increase productivity, they argued, but the food grown would improve national health and fitness. We know that official policy moved in a direction different from what the organicists wanted to see, but their case was given considerable coverage and their opponents paid it the compliment of taking every opportunity to discredit it. A study of two specialist agricultural journals demonstrates the prominence which the debate achieved.

First of all, some examples from *Farmers Weekly*. An anonymous article in December 1939, 'Town refuse for farms – millions of tons wasted in peace time to be salvaged', referred to Greenwell's composting of town wastes, and a fortnight later a photo feature enticingly headed 'Soil fertility from the dustbin' looked at the work of a firm called 'Messrs. Hyganic Ltd.' Another of Howard's disciples, Viscount Lymington, was photographed addressing Sir Reginald Dorman-Smith and a group of Hampshire allotment-holders at a demonstration of a 'new system of composting' being carried out on his estate.[14]

During 1941 the question of how best to increase fertility was continually discussed in feature articles and the correspondence columns, and battle lines were drawn between those who supported increased use of artificials and those who followed Howard. A letter from Howard in January that year on the link between loss of humus and the spread of disease provoked a correspondence which lasted more than a month. His most persistent opponent in *Farmers Weekly* during the war was A. H. Brown of Hayling Island, a prolific letter-writer who challenged the organic case on every point and refused to accept the claims of Howard's followers. Another correspondent rejected Howard's methods on economic grounds, while another sought a compromise, as did A. G. Street in his column the following week. Street, the Wiltshire dairy farmer and popular broadcaster who has a strong claim to have been 'the voice of farming' for the British public from the 1930s to the 1950s, tried to steer a middle course, favouring a mixture of humus and artificials, but he shared Howard's conviction that humus was essential.[15]

In the autumn of 1941 Lord Cranworth, Chairman of the Land Fertility Committee, contributed an article on 'Fertility – the country's capital', arguing that farmyard manure was the best source of fertility and referring to the views of 'so great a scientist as Sir Albert Howard'. A fortnight later Brown was back on the letters page again, finding himself alongside two correspondents sympathetic to Howard. One of them, the Development Engineer for the City

[13] *Mother Earth* (Jan. 1952), p. 58

[14] *Farmers Weekly*, 15 Dec. 1939, p. 12; 29 Dec. 1939, pp. 20–1; 26 Apr. 1940, p. 23.

[15] *ibid.*, 3 Jan. 1941, pp. 14–15; 10 Jan. 1941, pp. 12, 25. A. G. Street's autobiographical memoir *Farmer's Glory* (1932) initiated a highly successful career as writer and broadcaster. Having urged the revival of agriculture during the 1930s he became a critic of the 'feather-bedding' of farmers in the 1950s. See A. G. Street, *Farming England* (1937) and *Feather-Bedding* (1954); also Pamela Street, *My Father, A. G. Street* (1969).

of Birmingham, supported Howard's view that controlled tips could act as humus-mines.[16] The debate was even more dominant the following year, holding its place from August until November. A. H. Brown was contemptuous of what he called 'This "Nature" Business', saying that every intelligent thing done on his farm was against Nature, but Howard found support from other farmers. An entire page in the issue of 16 October was devoted to the humus debate, with a long letter from Howard and other letters from various correspondents. The debate was given further generous coverage in the issue of 6 November.[17]

In retrospect it is interesting to note how important the issue was and how the opposing sides appeared to be evenly represented. There is a sense that at the time the outcome of the battle was not a foregone conclusion; Howard and his supporters presented a case, which was generally regarded as plausible, significant in its implications, and worthy of the respect of practical farmers. Even those who were not convinced could accept the need for experiments to see if Howard's views were justified; a Norfolk farmer called Roger North was a case in point.[18] Supporters of artificials found themselves resorting to accusations of woolly-mindedness in their attempts to discredit the organic case. In November 1943 Professor D. M. S. Watson was reported as saying that organicists seemed to adopt a curiously mystical attitude to the role of farmyard manure, whose importance was greatly exaggerated; but an Aylesbury farmer, John Porter, challenged this view the following week in an issue containing articles on what was evidently a widespread concern about land fertility. Sir John Russell, who had recently retired as Director of Rothamsted Experimental Station, predicted that the land would be in a better state at the end of the war than it had been at the start.[19]

As the war approached its end, A. H. Brown was still busy rejecting organic claims. He dismissed the views of Friend Sykes, one of Howard's most prominent supporters, by asserting that 'The future is with the scientist, not with the mystic'. This exchange between Sykes and Brown produced a clutch of letters the following week on both sides of the argument. Brown's support came from T. M. Waller, a Chemistry lecturer at Manchester University, while Sykes was supported by the farmer F. H. Marsay of Redcar in Yorkshire and by E. R. Isted, a Sussex nurseryman.[20]

Before we leave *Farmers Weekly* it is worth noting how many members of the organic school were granted space in its pages in the late 1930s and the 1940s. Adrian Bell, Lord Bledisloe, L. F. Easterbrook, Jorian Jenks, H. J. Massingham, R. G. Stapledon, Lord Teviot, Roy Wilson, and the forester Richard St. Barbe Baker all appeared, and the Somerset farmer Newman Turner, one of Howard's most active supporters, regularly contributed feature articles. Perhaps most remarkable of all is that members of the Kinship in Husbandry group were given a four-part series in July 1942, with successive issues carrying major articles by Lord Northbourne, J. E. Hosking, Viscount Lymington and Philip Mairet.[21]

[16] *Farmers Weekly*, 10 Oct. 1941, p. 33; 24 Oct. 1941, p. 16.

[17] *ibid.*, 11 Sept. 1942, p. 12; 16 Oct. 1942, p. 29; 6 Nov. 1942, p. 30.

[18] *ibid.*, 2 Oct. 1942, p. 12.

[19] *ibid.*, 5 Nov. 1943, p. 14; 12 Nov. 1943, pp. 12, 14.

[20] *ibid.*, 18 May 1945, p. 12; 25 May 1945, pp. 12–13. For Sykes's ideas and practice, see Friend Sykes, *Humus and the farmer* (1946).

[21] *Farmers Weekly*, 3 July 1942, p. 27; 10 July 1942, pp. 25–6; 17 July 1942, p. 27; 24 July 1942, pp. 26–7. On the Kinship in Husbandry see Rolf Gardiner, *Water springing from the ground* (1972), pp. 196–99 and Moore-Colyer, 'Back to Basics'.

When we turn to the *Fertiliser, Feeding Stuffs and Farm Supplies Journal* – *Fertiliser Journal* for short – we find that the organic case was treated even more seriously than in *Farmers Weekly*. The *Fertiliser Journal* was a fortnightly trade newspaper, and the vested interests of the fertilizer industry clearly could not allow the organic case to succeed and make their products unnecessary. This is not to say that the organicists were barred from the journal's pages: in fact it was generous in allowing them the opportunity to put their arguments, printing articles by Howard, F. C. R. Douglas, J. M. Moubray, William Albrecht, G. V. Jacks and Laurence Easterbrook.[22] But it employed as writer and reviewer a chemist called Donald Hopkins, who seems to have been given the task of reading everything the organic school wrote and assessing the validity of the arguments. Hopkins's work provides the clearest evidence that the organic case was far from being ignored by the pro-chemical lobby.

Hopkins, although fair-minded and respectful of his opponents, worked for the fertilizer industry. In a talk to the AGM of the Horticultural Fertilisers Association in London on 14 October 1948, he urged his audience in the following words: 'If we believe in ourselves, in the goods that we manufacture and distribute, then we should defend them whenever they are attacked'. Anti-fertilizer arguments were 'widespread', Hopkins reported, 'and a number of people [were] regularly being taken in by their plausibility'. Most shocking of all, fertilizers had even been attacked from the pulpit of a West Country parish church.[23]

By the time he gave that speech, Hopkins had been fighting the organicists for five years. In 1943 the horticulturalist Raymond Bush had produced a Penguin Special on *Soft Fruit Growing*, which included an interview with Sir Albert Howard. Hopkins reviewed it in the *Fertiliser Journal*, and said that uninformed readers would gain the impression from Howard's words that the fertilizer industry was 'futile and unnecessary'. Later that year Hopkins wrote a three-part article, 'Artificials and the future', which started by drawing attention to a school of thought which opposed the use of artificials altogether, and suggested that it needed to be taken seriously, since 'if there were no flaws in Sir Albert Howard's reasoning, the artificial fertiliser industry would have to go over to composting or close down'.[24]

Lady Balfour's book *The Living Soil* appeared in the autumn of 1943, and Hopkins paid it the tribute of a very long and closely argued review. We have already noted Dr V. I. Stewart's claim that Lady Balfour was discounted as a mystic: this certainly was not the case with Hopkins, who regarded her book as better written and potentially more dangerous to the fertilizer industry than Howard's *Agricultural Testament*. It was logical and scientific, and its moderate tone made it powerfully persuasive. 'Any reader of this JOURNAL,' he warned, 'who is sublimely confident that nothing can stop the increasing future use of artificial fertilisers had better obtain

[22] *Fertiliser, Feeding Stuffs and Farm Supplies Journal* (hereafter *Fertiliser J.*), 26 July 1939, pp. 401–03; 20 Aug. 1941, pp. 251–56; 23 June 1943, pp. 295–96; 25 Oct. 1944, pp. 507–09; 5 Mar. 1941, pp. 63–68; 13 May 1942, pp. 139–42. F. C. R. Douglas, Labour MP for Battersea, became Lord Douglas of Barloch and a founder member of the Soil Association; J. M. Moubray was a Rhodesian farmer who successfully used the Indore Process on his estate; William Albrecht was a United States soil scientist with close links to the British organic movement; G. V. Jacks wrote, with R. O. Whyte, the classic survey of world soil erosion, *The Rape of the Earth* (1939). For Easterbrook, see below, pp. 102–3.

[23] D. P. Hopkins, 'Words and the fertiliser idea', *Fertiliser J.*, 3 Nov. 1948, pp. 615–24.

[24] *Fertiliser J.*, 3. Mar. 1943, p. 101; 18 Aug. 1943, p. 369. The three parts of the article, 'Artificials and the future', were in *Fertiliser J.*, 18 Aug. 1943, pp. 367–72; 1 Sept. 1943, pp. 387–92; 15 Sept. 1943, pp. 407–10.

a copy of this book and digest it exhaustively'. Lady Balfour was granted a lengthy reply a couple of months later, to which Hopkins in turn responded. He believed her work in Suffolk to be potentially very important, and finished by saying that nobody could write with more lucidity and knowledge on humus farming than Lady Balfour. Early in 1946 Lady Balfour reviewed Hopkins's own book, *Chemicals, Humus, and the Soil.*[25]

That Hopkins published this book is one of the strongest pieces of evidence that the organic case was taken seriously. He felt that the success of organic propaganda had overshadowed the case for artificials, and that orthodox science must present its arguments clearly or lose the debate by default. 'I certainly feel', he wrote, 'that the humus school has had its full quota of self-expression, and I think that this symposium of opinion on the other side [...] is long overdue as a balancing factor in the controversy'. Non-scientists were attracted by the vivid writing of people like Howard, because attacks on orthodoxy are always exciting. 'The anti-fertiliser argument [...] tends to have rather a pull with the jury of ordinary opinion', Hopkins believed, and it was 'presented with all the vigour and passion of a crusade against cruelty'. Hopkins did not deny the importance of humus, and he was prepared to accept that the extreme nature of the attacks on artificials had been valuable in reminding scientists of that importance. 'If Sir Albert Howard had not believed that humus should be used exclusively, many less people to-day would be convinced that it was even needed partially'.[26]

Hopkins was less sympathetic towards some of the other members of the organic school, notably Laurence Easterbrook, whom he accused of using the techniques of political propaganda. Easterbrook wrote in the *News Chronicle* of agricultural scientists 'doping the soil with chemicals [...] to compel nature's co-operation in food production'; Hopkins considered the use of 'doping' and 'compel' to be an abuse of words which was downright unpatriotic. Large numbers of people were working to produce fertilizers: 'And all this effort is based upon the idea that fertilisers, properly used, are essential to crop production, to national efficiency'.[27]

Some of the advertisements in the *Fertiliser Journal* suggest that the fertilizer companies were willing to respond with propaganda of their own. Imperial Chemical Industries (ICI) were particularly active in 1944 and 1945. On 26 April 1944 an advertisement headed 'In good heart' reflected widespread concern about the effects of wartime demands on soil fertility, contrasting the views of the organicists with more optimistic predictions:

> One school holds that four years of ... neglecting livestock has resulted in a decline in fertility, and that the war will end with the land impoverished. The other school maintains that the improvements in farm practice have been so great that Britain should emerge from wartime farming with the land in better heart.[28]

The advertisement judiciously concluded that the latter view was 'probably' correct. At the top was a drawing of a pastoral landscape of small, hedged fields; the clear implication was that use of ICI's products was compatible with traditional rural values. An advertisement on 'Plant Foods' later the same year expressed the faith in 'the immense power of modern science' which was a frequent feature of pro-chemical rhetoric, but also made a generous concession to the organic

[25] *ibid.*, 27 Oct. 1943, p. 471; 19 Jan. 1944, pp. 27–31; 2 Feb. 1944, pp. 51–60; 13 Feb. 1946, pp. 105–07.

[26] D. P. Hopkins, *Chemicals, humus and the soil* (1945), pp. 236, 13, 167 and 251.

[27] *Fertiliser J.*, 10 May 1944, pp. 219–20.

[28] *ibid.*, 26 Apr. 1944, p. 200.

case in mentioning humus, evidently to present ICI as fair-minded in contrast with the organic extremists. Four weeks later the tone was more confrontational, in an advertisement entitled 'The constant factor' (Figure 1). 'Alarmists' were suggesting that modern farming methods were turning England into a 'dust-bowl', but their fears were 'groundless', having 'no foundation whatsoever in fact'. Soil fertility was 'on the up grade', and although ICI made a concession to those who valued dung, it was hinted that dung was not really necessary any more.[29]

In the autumn of 1945 ICI produced a series of advertisements which contrasted the agricultural beliefs of primitive societies with the scientific knowledge available to mid-twentieth-century Britain. One in particular, entitled 'Symbols of Fertility', was an implicit criticism of the organic school. 'Our life depends on the fertility of the soil. Early men did not know this. [...] they prayed to the sun and offered sacrifices'. Writers like Howard and McCarrison valued the example of Asian agriculture, with its emphasis on the return of wastes to the soil, and the American soil scientist Franklin H. King, who had worked for the United States Department of Agriculture, considered Oriental farming both wise and sophisticated. In contrast, ICI presented primitive societies as so stunningly ignorant that one can only wonder how they ever managed to survive at all.[30]

Fisons employed similar methods. In the summer of 1945 one of their advertisements dwelt on the 'lovely old' saying 'As sure as God's in Gloucestershire', and to underline the point it had at the top a drawing of the nestling landscape of Timeless Rural England: the sort of scene which could easily have been celebrated in H. J. Massingham's *Cotswold Country*. Yet Fisons, the advertisement curiously implied, was at least as traditional as the Gloucestershire landscape; the name Fisons meant 'the same thing always – and to everybody, everywhere'. A year later another Fisons advertisement appealed to sentimentality about nurses, because nurses knew that for healthy food the land must be nourished by both 'muck' and fertilizers. One sees again here the attempt to appear impartial by accepting some of the organic case.[31]

These advertisements, and the many others which were produced in the mid-1940s, strongly indicate not just that ICI and Fisons saw organic ideas as a threat, but that they felt there was public sympathy for the 'timeless' English landscape and the mixed farming which had been integral to it.[32] It is difficult otherwise to see why the fertilizer industry used images of pastoral farming landscapes, reassuring people that their products could be assimilated to traditional methods of agriculture, or why they were so keen to stress that they recognized the value of farmyard manure and humus. One can speculate that they feared reduced demand for their products once the crisis of war was over, and anticipated a national desire to return to the familiar patterns of rural life and work.

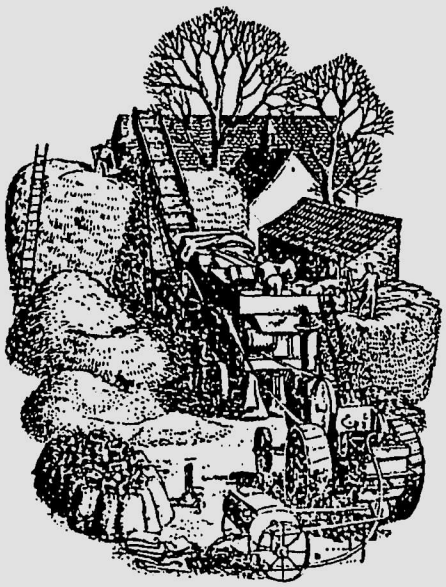
Before turning to the more specifically medical strand of the organic movement, it is worth mentioning some other influential figures who considered the organic movement powerful enough to represent a threat to their view of agriculture. In 1941 Sir Daniel Hall wrote to his son lamenting the steady flow of books 'depicting the simple life on the land before machines

[29] *ibid.*, 2 Aug. 1944, p. 370; 30 Aug. 1944, p. 416.

[30] *ibid.*, 12 Sept. 1945, p. 540. F. H. King, *Farmers of Forty Centuries* (1927).

[31] *Farmers Weekly*, 10 Aug. 1945, p. 33; 2 Aug. 1946, p. 31. H. J. Massingham, *Cotswold Country* (1937).

[32] The success of B. T. Batsford's topographical books during the 1930s and 1940s would certainly indicate this. See also Angus Calder, *The myth of the Blitz* (1991), pp. 181–88.



The constant factor

FROM time to time alarmists suggest that modern farming methods are in danger of turning our green and pleasant England into a dust-bowl like the farmed-out prairies. These alarms are groundless. They have no foundation whatsoever in fact.

Soil fertility in Britain, even under war conditions, is on the up grade, nor have the mechanisation of farms and the replacement of the horse materially reduced manurial possibilities. Dung, as everyone knows, improves soil texture, maintains an adequate reserve of soil moisture against dry spells. provides essential plant foods and encourages benevolent bacterial activity. With dung present, much fuller use may be made of added nitrogen. But dung is not always available and soil texture may demand green manuring. Even so, the response to nitrogen remains attractive. Consider the following average crop increases following suitable dressings of nitrogen where no dung was used :—

Swedes: 3.9 tons an acre. Mangolds: 5.1 tons an acre.
Sugar Beet: 1.8 tons an acre. Potatoes: 1.9 tons an acre.
Cereals : 4.9 cwts. an acre.

Roots, potatoes, kale and grassland seldom get enough nitrogen. Soil and local climate may suggest modifications, but the need for nitrogen remains a constant factor.

ICI

This is No. 10 in the series of Fertility announcements which have appeared in national farming and provincial newspapers.

FIGURE 1. An example of ICI's advertising, 1944–45.

(Reproduced from *Fertilizer Journal*, 30 August 1944. Photograph courtesy of Rural History Centre, University of Reading.)

and artificial fertilizers came to pollute its innocent peace', considering these books 'a real hindrance to reform'. Nevertheless, in a letter to C. S. Orwin he expressed his belief that the organic school's concern about the effects of industrialized farming on rural workers was 'an argument worth dealing with'. Orwin himself referred to the organicists' phrase 'a healthy race of people [fed] on healthy crops grown on healthy soil' as a cliché which was frequently heard during the war, and he devoted a section of *Problems of the Countryside* to demolishing the organic view of agriculture and its role in rural life. Referring to those who claimed that rural life was spiritually beneficial, he wrote: 'This insistence on spiritual values is associated, sometimes, with a school of thought, a good deal in evidence at the present time, which makes the welfare of the land its first object rather than the welfare of the human beings upon it'.[33]

Even after the passing of the Agriculture Act, which one would have considered a clear victory for the orthodox school, it was still felt necessary to discredit the organicists. Dr William Ogg, the Director of Rothamsted, spoke in the late summer of 1947 about 'virulent and unprovoked attacks' on the practice of using fertilizers, going to considerable lengths to take apart the organic school's arguments and, either dishonestly or mistakenly, presenting Rudolf Steiner's ideas as those of the organic school as a whole. Two years later, J. A. Scott Watson wrote of 'a wave of mysticism about soil fertility [and] the supposed deleterious effects of "chemical" fertilizers'.[34] Defenders of progressive orthodoxy evidently found the organic movement impossible to ignore.

II

The organic movement has always believed the standard of health to be inseparable from diet and the way that food is grown. In 1939 Sir Albert Howard and Sir Robert McCarrison were guest speakers in Crewe when the Cheshire doctors' *Medical Testament* on farming, nutrition and health was launched.[35] We have already noted that Mary Langman believed McCarrison's work to have been completely ignored, and it is now time to dispel that myth. Even if we discount the innumerable honours which he received world-wide and concentrate on what happened after he returned to England in 1935, the view that he was ignored cannot be sustained, as a look at the *British Medical Journal* (*BMJ*) for the mid- and late 1930s demonstrates. It should also be borne in mind that the issue of food and health was one of widespread public interest in the 1930s, thanks to the research into malnutrition undertaken by, most notably, Dr George M'Gonigle, Medical Officer of Health for Stockton-on-Tees, and Sir John Boyd Orr.[36]

The *BMJ* noted McCarrison's retirement from India, saying that he had made valuable

[33] H. E. Dale, *Daniel Hall: pioneer in scientific agriculture* (1956), pp. 223, 225; Orwin, *Speed the plough*, p. 62, id., *Problems of the Countryside* (1945), p. 89. Orwin may well have had in mind Sir George Stapledon, whose major survey *The land: now and tomorrow* was published by Faber in 1935: see R. G. Stapledon, *Disraeli and the new age* (1943), pp. 55–6, and *The way of the land* (1943), pp. 61–73. Another likely target of Orwin's criticism was H. J. Massingham: see particularly *The tree of life* (1943).

[34] *Farmers Weekly*, 5 Sept. 1947, p. 28; *Agriculture* 54 (1947–8), pp. 344–54, and 55 (1948–9), p. 508.

[35] *The Medical Testament* is re-printed in Picton, *Thoughts*, pp. 22–30. The *Testament* was produced by the Local Medical and Panel Committees of Cheshire, inspired by Picton, a GP at Holmes Chapel. It suggested that the medical profession should investigate the links between soil fertility, the vitality of plants, food quality and human health if it were to succeed in preventing disease.

[36] See John Boyd Orr, *Food, health and income* (1936) and Madeleine Mayhew, 'The 1930s nutrition controversy', *J. Contemporary History* 23 (1988), pp. 445–64.

contributions to medical knowledge of the role played by nutrition in preventive medicine. Early the next year McCarrison gave the Cantor Lectures on 'Nutrition and national health', which the *BMJ* summarized at considerable length. In July he opened the discussion at the Nutrition Section when the BMA held its annual meeting at Oxford, and his speech, on 'Nutrition in health and disease', was printed in full in the *BMJ* as the lead story. On 19 November 1936 he gave the Lloyd Roberts Lecture at the Medical Society, and a few days later was addressing MPs at the House of Commons.[37]

The *Medical Testament*, one of the most important documents in organic history, aroused considerable interest. The *BMJ Supplement* for 15 April 1939 printed it in full, and the journal itself summarized it and commended it 'to the serious notice of the profession and to those responsible for the public health'. This was only the beginning of the coverage given to the *Testament*: correspondence about its claims and its implications continued right through to September. A good deal of this correspondence was supplied by those directly involved with the organic cause, such as Howard, Dr Lionel Picton, and the market gardener Roy Wilson, but letters of support came from several correspondents, including the TB Officer for the London borough of West Ham. One letter came from a Dr R. R. Bomford of New York, who insisted that Howard's views were unproven and that doctors should not take sides over agricultural methods; but he did agree with the *Medical Testament's* analysis of the problems facing doctors.[38]

It is true that McCarrison was not offered any significant post during the war, and Hugh Sinclair, in his obituary of McCarrison in *Nature*, says that McCarrison's work was criticized by some of his scientific colleagues and that he was more highly appreciated abroad than in Britain. But when Lord Linlithgow, chairman of the Royal Commission on Agriculture, visited India in 1926 he made sure he saw McCarrison's work, believing it to be important.[39]

McCarrison's study of the thyroid was also noted at about that time by two important figures in the early organic movement, who became professional friends with McCarrison as a result. These were George Scott Williamson and Innes Pearse, founder members of the Soil Association, who in 1926 established in Peckham the family health club which a decade later developed into the Pioneer Health Centre, an ambitious experiment in preventive social medicine, whose food was supplied by an organic farm a few miles away at Bromley Common. The Peckham experiment was an integral part of the early organic movement, and one which received a lot of attention. While they were trying to raise support for a purpose-built centre, Scott Williamson and Pearse enjoyed the encouragement of A. D. Lindsay, the Master of Balliol College, who invited them to stay at the Master's Lodge and wrote one of the prefaces to their book *The Case for Action*; the other was by Lord Moynihan of the Royal College of Surgeons. A year or so after the Centre opened it was the subject of a film in the 'March

[37] *British Medical Journal* [*BMJ*], 22 June 1935, p. 1274; 29 Feb. 1936, pp. 427–30; 1 Aug. 1936, pp. 250–51; 26 Sept. 1936, pp. 611–15; 28 Nov. 1936, pp. 1099–1100; 5 Dec. 1936, p. 1175.

[38] *BMJ Supplement*, 15 Apr. 1939, pp. 157–59. *BMJ*, 15 Apr. 1939, p. 784; 29 Apr. 1939, p. 895; 6 May 1939, p 951; 13 May 1939, p. 1004; 20 May 1939, p. 1056; 27 May 1939, pp. 1106–07; 15 July 1939, pp. 140–42; 22 July 1939, p. 197; 5 Aug. 1939, p. 311; 19 Aug. 1939, p. 425; 9 Sept. 1939, p. 585. Bomford may have been related to the Bomfords of Worcestershire, agricultural engineers, who favoured the orthodox approach to farming.

[39] *Nature* 187 (1960), pp. 195–96.

of Time' series, and Howard Marshall presented a BBC radio documentary on it, 'Health at a shilling a week'.[40]

The Centre was forced to close during the war, but a book about it, published in 1943, sold 50,000 copies in five years. It re-opened in 1946 and Dr Kenneth Barlow recorded meeting at Peckham both the Director of Australia's Federal Health Services and India's Minister of Health. Only to the extent that the Pioneer Health Centre's example was not followed by the new National Health Service can it be maintained that it was ignored. In the ten years that it was open, the Centre attracted an impressive amount of favourable publicity. A doctor called Harry Roberts reviewed one of its reports, *Biologists in Search of Material*, in the *New Statesman*, saying that the Centre was carrying out important research.[41]

Given the number and complexity of the variables involved, it is extremely difficult to carry out a series of experiments which might prove the beneficial effects of organically-grown food on human health; hence the importance which the organicists attached to evidence drawn from communities still untouched by western diet. While McCarrison had concentrated on Indian tribesmen, and particularly the Hunzas, the American dental scientist Weston A. Price travelled the world studying the jaw formation and teeth to be found in a wide range of remote societies. He believed that the quality of the dental arch indicated the quality of the total constitutional development, and concluded from his researches that communities could remain free of many physical defects if they followed traditional patterns of cultivation and diet.[42]

Price's work influenced the British organic movement and drew support from perhaps the most distinguished of all British dental scientists, Sir Norman Bennett, President of the British Dental Association in 1930, its jubilee year. In November 1938 Bennett delivered an erudite and wide-ranging lecture at Bristol University, 'Survey of the conditions associated with immunity and susceptibility to dental caries', concluding that diet is an influence on the incidence of caries, and arguing that fiscal action must be undertaken to make healthy foodstuffs cheaper.[43]

During the war the government instituted a committee on the dental profession, which was chaired by Lord Teviot, later a founder member of the Soil Association and its President from 1946 until 1950. When in 1944 Bennett spoke at the Food Education Society on theories of dental disease, it was Teviot who introduced him. Two years later the *British Dental Journal* (*BDJ*) noted the establishment of the Soil Association, and referred to Bennett as the dental expert to the Association's Founders' Committee. A letter from the dentist Everard Turner in the autumn of 1946 announced that the membership list was now open, and that Bennett was urging dentists to join.[44]

Turner had begun to present the organic case in the *BDJ* in 1944, when he wrote a letter,

[40] On the Pioneer Health Centre see Innes H. Pearse and G. Scott Williamson, *The Case for Action* (1931); Pearse and Crocker, *Peckham experiment* and John Comerford, *Health the Unknown* (1947). Howard Marshall's documentary can be found in *The Listener*, 13 Jan. 1937, pp. 51–54.

[41] The book was Pearse and Crocker, *Peckham experiment*. Barlow's memories are recorded on p. 149 of an unpublished typescript in the author's possession; internal evidence suggests that it was written in the 1950s. For Roberts's review, see *New Statesman*, 11 June 1938, pp. 984–85.

[42] Weston A. Price, *Nutrition and physical degeneration* (rev. edn, 1945).

[43] *British Dental Journal* (hereafter *BDJ*), 15 Feb. 1939, pp. 193–210.

[44] *BDJ* 19 May 1944, p. 279; 21 June 1946, p. 428; 4 Oct. 1946, p. 232.

'Soil fertility and dental caries', about Lady Eve Balfour's book *The Living Soil.* There were various responses in support, including a short piece by Bennett, and Balfour's book was later reviewed anonymously, a couple of years after its publication. In June 1947 Turner gave a paper, 'Nutrition and dental health', at the British Dental Association's Annual Meeting in Bournemouth, but the opening address was given by someone who was not a dentist at all: Sir Albert Howard, who, a few months before his death, spoke on 'How to avoid a famine of quality'. Howard's prominence on this occasion is another strong piece of evidence that the organic case was given a generous hearing.[45]

III

We saw earlier that Harry Roberts wrote favourably about the work of the Pioneer Health Centre in the pages of the *New Statesman.* The fact that there was support for the organic movement in that journal is interesting , since the movement was at that time chiefly associated with right-wing politics, sometimes of a fairly extreme kind.[46] But a study of the *New Statesman* indicates that this left-wing journal was happy to give the organic school sympathetic coverage.

For instance, Viscount Lymington's *Famine in England,* one of the most right-wing of all the organic books, was reviewed by R. A. Unwin; he warned that it would offend the sensibilities of *New Statesman* readers but said that this would be a pity, since it deserved to be widely read for the wise things it had to say about agricultural policy. Similarly, Geoffrey Trease favourably reviewed *The Story of a Norfolk Farm* by the Mosleyite Henry Williamson, admiring the courage of Williamson's enterprise. In 1946 Hugh Broadbridge reviewed Friend Sykes's book *Humus and the Farmer,* saying that it should be required reading for the Ministry of Agriculture, that it was intelligent and profound, and that the humus school deserved a fair hearing.[47]

Many other organic texts were given favourable reviews, thanks to the established presence in the *New Statesman* of Laurence Easterbrook. Although agriculturalists like Hall and Orwin contributed occasionally, Easterbrook was the most frequent writer on agricultural topics during the period from 1935 to 1945. Not only did he review organic classics by Robert Elliot, Edward Faulkner, Howard and Stapledon – he expressed the wish that Stapledon should be appointed Minister for Rural Reconstruction – but he wrote some substantial feature articles. In response to Neville Chamberlain's speech on agricultural policy at Kettering in July 1938, he produced, between July and November that year, a nine-part series which presented a comprehensive overview of the state of British farming. This was followed in December by a piece called 'Marrying health to agriculture', which advocated the revival of agriculture through concentrating on protective foods – a favourite theme of the organic school. Easterbrook's presence in the *New Statesman* and the *News Chronicle,* and his role as the Ministry of Agriculture's

[45] *BDJ,* 15 Sept. 1944, pp. 178–79; 20 Oct. 1944, p. 239; 3 Nov. 1944, p. 261; 17 Nov. 1944, p. 293; 5 Jan. 1945, pp. 7–8; 5 Oct. 1945, p. 204; 18 July 1947, pp. 30–37. *Soil and Health,* Autumn 1947, pp. 147–53.

[46] On the connection between the organic school and radical right-wing politics see Conford, *Origins,* pp. 146–54; Josef Craven, '"Health, wholeness, holiness": radical right and fascist attitudes to the British countryside, 1918–1939' (M.Phil. thesis, University of Birmingham, 1993), Richard Griffiths, *Fellow travellers of the Right* (1983), pp. 143–44, 317–29; G. C. Webber, *The ideology of the British right, 1918–1939* (1986), pp. 57–68, 125, 131, 146–65; Patrick Wright, *The village that died for England* (1996), pp. 150–202.

[47] *New Statesman,* 17 Sept. 1938, p. 428; 22 Feb. 1941, p. 194; 15 June 1946, p. 435.

Press Officer during the early stages of the war, demonstrate that the organic school enjoyed a wide range of contacts.[48]

If we turn to the important medium of radio, we find that the organicists were able to propagate their views through broadcasting. A study of *The Listener* demonstrates that between 1936 and 1948 the following members of the organic school spoke on the BBC: Adrian Bell, Laurence Easterbrook, Sir Albert Howard, Jorian Jenks, Lord Portsmouth (formerly Viscount Lymington), Sir George Stapledon, Henry Warren and Henry Williamson. In addition, two figures closely associated with the movement spoke on religious topics: these were Canon V. A. Demant, who had a five-part series in the summer of 1946, and Maurice Reckitt, who gave talks during the war on Christianity and social issues. Laurence Easterbrook spoke several times, on wartime agricultural issues and the Scott *Report*; Henry Williamson gave a four-part series in 1938 on his Norfolk farm; and Portsmouth spoke four times between July 1947 and July 1948 on the future of rural life. Providing an opposing point of view to one of his talks was the landowner H. D. Walston, whose son Oliver is today a well-known East Anglian arable farmer. Other criticism came from B. A. Keen of Rothamsted Experimental Station in a talk on 'Fertility in the Garden'. Paying an oblique tribute to the organicists' influence, he itemized their criticisms of artificial fertilizers but concluded reassuringly: ' – there really is no solid evidence for those beliefs'.[49]

IV

The organic school's influence can also be discerned in the *Report of the Committee on Land Utilisation in Rural Areas*, chaired by Lord Justice Scott and generally referred to as the *Scott Report*, which was published in 1943. There were close links between Scott and the organicists. Although he did not join the Soil Association, preferring to maintain a display of judicial impartiality, its journal *Mother Earth* awarded him an obituary notice when he died in 1950; he had been strongly supportive of the Association and made suggestions about the wording of its Research Appeal. In 1945 he chaired an 'encounter' between agriculture and agri–industry, organized by the Council for the Church and Countryside, a body which was in effect a front for the organic movement.[50]

A number of features of the *Scott Report* were in harmony with the organic philosophy. The

[48] *New Statesman*, 11 Jan. 1936, pp. 56, 58; 7 Aug. 1943, p. 92; 7 Apr. 1945, pp. 229–30; 27 Oct 1945, p. 285; 16 July 1938, pp. 105–6; 30 July 1938, pp. 181–83; 13 Aug. 1938, pp. 243–44; 27 Aug. 1938, pp. 307–8; 3 Sept. 1938, p. 342; 17 Sept. 1938, pp. 409–10; 8 Oct. 1938, pp. 522–23; 22 Oct. 1938, pp. 602–04; 19 Nov. 1938, pp. 822–23; 17 Dec. 1938, pp. 1040–42.

[49] *The Listener*, 18 May 1944, pp. 552–53; 14 Dec. 1939, p. 1164; 2 May 1946, pp. 573–74; 13 Aug. 1942, p. 216; 29 Dec. 1938, p. 1395; 31 July 1947, pp. 173–74; 7 Aug. 1947, pp. 215–16; 14 Aug. 1947, pp. 255–56; 24 June 1948, pp. 993-94; 1 July 1948, pp. 11–12; 25 Mar. 1936, p. 566; 29 Jan. 1942, pp. 149–50; 1 Sept. 1938, pp. 439–40; 8 Sept. 1938, pp. 497–98; 15 Sept. 1938, pp. 559–60; 22 Sept. 1938, pp. 609–10; 1 Oct. 1942, pp. 434–45; 31 Aug. 1944, pp. 240–41; 11 July 1946, pp. 50–51; 18 July 1946, pp. 82–3; 25 July 1946, pp. 114–15; 1 Aug. 1946, pp. 148–49; 8 Aug. 1946, pp. 182–83; 8 Nov. 1945, p. 531.

[50] Lord Justice Scott, *Report of the committee on land utilisation in rural areas* (HMSO, 1943); *Mother Earth*, Summer 1950, p. 7; *Encounter: Agri-culture or Agri–industry* (Council for the Church and Countryside, 1946). On the Council for the Church and Countryside, see Conford, *Origins*, pp. 201–04, and R. J. Moore-Colyer, 'Rolf Gardiner, English patriot and the Council for the Church and Countryside', *AgHR* 49 (2001), pp. 187–209.

Report took it as axiomatic that 'there is an innate love of nature deeply implanted in the heart of man', and it related farming to health, determined that there must be no recurrence of pre-war malnutrition. It assumed 'the continuance and revival of the traditional mixed character of British farming' at a time when most agriculturalists were advocating increased specialization, and argued that farming, even when not economically viable, was the best way to preserve the countryside. Farmers and foresters were unlike industrial workers; they were the nation's landscape gardeners. The report pointed out the potential dangers of pollution and of the clash between urban and rural mentalities. Organic witnesses to the Committee included Sir George Stapledon and Roy Wilson, with Rolf Gardiner and Dr Kenneth Barlow submitting written evidence.[51]

Professor S. R. Dennison's minority report highlights the influence of the organic outlook on the majority report, since it expresses what I have elsewhere termed the 'orthodox' view of the course British agriculture should take. Dennison's arguments strongly resemble those which had been expressed during the previous fifteen years by the organic school's bugbears Hall, Orwin, Astor and Rowntree, and it is clear that he took his opponents' views seriously enough to feel that they required refuting. He took the line that a prosperous agriculture needed an efficiency measured in terms of output per worker, and that Britain should obtain food by trade and reduce its agricultural population, since 'the idea of a congealed economic and social structure is, indeed, essentially medieval'.[52]

It has been said that the Scott Report might more accurately be named the Stamp Report, after its Vice-Chairman Dr Dudley Stamp, and it is worth noting in this connection that in February 1954 Stamp gave the third Albert Howard Memorial Lecture, under the auspices of the Soil Association.[53] What is interesting about the Scott Report is the extent to which it favoured an approach to rural issues compatible with the organic school's ideas, while marginalizing the proposed policies which, within five years, would be enshrined in far-reaching legislation. Again, the organic movement's considerable influence was unable to affect government policy.

V

Finally, we can examine an occasion which might at first sight seem a long way from the concerns of agriculture: Archbishop Temple's Malvern Conference of 1941 on 'The life of the church and the life of society'. It is difficult to imagine today that an Anglican conference could arouse widespread interest, but such was the case; wartime concern about social reconstruction was no doubt one reason, and Temple's own personal and intellectual stature another. Of the ten documents presented to the conference, no fewer than five were by supporters of the organic movement: T. S. Eliot, who as director of Faber and Faber encouraged publication of books on organic cultivation; John Middleton Murry, who ran an East Anglian farming community; Maurice Reckitt, who edited the pro-organic journal *Christendom* and was on the editorial board of the *New English Weekly*; Canon V. A. Demant, a colleague of Eliot, Reckitt and Mairet in the

[51] Scott, *Report*, pp. v–vi, 46, 47, 69.

[52] On the 'orthodox' school of thought in the 1930s and '40s, see Conford, *Origins*, pp. 26–43. Scott, *Report*, p. 104.

[53] David Matless, *Landscape and Englishness* (1998), pp. 220–21; *Mother Earth*, April 1954, pp. 15–20.

Chandos Group; and Dr W. G. Peck, a prominent member of the Christendom Group, whose son David was also active in the organic cause.[54]

Peck and Demant in particular referred to ecological issues. The former spoke of the disturbed balance between town and country, of the destruction of the agricultural community and the 'rapacious industrial methods of securing food supplies from other lands'. Demant reminded the delegates of humanity's organic dependence on the natural world, and urged a 'respectful culture of the earth [...]. We cannot go on subduing the earth unless we are allowing it to be replenished.' For the nation to rely on distant lands for its food supply was dangerous and parasitic.[55]

The Conference's conclusions were published in pamphlet form, and two of the paragraphs dealt with agriculture's role in society, demonstrating a distinctly organic outlook:

> ... we must recover reverence for the earth and its resources, treating it no longer as a reservoir of potential wealth to be exploited, but as a storehouse of divine bounty on which we utterly depend. This will carry with it a deliberate revival of agriculture, both by securing to the agricultural labourer good wages and to the farmer a secure and just price. We regard this as indispensable to the true balance of the national life. The restoration of agriculture must be utilised for the revival of true community, which is possible in a village as it is not in great cities.[56]

Martin J. Wiener has argued that the Church of England remained 'a reservoir of rural romanticism' largely because of the Christendom Group's influence on the Malvern Conference. The publications containing the Malvern proceedings sold more than a million copies, and Temple's Penguin Special *Christianity and the Social Order*, published in the conference's aftermath, sold 140,000 copies. Its Appendix, 'A Suggested Programme', contained proposals for a land policy which entirely reflected the organic school's outlook, and Temple's appeal to the idea of a Natural Order was similarly consonant with the philosophy which underpinned organic practice.[57] Here, once more, we see that the early organic movement was very far from being in the wilderness.

VI

Why, then, did the organic school lose the battle? This is a question for future researchers to answer, but it is possible tentatively to suggest some reasons. Firstly, there was the contribution which artificial fertilizers made to increased productivity during the war, which would have

[54] York, Archbishop of (William Temple), *Malvern 1941: the life of the church and the order of society* (1941); *Malvern: the life of the church and the order of society* [booklet reprinting the Conference's findings] (1941). For the close links between the Christendom Group, the Chandos Group and the organic movement, see Conford, *Origins*, pp. 164–206. On the *New English Weekly*'s importance to the organic movement, see Philip Conford, 'A forum for organic husbandry: *The New English Weekly* and agricultural policy, 1939–1949', *AgHR* 46 (1998), pp. 197–210.

[55] Archbishop of York, *Malvern 1941*, pp. 31, 146 and 147.

[56] Archbishop of York, *Malvern: the life*, p. 12.

[57] Martin J. Wiener, *English culture and the decline of the industrial spirit, 1850–1980* (1992), pp. 117–18; William Temple, *Christianity and the social order* (1956), pp. 75–83.

placed the fertilizer manufacturers firmly on the moral high ground, since they had helped Britain survive the Nazi onslaught.

The commercial power of these companies was presumably another factor which ensured that they prevailed, and it would be interesting detective work to investigate the stages by which the fertilizer industry took such a hold on government policy. After the war, Tom Williams, the Minister for Agriculture, was assuring the industry that government policy would guarantee a demand for artificials.[58] In contrast, the organic movement had little money, and although this gave it a greater appearance of integrity, it would not have helped it to influence policy.

Thirdly, the war had meant that drastic, short-term action had to be taken, while the organicists were really more concerned about the longer-term future of agriculture and health provision – about issues of post-war reconstruction. But the end of the war brought economic crises and the threat of food shortages which provided a justification for continuing the wartime approach. Warnings about the possible long-term effects of pesticides and nitrogenous fertilizers, or about the impact of mechanization on rural life, could be dismissed as far-fetched doom-mongering. Furthermore, the chemical-industrial approach to farming was to prove, in its own terms, highly successful, with productivity continuing to increase rapidly in the post-war period and the United Kingdom gaining a greater degree of agricultural self-sufficiency during the period between the mid-1940s and mid-1950s, and thereafter, so that between 1935 and 1965 Britain reduced its dependence on imported foodstuffs by almost half.[59] Agricultural developments were taking a quite different path from that which the organicists had (somewhat unrealistically) hoped for, and the results were larger holdings and a declining agricultural workforce.

Despite the circumstances of the 1950s being much less propitious for their case, the supporters of organic methods persisted with their alternative approach; figures such as the Shropshire farmers Sam Mayall and Arthur Hollins, who were to influence a younger generation, committed themselves to the cause, and the Soil Association journal *Mother Earth*, under the editorship of Jorian Jenks, remained detailed, informative and prepared to argue its case scientifically. When the environmental movement began to emerge in the 1960s, criticizing the effects of intensive agriculture, the organicists were ready to remind the world of the case which had challenged and rattled the chemical establishment a quarter of a century earlier.[60]

[58] *Fertiliser J.*, 14 Aug. 1946, p. 525.

[59] See David Grigg, *English Agriculture* (1989), pp. 8–9, 73–77; Holderness, *British agriculture since 1945* (1985), pp. 103–10.

[60] On Mayall, see *Mother Earth*, Spring 1950, p. 12; Autumn 1950, p. 10; July 1952, pp. 15–18; July 1954, p. 2; Oct. 1964, pp. 320–26. On Hollins, see Arthur Hollins, *The farmer, the plough and the devil* (1984).

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Book Reviews

Britain and Ireland

N. M. HERBERT (ed.), *The Victoria history of the counties of England. A history of the county of Gloucestershire*, IX, *Bradley hundred. The Northleach area of the Cotswolds* (OUP for the Institute of Historical Research, 2001). xxiii + 298 pp. 42 plates; 22 figs. £85.

The part of Gloucestershire north-west of Northleach is one of the most attractive and interesting parts of the Cotswolds. Apart from the small market town of Northleach, it consists of rural parishes, almost entirely dependent upon farming. Stone quarrying was important, but only one major quarry remains open. The sixteen parish histories in this volume provide much useful detail on its agriculture.

Numerous Roman villa sites in the valleys indicate intensive early settlement. The Domesday Survey and evidence from the major ecclesiastical institutions which dominated the district, reveal the importance of arable farming during the early middle ages. Following the farming recession of the fourteenth century, it was sheep which became the major source of wealth. The numerous deserted hamlets and shrunken villages show the depopulation which followed the change to large-scale sheep farming. At the bishop of Worcester's manor of Withington in 1299, 56 tenants were recorded with some 400 acres of arable and there were at least five subsidiary hamlets. By *c.* 1500 the village was reduced, only one hamlet remained; the others were deserted or reduced to a single farmstead, and 27 tenements were in the lord's hands. In their place a flock of more than 1,000 sheep grazed.

The history of Northleach reflects the fortunes of the district, and is fully described in this volume. Northleach church provides an object lesson in the wealth which wool could bring. Its size and the splendour of its architecture reflect the prosperity of the woolmen, and their brass memorials are decorated with sheep, woolsacks and shepherds' crooks. Much of the wool was exported. The brass of Thomas Bush (died 1525) proudly announces that he was a merchant of the staple of Calais. Other merchant families such as the Midwinters and Forteys supplied wool to London, Calais, Flanders or to Italian merchants. It was John Fortey (died 1458) who paid for the rebuilding of the nave of the parish church.

Northleach was established as a new borough and market by Gloucester abbey in *c.* 1220, with the classic layout of a large market place, surrounded by burgage plots. It prospered during the middle ages and developed a sophisticated system of borough government. Later, it declined in importance, although in 1791 it was chosen by the prison reformer, Sir George Onesiphorus Paul to be the site of one of his new prisons. The building now houses the Cotswold Collection, a rural life museum.

The volume traces the transformation of the landscape brought about by enclosure. Parliamentary enclosure began at Farmington in 1714 when the two arable fields covering 1,730 acres, together with much of the downland, was enclosed. Another ten parishes were subject to parliamentary enclosure during the period 1760 to 1820. Enclosure was followed by the construction of the many miles of drystone walls which remain such a characteristic feature of the area. Amalgamation of farms followed, and arable farming once more became important, providing employment for many labourers. Several farms of 1,000 acres or larger were created, each employing 50 or more workers.

The light land of the Cotswolds was badly affected by the agricultural depression beginning in the 1870s. A consequence was that field sports became and remain a major provider of employment. Nonetheless, numerous manor houses bear witness to the continuing prosperity of the gentry families, although many have depended upon wealth created elsewhere. Interesting early views of many of the houses are included in this volume. Some estates remain, notably Lord Vestey's Stowell Park where the demesne farm comprises more than 4,000 acres, employing farm workers, gamekeepers, drystone wallers, forestry workers, sawmill operators and gardeners.

As well as providing the usual detailed account of all aspects of local history from manorial descents to church life, this well-illustrated volume is notable for the story of the dramatic swings in the fortunes of farmers on this part of the Cotswold Hills.

J. H. BETTEY
Pensford, Bristol

G. A. J. LOXTON, *Ston Easton perambulation. A history of a Somerset village on Mendip* (Snowdrop Publishing, Ston Easton, Bath, BA3 4DF, 2000). xiv + 185 pp. Illus. £14.95 incl. p&p.

Ston Easton is a small Somerset village on the north side of the Mendip Hills, on the road from Bristol to Shepton Mallet. It is notable for the fact that a remarkable quantity of documentary evidence survives concerning its economic history. Throughout the later middle ages the manor formed part of the widespread estates of the Augustinian abbey of Bruton, and then passed into the hands of the Hippisley family who retained possession until the twentieth century. This book has been written after many years of research on the Bruton abbey and Hippisley papers in the Somerset Record Office, and it contains much of interest for agricultural historians. There is considerably more information about latemedieval and early-modern land tenure and farming practice than is found in many local histories, with detailed analysis of manorial surveys, rentals, court rolls, bailiffs' accounts and inventories. The author's practical farming experience makes his comments on these subjects particularly interesting.

The Hippisleys arrived on the manor in 1525 when John Hippisley, yeoman, was granted a lease of the demesne and became rent collector for the abbot of Bruton. The family was thus well placed to obtain possession of the manor from the Crown in 1544. Thereafter the Hippisleys rose rapidly in wealth and status through dealings in monastic land and by profitable legal practice. During the eighteenth century they built an elegant mansion at Ston Easton, demolishing part of the village and diverting the main road in order to create a landscaped park. The carefully-preserved family archive provides a rich source for the history of the parish and manor, with much on changes in tenure, enclosures, amalgamation of farms and modern farming developments. These changes are illustrated by numerous maps, plans and illustrations. Many other aspects of the history of Ston Easton are explored in this well-researched study which is of more than local interest.

J. H. BETTEY
Pensford, Bristol

HAROLD FOX, *The evolution of the fishing village: landscape and society along the south Devon coast, 1086–1550* (Leicester Explorations in Local History 1, Leopard's Head Press, 2001). xviii + 208 pp. 6 tables; 15 illus; 11 figs. £13.50 from Explorations, Centre for English Local History, Marc Fitch Historical Institute, 5 Salisbury Road, Leicester LE1 7QR.

Writers on the history of British marine fisheries are often pilloried for ill-defined approaches, parochial romanticism, and ignorance of larger settings for their subject (as, for example, by R. Robinson and D. Starkey in Poul Holm *et al.* (eds) *The North Atlantic fisheries, 1100–1976: national perspectives on a common resource* (Esbjerg: Fiskerei- og Søfartsmuseets Forlag, 1996)). Harold Fox's study of medieval fishing settlements on the south Devon coast is a successful contribution to reversing this condition. In exemplary fashion, Fox integrates his own close archival and field research with the regional economic history laid out by especially Maryanne Kowaleski and Todd Gray. His findings will assist regional specialists in rural history and the broad study of medieval European fisheries, notably as the latter examines changing balances between subsistence and commercial, part- and full-time, and rural and urban fishers.

This is a work of local history. Fox wants to learn how a genre of place – the specialized fishing village – came into being along the coast between the Exe estuary and the Tamar. While some late medieval fishers there lived in port towns, most fishing activity was rural. Coastal and estuarine fishing sites known since Domesday Book had much increased in number by the thirteenth century, when lords of the land and foreshore mainly exacted cash charges, not fish, from the catchers. Fish from coastal Devon were distributed in large quantity well into the West Country interior and preserved fish likely shipped elsewhere through Exeter or other ports. Three unusual sources permit close observation of the rural fishery: early fifteenth century fish tithes at Woodbury were mainly paid by small holders fishing on a small scale; a 1578 rental from Kenton identifies more than fifty shoreline storage structures ('cellars') used by fishers in a parish without coastal dwellings; a series of especially fourteenth century customals from Stokenham depicts a well-organized collaborative mullet fishery based on shore cellars. These cellars were then replaced by (or rebuilt into) waterside housing during the late fifteenth and early sixteenth centuries, producing densely built, unplanned villages without agricultural resources.

Fox is reluctant to link the rise of fishing villages to a brief warmer interlude (*c.* 1450–1530) during the transition to the 'Little Ice Age' or to an ephemeral improvement in coastal security after official end of the French war in 1475. He rather connects settlement change to the strong late medieval economic growth of the entire southwestern region, arguing that industrial and commercial prosperity generated a now-classic mechanism of demographic increase. Notably surplus rural population found economic opportunity in full-time fishing to serve rising domestic consumption and an export demand earlier supplied more by town-based distant-water fishing.

Fox's explanation for appearance of specialized fishing

settlements in south Devon at the end of the middle ages is cogent but perhaps facile, resting in part on unarticulated and less than fully convincing assumptions about fishing as an ecological and economic activity. Fox too easily dismisses questions of technology and marine ecology I think integral to his study, largely limiting treatment of fish populations to an alphabetical tabulation of varieties certain texts list as purchased or consumed, and technical matters to brief mention of seines, fixed nets, weirs, and boats. Yet the habits and seasons of these creatures necessarily shape their availability to human capture and the various methods entail different capital and labour requirements and impacts on fish populations. A broad international literature treats uses and consequences of all fish-catching techniques, traditional and modern. Especially during a period of recognized climatic change, Nature must be considered a potential historical player, not just dead stage scenery. Nor are late medieval and early modern price relations of fish to be assumed *a priori*, for different varieties and degrees of freshness or preservation fit quite differently into consumption patterns based on both wealth and culture (taste).

Fox eventually compares full-time rural fishing in south Devon and elsewhere in late medieval England, so correcting the mistaken belief it had more recent origins. Fox could also have found support beyond England's horizons. Some of the Devon fishers' Norman and Breton competitors may have become full-time specialists by the late fourteenth century. On the Flemish coast, the fishing village of Walraversijde was established during a regional economic boom of the thirteenth century and moved to a new site – recently excavated and reconstructed – after shoreline changes in the fifteenth. Norwegian peasant fishers, who supplied nationally-significant commercial exports from seasonal huts throughout the high middle ages, established specialized settlements after 1450. Harold Fox's findings now belong with these. His work deserves careful reading and emulation.

RICHARD C. HOFFMANN
York University, Toronto

JAMES P. TOOMEY (ed.), *Records of Hanley Castle, Worcestershire, c. 1147–1547* (Worcestershire Historical Society, new ser. 18, 2001). xxxvii + 194 pp. 2 maps. £20 from Robin Whittaker, Worcestershire Record Office, County Hall, Spetchley Road, Worcester WR5 2NP.

As all medieval historians are aware, to find a real concentration of sources for a single person, family or settlement is relatively unusual. The manor of Hanley Castle, in the wooded part of Worcestershire, is one of these comparative rarities. The core of the material is the Lechmere collection at Worcestershire County Record Office, from which nearly three hundred deeds from the late thirteenth to the mid-sixteenth century and a small number of court rolls feature in this volume. This is supplemented by manorial accounts, Inquisitions Post Mortem and subsidy rolls from the Public Record Office, and deeds from other collections, notably the British Library. Dr Toomey's assiduous pursuit of Hanley documentation and this carefully edited calendar have put historians of medieval England from a variety of fields in his debt. The most immediate interest of this profuse collection, as Christopher Dyer notes in the general editor's preface, is as a source for the 'ordinary inhabitants' of this 'large and important parish', and as exemplification of many of the types of source for villages and villagers in this period. Although the documents assembled here are regrettably sparse for the period of colonization in the twelfth and thirteenth century, the story of Hanley's expansion and of the growth of its hamlets can still be told in outline from Domesday Book and from the evidence of deeds, placenames and topography. For the later centuries there is a much greater density of material, from which we may learn, for example, about the villagers and their families, their obligations to their lord (and, after the Black Death, the weakening of these), the location of their tenements and messuages, the local economy and land market.

But we can also learn about the lords of Hanley. As its name implies, there was a castle at Hanley, owned for most of this period first by the Clares, then the Despensers, then the earls of Warwick, and finally the Crown, and it was also the administrative centre for Malvern Chase. Indeed, a significant contribution to this collection is made by Hanley Hall, the estate of the hereditary chief foresters of Malvern, whose surviving archive came to the British Library, via the Lords Beauchamp, the new owners of both manor and office from 1479. (There is incidentally quite a lot more to be said about this change of ownership, some of it recounted in this reviewer's work.) As ever, the historian of the estate economy of the laity is frustrated by the lack of account series but it is possible to see from this collection how much can be learned all the same from the very full extents that sometimes accompany IPMs, from court rolls and from deeds, especially when, as in this instance, the occasional account survives. Sadly, however, there is only one from the high-farming phase and that, though full and informative, dates from immediately after the fall of the younger Despenser when the estate's economy may have been unusually affected by outside events. But the appetite is whetted by the editor's reference to a household account for 1409–10 when the Duke of York, a temporary owner, lived at Hanley, and to further material for the younger Despenser in the Exchequer Pipe Rolls and Memoranda Rolls.

If Dr Toomey's handling of history, historiography and source material is slightly less assured for the world of the owners of the castle and their associates than for that of their tenants, historians of both lords and tenants should take serious notice of this volume.

CHRISTINE CARPENTER
New Hall, Cambridge

KENNETH WITNEY (ed.), *The survey of Archbishop Pecham's Kentish manors, 1283–85* (Kent Records, 28, 2000). lxxxii + 390 pp. 2 maps. £35.

Publications of this nature were once commonplace. These days they are rare. The Kent Archaeological Society is to be congratulated on the publication of a volume that is in every respect a memorial to a vanishing civilization. Kenneth Witney, who died in 1999 and about whom Dr Thirsk writes movingly in her foreword, was a perfect representative of that civilization: the distinguished amateur. After a lifetime spent serving his country, Kenneth Witney devoted his retirement to the service of scholarship. The medieval history of the county where he lived was what this Oxford history graduate studied with a commitment of the heart as well as of the mind. He had begun exploring Kent as a schoolboy and 'from walking tirelessly over the countryside' he came to know and understand its landscape as well as he came to know and understood its historical records. His mastery is evident in a long introduction. Read him on mills, for example; note his succinct comments on the appropriateness of the timing of the Survey; give ear to a description of the Kentish system of land holding that begins by calling it so felicitously 'exceptionally disorderly'; and ponder at length the authoritative conclusion only a local historian of the Kenneth Witney sort is entitled to give having studied a document as complex and intractable as the Survey for years on end: Kent 'had progressed well beyond the rustic stereotype of mediaeval England to something altogether more enterprising and vital, better able to withstand the louring threats of overpopulation and of badly deteriorating weather'. The scholarship under review here is the very opposite of the often superficial and sometimes slovenly history professional historians are currently obliged to come up with. Their universities demand productivity; their careers require it. What history wants comes in a distant third. Mr Witney's edition of Archbishop Pecham's Survey is the opposite of all this. It is a meticulous labour of love not a meretricious demonstration of self-esteem. The love is both for history itself and for other historians, and not only local historians, as the Survey is an invaluable source for any historian interested in the medieval economy of England. Here is history as it ought to be, not because it has been impeccably and intelligently done, nor because it is enlightening and illuminating, but principally because it is altruistic; history, in other words, for the sake of others. The edition of the survey, we need to remind ourselves, is a translation: a laborious task undertaken for the benefit of historians who do not have Latin, which in this day and age includes almost all of us. There is also an exhaustive glossary, a helpful bibliography, and four useful appendices, including one of 'Significant Festivals and Saints' Days', and another of a contemporary digest of the Survey, 'The Lambeth Summaries', introduced by Dr Thirsk. The volume is a model of its kind, its near obsolete kind.

COLIN RICHMOND
Woodbridge, Suffolk

IAN KERSHAW and DAVID M. SMITH (eds), *The Bolton Priory compotus, 1286–1325, together with a priory account roll for 1377–1378* (Boydell Press, for the Yorkshire Archaeological Society Record Series, 154, 2000). viii + 636 pp. 2 maps. £50.

Since its publication in 1973, Ian Kershaw's book *Bolton Priory: the economy of a northern monastery, 1286–1325* has been a valuable resource for students of both monastic economies and the agrarian history of Yorkshire. Of the twelve Yorkshire houses of Augustinian canons, Bolton was the only one to be located in the Pennines, and in the management of its upland estates it adopted practices associated particularly with the Cistercians, who had secured control of great tracts of the Dales. The principal source for the 1973 book, the compotus of the priory for 1286–1325, has now been published, together with a stray account roll for 1377–78. The mammoth task of preparing the text for publication has been undertaken by Professor David Smith, incorporating the earlier work of Dr Tim Cooper.

A substantial introduction analyses the accounting system, and there are many useful footnotes. An index running to 66 pages gives access to a wealth of detail about the management of the arable demesnes, vaccaries, manors, mills and lead mines, and the consumption of the prior and the household. However, Professor Kershaw's book, with its summary of the compotus and invaluable tabulations of the data, remains an essential companion to the new publication.

The period covered by the compotus is of particular interest in the history of both the priory and the region. It may be no coincidence that a new account book was begun in 1286, the likely date of the appointment as prior of John of Laund, who held office until 1331. The previous two decades had been marked by factional struggles and managerial inadequacies. In 1286 the priory was heavily in debt. Its affairs were gradually turned round, and its net income improved by the judicious purchase

in 1300–07 of the manors of Appletreewick in Wharfedale and Holmpton in Holderness, the latter becoming an important supplier of wheat to the priory. During the same period £300 was spent on securing the appropriation of the church of Long Preston, an investment which was recouped within five years.

Then came the years of disaster: the heavy and incessant rains of 1315 and 1316, ruining the crops except on the limestone soils at Malham, and triggering a sheep murrain which killed two-thirds of the priory's 3,000 sheep; and the Scottish raids of May 1318 and September 1319, which left a trail of destruction close to the priory. In the latter year some at least of the canons took refuge in Skipton Castle, and soon afterwards the priory was taken into royal protection and its material management entrusted to two laymen. When however, in October 1320, the archbishop of York asked other Augustinian houses to provide temporary accommodation for eight canons, he blamed the cattle plague which had broken out in the region as well as the Scots. The cattle herd, 496 in 1314–15, had been reduced to 31. It is clear that in the years 1315–21 the weather and animal disease caused much more damage than did the Scots. The economy of the priory never again reached the level of 1314, as the account roll of 1377–78 helps to demonstrate.

The lay brothers of Bolton were not numerous, between two and five in the years of the compotus with similar numbers in the 1370s, but they had a key managerial role, in charge of granges and stock. When one died the priory must have sought an expert replacement, not just any devout muscleman. In 1298 four vaccaries with between 19 and 29 cows each were let to laymen, in return for fixed renders of butter and cheese. Two were still held in this way, delivering calves also, at the dissolution. This was a system used on the Fountains estates elsewhere in the Dales in the later middle ages.

The milk of ewes, as well as cows, was used for making cheese. Oats accounted for 80 per cent of the corn grown on the priory estates or collected in tithe. The canons may have eaten wheat, but they had to drink oats, as nearly all the malt came from that source. Ian Kershaw wonders if a 'lupus' killed in 1305–6 may actually have been a wild dog, but wolves were found at this period in the nearby Forest of Rossendale.

The editors and publishers are to be congratulated on the production of this splendid volume.

BERNARD JENNINGS
Kilham, East Yorkshire

DEREK VINCENT STERN (edited and with an introduction by CHRISTOPHER THORNTON), *A Hertfordshire demesne of Westminster Abbey: profits, productivity and weather* (University of Hertfordshire Press, 2000). lviii + 256 pp. 31 tables; 32 figs. £29.99.

This fascinating study of Westminster Abbey's medieval demesne farm at Kinsbourne (later Harpendenbury) in Hertfordshire has been published as a memorial to Derek Stern, who died in 1993 having suffered from Crohn's disease for over thirty years. It is based on Stern's much-cited 1978 University of London PhD dissertation, and we are indebted to Barbara Stern for seeking publication of the thesis after his death, and to Christopher Thornton for revising the thesis and assessing its many qualities in light of subsequent work in an excellent introduction to this volume.

As a detailed case study of a well-documented demesne and an exploration of the interplay between economy and environment in medieval farming, Stern's thesis was innovative when it was first written and remains relevant and valuable today. It will be of interest not only to medievalists, but to agricultural, climatic, and economic historians in general, particularly as the records on which it chiefly relies (manorial account rolls) are unrivalled by other sources for English agriculture prior to the nineteenth century. Readers of this journal will also be interested to note the close proximity of Kinsbourne to the modern agricultural experimental station at Rothamsted and hence the potential for comparing the results of medieval cultivation with the renowned cropping trials at Broadbalk field.

At the heart of Stern's work is an exploration of manorial accounts as a source of weather evidence and as a record of financial profit. After addressing the possibilities and problems of using account rolls in these ways, Stern garners a wide range of direct and indirect evidence for weather conditions at Kinsbourne between 1273 and 1397, and then presents and discusses his rigorous recalculations of the profits of arable and pastoral husbandry for the periods 1286–1307 (when seigniorial farming in general was at its height) and 1362–97 (during which time the economy turned against direct demesne cultivation). No subsequent historian has attempted to emulate this sort of analysis in such a comprehensive fashion, though it undoubtedly produces significant insights into a wide range of topics. These include the changing balance between customary and hired labour, the factors influencing the decision eventually to lease the demesne, and even the variability in the apple harvest and cider production. By providing much of the raw data on which this analysis is based, the book is also an invaluable resource. For example, the section on weather includes tables of 'proxy data' such as ploughing

dates, yield ratios and livestock mortality rates as well as a compilation of explicit meteorological references, while a complete year-by-year breakdown of the data on profitability forms one of three substantial appendices.

The pattern that emerges from Stern's overall profit index reveals two particularly striking features which run counter to the orthodox chronology of demesne cultivation: first, profits at Kinsbourne suffered a severe collapse in the early years of the fourteenth century; and second, the demesne was, on average, more profitable after the Black Death than it had been in the years 1286–1307. Trends in arable and pastoral productivity tell a similar tale, corn yields for instance falling around 1300 and recovering to a much higher level in the later fourteenth century. The factors which determined these unusual trends are considered in the conclusion. In Stern's view, environmental conditions certainly played a part, with productivity seemingly depressed by drought at the turn of the fourteenth century and later raised by the shedding of inferior arable land. Yet, despite his interest in unravelling the nature and impact of external factors such as climate, Stern was also sensitive to the role of management and administration in medieval agriculture, and he indicated that these may in fact have been of greater significance in the long term. For example, he linked the fall in profits in the early fourteenth century to administrative weakness and internal conflict at Westminster Abbey, and suggested that improvements in central administration help to explain the performance of Kinsbourne after the Black Death.

Stern was convinced that the traditional approach to medieval agriculture, based on aggregated information relating to a series of farms, should be complemented by intensive local studies. In the last twenty years, the extensive methodology has been taken to a new level with the trend for constructing quantitative 'national' overviews of certain aspects of demesne farming. But extensive and intensive approaches to this subject are illuminating in different ways and the need for a balance between them must not be overlooked. By 'probing for fundamental clues, rather than simply enumerating facts' (p. 7), and by relating local detail to broader issues, Stern's work provides an excellent example of a case study and the insights that can be gained from it.

DAVID STONE
Corpus Christi College, Oxford

JANE WHITTLE, *The development of agrarian capitalism. Land and labour in Norfolk, 1440–1580* (Clarendon Press, 2000). xii + 361 pp. 40 tables; 11 figs; 6 maps. £45.

This rigorously intelligent book re-examines a fundamental question in modern historical writing: what were the origins of capitalism? Its empirical core comprises an intensive study of the Norfolk manor of Hevingham Bishops between 1440 and 1580, supplemented by study of the wider region. The rural economy of late medieval Norfolk was unusually precocious, characterized by dense population, extensive wage dependency, significant rural industry, early commercialization, and a highly fluid land market. Combined with the quality of her own research, this extreme local context enables Jane Whittle to make a major intervention into debates over the origins of agrarian capitalism. Pre-eminently, this work is a study of grand historical processes rather than of a particular place. Although Norfolk historians will find this book rewarding, it owes its methodology and style to the austere traditions of historical sociology rather than the warm, localist humanism of W. G. Hoskins.

The book's ambitions are expressed in an opening chapter which surveys interpretations of the origins of capitalism. Whittle gradually nudges the reader towards her own post-Marxist perspective. In particular, she batters Robert Brenner's Marxist emphasis upon social conflict between lord and tenant, which Brenner presented as the primary cause of early capitalism. Instead, Whittle proposes 'a model in which peasant economy and society merges into capitalism'. For Whittle, the advantage of such a perspective lies in its recognition 'of the disjointed nature of development, the fact that elements such as types of labour and the relation of production to the market are not necessarily connected'. The emergence of agrarian capitalism is therefore presented as a silent, protracted and undramatic process, unconnected to local-political conflicts. In contrast to Brenner, manorial lords are seen as relatively weak. Instead, the trading and farming activities of wealthier villagers are interpreted as the motor which drove economic change.

Subsequent chapters examine manorialism, the land market, social differentiation, and the changing material circumstances of servants, labourers, and rural artisans. Outstanding aspects include a contextualized discussion of local enclosure disputes; an impressive discussion of serfdom; an important assessment of the relationship between migration, landlessness and social polarization; and a highly original discussion of the regulation of wage labour. Most impressive is the detailed reconstruction of the material circumstances of the rural poor, and the compelling evidence of their mid-sixteenth century immiseration. Finally, Whittle illuminates the potential for social and age conflict within the village, stemming from the concentration of wealth and power amongst landed, middle-aged tenants, at the expense of younger, poorer, migratory labourers.

This is, therefore, a bold work that represents economic history at its best. As such, it is worth arguing with.

Like all historians, Whittle is limited by her source material. This comprises a selection of manorial documents, taxation records, wills, parish registers, churchwardens' accounts and quarter sessions records. This deep but narrow source base enables the scrutiny of the internal life of the village but has less to say about the politics of lord/tenant relations. Although the manorial records illuminate the diminishing value of seigniorial dues, only rarely do they hint at the local-political arrangements which underpinned the manorial system. For one fleeting moment, however, such arrangements impinge upon Whittle's evidence. While discussing the inability of the lord of Hevingham Bishops to extract substantial entry fines from the tenantry, Whittle points to the inclusion of an agreement between the lord and tenants in the 1543 roll. This unusual document leads her to conclude that 'the tenants must have objected, and possibly taken their case to the royal courts'. Seigniorial weakness, presented elsewhere within the book as a product of impersonal economic change, seems therefore to result from social conflict. Yet Whittle does not pursue her insight. Although she passes comment upon the famously 'litigious nature' of the Norfolk commons, Whittle makes no use of the rich records of litigation between Norfolk tenants and their lords at the central courts. Had she done so, she would have found that the seigniorial interest was not quite the paper tiger that she describes. This was certainly apparent to the commons of early Tudor Norfolk. The most eloquent testimony to the Norfolk gentry's continuing enthusiasm for aggressive (and often effective) seigniorialism is to be found in the hostility shown by the 1549 rebels towards their local rulers, and in their proposals for the near-abolition of the manorial system. Although Whittle's book contextualizes the contradictions within rebel politics, its operating assumptions leave it unable to explain the powerful conflicts between gentry and commons within this region. After all, if manorialism really was so weak, why did Norfolk's rich farmers make common cause with the otherwise marginalized village poor against their superiors in 1549? For all its depth, this book does not fully persuade. Instead, it presents a strong case for one side in a continuing argument.

ANDY WOOD
University of East Anglia

L. A. BOTELHO (ed.), *Churchwardens' accounts of Cratfield, 1640–1660* (Suffolk Records Society, 42, 1999). xi + 177 pp. 1 table; 3 illus; 2 figs; 3 maps. £30.

One can never have enough churchwardens' accounts, although of editions like this there are too few. Those printed here cover the years from 1640 to 1660, from the eve of the Civil War to the restoration of Charles II and are the loose individual accounts of each of two wardens, rather than the more common collated summaries. Cratfield is a small parish in east Suffolk, a few miles west of modern Halesworth, comprising the village of Cratfield and several outlying greens characteristic of the county's wood-pasture region. This is cheese and pig country and, in times of scarcity, the parish was obliged to import grain for distribution to its poor as an extra to its own church fields, or to supplement the income of its poorer farmers, as in 1654 due to the 'cheapness of cheese and butter', or in 1656 due to 'the cheapness of comoditeyes'. Nevertheless, this was an independent, prosperous and yeomanly parish with a population between two and three hundred people, attenuated manorial lordship, and a diverse range of occupations. But, as in many parts of England there was also a large group of labouring poor, perhaps as many as fifty to seventy people, who had neither access to tiny acreages of smallholding, nor even to woodland resources other than occasional doles of firewood from the guildhall. Local governance was in the hands of the vestry under the leadership of its leading inhabitants. The Cratfield wardens were responsible not merely for the maintenance of the church, but for the management of the parish purse and the distribution of poor relief. Their accounts provide an especially full and clear view of the community during an important period of wider social, religious and political crisis.

In one respect parishes like Cratfield were independent, isolated and self-sustaining moral economies, practising elaborate patterns of care in the community. The family of Joseph Smith, poor through several generations, received money and cash loans in their 'truble', 'distres' or 'great extremity', but also did odd jobs to supplement their meagre incomes. Other poor were in their turn paid for simple medical care of the family. Engrossment of land and the development of a market-centred economy, Cratfield's engagement with the wider world, which accounted for its poor, was not within the warden's responsibilities, but the community's engagement with its region and the nation appear clearly in other ways. Poor relief rose markedly in the 1650s but Cratfield also continued to relieve those who crossed its borders, some with parish briefs or parliamentary certificates, all carrying sombre tales of fire, loss and destruction. In 1654–5 the two wardens relieved four Irish women and 20 children, 14 dispossessed Irish settlers, 23 Irish people with certificates and two Irish men and two women with briefs. Those with briefs and certificates received more, but one suspects that few went away empty-handed. Poverty never pressed so hard that the parish sought to forget its place in the world. Cratfield's world-view, whether commercially based or not, was parliamentarian and

moderately reformist in religion. In the aural calendar, bells rang for the king's restoration in 1660, annually on 5 November, 'powder treason day', and weekly on the day of an endowed sermon. The accounts are full of payments for maimed soldiers and other obligations which reveal the parish to have been ready to move beyond ordinary civil obligations. In 1645 the parish made up the rate for the Scots, approvingly called 'our well afected bretherin'.

Lynn Bothelo's introduction provides a concise summary of the economic, social, religious and political context of the accounts, and stands on its own as an essay on early-modern Cratfield. The volume contains a useful glossary, an appendix of biographical notes based on a full parish reconstitution, and separate indices of persons, places and subjects.

PHILIP MORGAN
Westminster College, Missouri

ROSS WORDIE (ed.), *Enclosure in Berkshire, 1485–1885* (Berkshire Record Society, 5, 2000). xxxvi + 250 pp. 3 maps. No price given.

As one who has long argued the need for detailed studies of the enclosure process at county level, it is hardly surprising that I should warmly welcome this addition to the slowly growing body of such literature. Though it is not quite the unique study which the general editor implies in his foreword, it is certainly an unusual and extremely valuable one. The scale is ambitious, covering the period from 1485 to 1885 for the whole of Berkshire and Dr Wordie has, inevitably, had to be selective. As he notes in his introduction, he has taken advantage of the existence of a number of major printed sources, notably a transcription of the 1634 glebe terriers for the county, the work of Beresford and Hurst on deserted villages, and Tate and Turner's surveys of parliamentary enclosures, to provide a framework upon which to hang the results of his own documentary searches. He has also, as he freely admits, based the volume largely on material from the Berkshire Record Office, with only limited exploitation of the resources of the Public Record Office. Nevertheless, the detail and coverage is impressive.

The introduction covers the definition of 'Berkshire' to be used in the volume, pointing to the difficulties in establishing a precise acreage upon which to base subsequent calculations of enclosed and open areas. It offers a detailed commentary on the problems of interpreting the various source materials, and the likely accuracy of the results drawn from them. There are brief comments on the validity of some of the academic controversies over enclosure. Finally, and perhaps most interestingly, Dr Wordie attempts to put detailed figures to the enclosure process for the county as a whole, breaking them down into different time-periods and dividing them between parliamentary and non-parliamentary means.

The main bulk of the volume consists of a parish-by-parish survey, laid out in standard format. Each parish begins with a comment on whether there was a medieval park or deserted village, has a statement on the enclosure situation as revealed by the 1634 glebe terrier and a comment on any parliamentary enclosure which affected it. Interspersed with these are sections covering any relevant documentation or other evidence which throws light on the open or enclosed status of the area during the intervening periods. There is a specific entry for any surviving records of non-parliamentary enclosure, and a conclusion which attempts an overall picture of the enclosure process in the parish concerned. Dr Wordie uses the opportunity to revise some of the estimates of parliamentary enclosure for Berkshire given by Tate and Turner, updating their record of the availability of awards, correcting some minor errors, and offering more accurate estimations of the acreages involved. He also takes care to distinguish between the total amount of land affected by the various acts and orders and the amount of open or common land which they actually enclosed, an issue which has often been the cause of confusion and dispute in studies of enclosure.

One can, of course, always demand more, or raise quibbles about the details of such a project. It seems odd that there is little reference to later glebe terriers, given the importance rightly accorded to those of 1634, and one wonders whether the maps and documentation associated with the Tithe Commutation Act of 1836 might have thrown light on the later situation. However, within the inevitable constraints imposed by the need to pack details of a whole county within a small volume, this presents a highly detailed and impressive account. Dr Wordie is to be congratulated on his achievement, and I would personally hope that it might encourage others to replicate such a survey elsewhere.

JOHN CHAPMAN
University of Portsmouth

WILLIAM ELLIS, *The country housewife's family companion (1750)* (with an introduction by Malcolm Thick) (Prospect Books, 2000). 420 pp. 2 illus. £30.00

This facsimile of a book published in 1750 has an informative introduction by historian Malcolm Thick (the introduction is available on-line on the publisher's web site at www.prospectbooks.co.uk, a site which also has other interesting material.) It is one of several facsimile editions of texts likely to be of interest to historians of agriculture, social life and food. As the introduction to the book points out, Ellis wrote in a rather breathless style, but as it is based on the personal experience of the

author as a farmer and trader over fifty years, it has a certain authority in spite of (or even because of) the style. Read this book, or at least browse in it, for explicit detail about eighteenth-century trade, agriculture and social life. However, there are valuable insights here into social position, food, work and consumption, and the book is as valuable for these as for the explicit detail.

There is a great deal about social position; sometimes this is explicit because Ellis carefully specifies whether he is addressing gentlemen, yeomen, farmers, labourers or servants. Sometimes it is implicit, such as in the commentary on many of the recipes. Writing about staple foods (bread, pies, fruit, meat, cheese and so on) is aimed at the whole of the population from gentlemen to labourers' wives. The different social groups are presented as eating the same kinds of dishes but a food hierarchy emerges from his comments. The better-off will be able to add to the basics (like puddings, pottage and so on) such extras as cream, eggs, dried fruit, spices, herbs and pepper. Apple puddings are regarded as an excellent staple food for farmers and labourers, but puddings with other fruit and spices (like gooseberries or plums) are appropriate for the better-off. He approves of oatmeal, which is portrayed as preserving 'the lives of millions of people in sound health'. And he approves of milk porridge which 'is much in use from the lord to the peasant'. On the other hand, he does not approve of the poorer sort substituting a 'tea breakfast' for porridge because this is both too expensive and 'unwholesome'. He does, however, expect the families of gentlemen and yeomen to have a 'tea breakfast' and recommends some breads and other food for this. Yet this is not just a conventional view of social distinction, with one sort of food appropriate for the rich and another for the poor. It is firmly rooted in a humane concern for the well-being of all levels of society, and especially those who have to do heavy manual work. There is the implication that, although there was a potential for everyone to have enough to eat, the household had to be properly managed and that farmers and labourers needed to be careful to get as much out of their food as possible, making small amounts of meat go a long way with vegetables and especially potatoes for example.

There are valuable descriptions of the use of various utensils in the kitchen and dairy but attitudes to consumption in general are implied. Ellis warns against buying staple foods in shops because he thinks these items over-priced. So it is better to keep pigs than buy bacon from a butcher; better to bake your own bread than buy from a baker. He also warns that you should not give your children or servants the opportunity of being corrupted by buying in a shop where there might be gossip.

LORNA SCAMMELL
University of Newcastle-upon-Tyne

M. E. TURNER, J. V. BECKETT and B. AFTON, *Farm production in England, 1700–1914* (OUP, 2001). xii + 295 pp. 34 tables; 33 figs. £45.

Michael Turner, John Beckett and Bethanie Afton (henceforth TBA) are among the most prolific and talented historians of English agriculture. No team was better qualified to tackle the sources that form the basis of *Farm production in England*, their second monograph in four years. That the dividend is so meagre this time is therefore both revealing and disappointing. TBA's hope, shared by many (including those master-historians E. L. Jones and E. J. T. Collins), was that an exhaustive study of surviving English farm records would produce enough data on crop yields, seeding rates, labour inputs, carcass weights, and so on, to 'say something positive about long-run change in farm production and output' (p. v). With the help of a 'substantial' grant from the Leverhulme Trust, TBA accordingly trolled the archives and constructed a sample of nearly one thousand farms of varying size and range. That sounds like a lot of farms and a lot of work, but in the end it was not enough.

The accounts used here include both those of estate and tenanted or owner-occupied farms. The sample is clearly non-random, and although every county in England is represented, in regional terms it is biased towards the south and the east. Much more troublesome, however, is the extreme sensitivity of so many of TBA's findings to the inclusion or exclusion of one or two observations. The database is simply too thin for robust generalizations about trends. Not even the staple of the historiography, corn yields, is immune; the inclusion of a single farm increases TBA's estimate of average yield per acre by 5 to 10 per cent between 1730s and 1770s (pp. 128–132). The estimates of carcass weights are even more inconclusive. In the case of sheep, including 'exceptionally large animals' in some years produced high dispersion around the mean and 'the concentration of sales from specific locations' largely influenced the trend. The average weight in the third quarter of the nineteenth century is dominated by sales from a Northumberland farm (pp. 184–5). The analysis of cattle weights produced another 'salutary exercise in how much we still do not know, and may never know, about some of the basic parameters' (p. 194). In this case different farms take turns in influencing the trend and it is impossible to control for breed or age. The authors had 2,236 pig carcass weights to work with, but here too 'outliers' (if, indeed, they are outliers) plague the analysis. The peaks in the mean weights of hogs and porkers during the French wars are 'illusory and formed entirely from sales from a farm in Swallowfield in Berkshire' (p. 204–5). And so on. Overall, such examples hardly inspire confidence in the results regarding trends in mean crop yields and carcass weights,

and TBA's candid commentaries on the figures and tables in Chapters two to six too often read like cautions against making too much of the figures. And it turns out that trying to infer the spread of techniques and process innovations from farm records is more frustrating still: such shifts are documented 'but not in a meaningful statistical way' (p. 228). References to breed were rarely given, for example, when animals were sold for slaughter (pp. 98–9). Nor are farm records much of a guide to movements in labour inputs and productivity (pp. 64–5).

Given all this uncertainty, TBA's interesting assessment of the timing of the English agricultural revolution owes more to traditional political arithmetic than to fresh, definitive output and productivity series. Even with information on crop yields and animal numbers, estimating output is problematic: in their absence precision is hopeless. TBA seek to salvage something from their data by producing a 'new index' of labour productivity for the 1750–1850 period (p. 227). However, two components of this index – Tony Wrigley's estimate of the rural population, and estimates of the aggregate wheat acreage by James Caird and the late Jim Holderness – are the stuff of old-fashioned political arithmetic. TBA's own contribution is an estimate of agricultural output proxied by farm record-based estimates of the trend in average wheat yields (net of seeding). Their finding that the real action was concentrated on the post-1800 period owes more to shifts in acreage and labour input than in yields. The much faster increase of England's population *c.* 1800–50 certainly implies accelerated productivity change on the land after *c.* 1800 (pp. 223–4), but this point owes little to TBA's farm records.

Farm production in England is a book that had to be written. Coming from such expert historians, it is useful though sobering testimony to the limitations of farm accounts as a systematic guide to aggregate trends.

CORMAC Ó GRÁDA
University College Dublin

JOHN E. ARCHER, *Social unrest and popular protest in England, 1780–1840* (CUP, 2000). vi + 110 pp. £19.95 (hbk); £7.95 (pbk).

The general editor of this series, prepared for the Economic History Society, could not have identified a more judicially-minded expert in the field than the author of this useful introductory synthesis aimed at students approaching the subject for the first time. He opens with an historiographical introduction, with some wise observations on sources and methods, and rightly attributes the growth of scholarly commitment to the topic to the seminal works of that 'triumvirate of British marxists', namely Eric Hobsbawm, George Rudé and above all Edward Thompson.

Archer divides the volume into chapters on agricultural, industrial, political, and finally policing protests; the last addresses a subject which many more recent authors of studies of protest have, in some senses perhaps ironically though legitimately, proceeded to. Archer argues that the intervention of authority, magistrates, constables (and later the expanding professional forces), special constables, and both the volunteer and professional armies, against rioters, was as likely to provoke greater disturbance as dispersals. Food riots, often said to be the most common form of mass mobilizations, at least before 1815, have a chapter exclusively devoted to them, another testimony to Thompson's massive legacy, in this case his legendary identification of the 'moral economy' of 1971 vintage, revisited at even greater length in 1991. Finally, Archer takes a brief look at whether cumulative developments constituting the well-established intensification of protest movements across this period at any time constituted a 'revolutionary challenge'. This chapter is by far the shortest in the book, and one might ask if under five pages suffice. Nevertheless, for a short work of synthesis, which does not eschew exploring however briefly the many debates which have developed between contributing historians, this comprises a packed agenda.

On occasion, Archer comes to some judgements on those debates. The attempt by a generation of economic historians to dispose of the classic Fabian argument – a thesis initially rooted more in considerable contemporary commentary than in archival evidence – of the dispossession and resultant poverty deriving from parliamentary enclosure, Archer concludes, proved in vain. Likewise, the so-called 'compartmentalist' school of historians, which perceived no overlaps between for example various categories of rioters, machine-breakers, trade unionists, and populist democratic activists, rightly gets short shrift. Archer tends to play down, rather than up, the seminal developments in the 1790s in the shadow of the French Revolution and the war against France, at least in the context of whether they constituted a watershed. If he is correct in identifying continuities, this does not exclude analytical perceptions of a watershed in the nature of protest, holistically experienced. For example, Archer exudes some sympathies to Thompson's identification of a revolutionary political dimension to the ostensible industrial orientation of Luddism in its classic phase, and is even more sympathetic to more recent identifications of strains of political protest with the Captain Swing quasi-insurrection of late 1830. Conversely, and very surprisingly, this volume is Linda Colley free; loyalism receives a brief mention in the context of the 'Church and King' riots in the early nineties, but there is no sustained mention of the populist loyalism

(or patriotism) she has portrayed as a key development during these decades.

On occasion, readers with a specialism in the subject might wonder at times if Archer's concentration might have wandered as he no doubt re-read the scores of secondary sources synthesized here. Some factual errors creep into most historical works, though one is surprised that the weekly government publication, extensively studied by Thompson as it contained transcripts of those anonymous threatening letters (for the discovery of their authors rewards were offered), is not the *Weekly* but the *London Gazette*. And, on occasion, this reader was forced to pause and say, did author x really (and on one occasion did I) say that, to find out on checking that a seemingly accidental misrepresentation of parts of an argument has occurred. Finally, given the numbers of volumes containing essays by different writers in this area, it seems rather otiose to reference the editor(s) of these volumes rather than the specific author.

ROGER WELLS
Canterbury Christ Church University College

WILLIAM COBBETT, *Rural rides* (edited by IAN DYCK) (Penguin, 2001). xxxiv + 525 pp. 2 maps. £8.99.

Rural rides is, arguably, Cobbett's most enduring legacy to posterity, despite the fact that he composed for publication around 30 million words. The first Penguin edition came out in 1967, and was reprinted eight times by 1985. It was edited by the famous Canadian literary figure, George Woodcock. This new edition is edited by a very appropriate historian, and relatively recent author of an important major study of Cobbett, namely *William Cobbett and rural popular culture* (1992). Professor Dyck essentially reiterates that volume's basic thesis in his 26 page introductory essay, illustrated with various quotes from a range of Cobbett's publications, notably his famed *Political register*, which appeared weekly between 1802 and his death in 1835. The various rides were first published spasmodically over several years in the 1820s in this principally political and polemical organ. Cobbett re-published them, as a book, in 1830. Woodcock wrote of Cobbett's 'great accounts of rural life', and if nobody could fault that description, a considerable amount of essentially descriptive material was non-too subtly used to underwrite Cobbett's ideological positions. For example, he held – with some justification – that the condition of the labouring masses was invariably better in woodland than cornland regions, though in the *Rides* he exaggerated woodlanders' visible superiority. But then, Cobbett's penchant for exaggeration is proverbial.

Dyck has also included the two rides omitted in Cobbett's consolidated volume, namely from Petersfield to Kensington, and from Kensington to East Everley, occupying 32 pages. In his note on the text, Dyck observes that it is unclear why they were left out in 1830. However, although the latter ride was dated 21 August 1826, it contained a short allusion to incendiarism, with the observation that while the press teemed with hostile reports of its secretive instigators, nobody bothered to enquire into their motives 'for ... they must have a motive'. Quintessentially, Cobbett insisted that arsonists' motives should be explored, and the 'grounds of such motive' removed. And, from 1828, Cobbett openly warned of an impending countryside revolt, which of course came to pass with the notorious Swing quasi-insurrection of 1830. Although Dyck observes that Cobbett's motives for excluding these rides are 'not clear', the assumption surely must be that the reference to incendiarism might prove problematic, as it was the topic's coverage in the *Register* of 11 December 1830 which led directly to his prosecution for seditious libel in the following year. This reviewer is a little unhappy at Dyck's presentation – in the introductory essay – of Cobbett going down to the south-east, 'taking his place among the village workers' as Swing erupted. This refers to Cobbett's truncated lecture tour to Kent and East Sussex between 10 and 26 October 1830. Whilst there had been some previous incendiarism and a few instances of the destruction of threshing machines in Kent, the principal mobilizations occurred after Cobbett's return to London, not commencing in East Sussex until 30 October. The fact that Cobbett did return, abandoning part of his intended itinerary, was his probable response to collapsing order in Kent, possibly in hopes too of pre-empting self-anticipated arrest. If so, the ruse succeeded.

Dyck additionally provides a list of Cobbett's principal writings, and a bibliography, including his published correspondence. This edition also contains a more substantial section of notes on the text than that edited by Woodcock, and some (mostly) brief details on the many contemporaries, friends, foes, and Cobbett's promiscuous range of individuals targeted in the text. Both categories are very helpful, and not just for readers unfamiliar with the details of the historical context. However, this reviewer was surprised to be informed that the third Earl of Egremont was a Whig, rather than a Tory paternalist, and an idiosyncratic one at that, who refused, in his capacity as Lord Lieutenant of Sussex, to elevate Anglican clergymen or Whig squires to the bench. His near neighbour, the fifth Duke of Richmond, was a Tory, though Dyck's emphasis on the Duke's hostility to parliamentary reform, to the exclusion of the fact that he was in Earl Grey's Cabinet which piloted through the 1832 Reform Act, is a little odd. The Acts attributed to the influence of William Sturges Bourne MP, were in fact the two of 1818–9. If the first of these

was designed to increase the powers of 'ratepayers' over vestries and their poor-law relief policies, its provision for plural voting was deliberately rigged to increase the influence of greater at the expense of lesser ratepayers. The second statute, as Dyck observes, promoted the appointment of salaried overseers of the poor, parochial officials whose cost-cutting *raison d'être* made them unpopular with claimants, and subjected to repetitive denigration in the pages of the *Register*. Though there are no examples in the *Rides*, there are a few well-deserved and archetypal Cobbettite swipes at Sturges Bourne himself.

ROGER WELLS
Canterbury Christ Church University College

F. M. L. THOMPSON, *Gentrification and the enterprise culture. Britain, 1780–1980* (OUP, 2001). vii + 200 pp. 3 tables. £25.

Through the 1980s and 1990s F. M. L. Thompson and W. D. Rubinstein sparred with each other across the pages of learned journals and books over the question of whether businessmen bought land and, if so, how much, where and why. Both contestants appeared to have vacated the ring through exhaustion rather than any obvious conclusion to the contest, or at least that was how it looked until Thompson's Ford Lectures, originally given at Oxford in 1994. No longer content simply to trade acres with Rubinstein, Thompson came out of his corner determined to take on all-comers, among them Martin Wiener, Correlli Barnett and Margaret Thatcher. Blaming the ills of the post-1870 British economy on the transfer of resources from business into land is, in Thompson's view, unhistorical, inaccurate and a misrepresentation of what actually happened.

The book opens with a wide-ranging discussion of contemporary and later views of the transfer of wealth from business to land. Thompson calls to his aid Defoe and Adam Smith, Cobden and Bright, as well as an array of more recent commentators, to fill in the background against which he wishes to paint in his aristocrats and businessmen. Chapter Two looks at the contribution of aristocrats to enterprise, and concludes that there was no single culture. Some men were frivolous and wasteful, others were entrepreneurial and forward thinking. Nor is this surprising. Next, in Chapter Three, Thompson moves to the question of entrepreneurs as aristocrats, and returns to the long running debate conducted with Rubinstein about who bought what and whether they were gentrified as a result. He proceeds to demonstrate that a great many fortunes were at least partially invested in real estate. Thompson turns in Chapter Four to the related question of what happened to businessmen who converted their hard-earned fortunes into landed estate. After a spirited critique of Wiener's viewpoint, including a discussion of what entrepreneurialism really was in the nineteenth century, Thompson concludes that families who transferred part or all of their fortunes into land showed 'no harmful effects on their immediate or longer-term entrepreneurial capacities'. Movement into land represented 'a badge of entrepreneurial success and symbol of the penetration of the upper class by cultivated businessmen'(p. 97). In turn that raises an additional question of what they did with their money apart from buying land. Were they like James Morrison, the draper, who left £4-£6 million and reputedly never gave away a penny in his life, or Sir Henry Tate, who founded a gallery as well as making Golden Syrup, but left rather less money at his death?

Thompson saves his strongest punches for Wiener's theory that businessmen who divorced themselves from their business to become gentrified landowners lost the will to make money, and that consequently the British economy was sacrificed on the altar of their landed ambitions. Of course businessmen enjoyed traditional gentry pursuits, notably foxhunting, golf, and horse-racing, but Thompson finds it impossible to decide whether the hunting Rothschilds and deer stalking Basses were more or less successful than the non-hunting, non-shooting William Lever and John Ellerman. In any case, some of those who were 'non-hearties' spent their time and money elsewhere, notably in art collecting where Thompson detects a pattern of investment which bore little relationship to the style of aristocrats and gentry. The real divide, he suggests, was between those who ostentatiously enjoyed themselves, and the Evangelical and dissenting businessmen who opposed all self-indulgence, but who have tended to be held up as good entrepreneurs by contrast with their self-indulgent brethren. In business terms the divide, he suggests, is mythical. Thompson also dissects Wiener's argument that whatever the cultural, religious and sporting divide within the business world, the unity of the group was created in the common educational experience of the public school which, however successful in educational and personal terms, had the unfortunate side effect of killing off the industrial spirit. Thompson argues that it was the professional classes who patronized the growing number of public schools and reformed grammar schools, and that only 20–25 per cent of business leaders had a public school education: consequently 'the capacity of the combined force of the classics and the public school ethos to kill off the industrial spirit has been much exaggerated' (p. 129). Thompson concludes that there were too few ex-public schoolboys in charge of businesses for them to influence the course of British business more generally. But of course it may just be that there were few leading businessmen because ex-public

schoolboys had taken their skills elsewhere, thus lending credence to Wiener's argument. Nevertheless, there is enough in this discussion for us to accept Thompson's conclusion that it is 'inherently absurd' to link economic decline in post-1870 Britain to the gentrification of businessmen. In his view, the real culprit has been government, and if so the public-school-educated cabinet ministers (the great majority in the twentieth century) were presumably responsible for 'dispensing, consciously or unconsciously, the anti-industrial prejudices they were supposed to have imbibed' (pp. 141–2).

The idea of a haemorrhage of talent from productive into unproductive employment, and with it the long term decline of British business, does not seem to Thompson to make sense. This should come as a great relief to any successful modern businessman concerned that the purchase of a country mansion will mean the end of moneymaking for him, and the certain collapse of his public-school educated son into indolence and despair. The British economy did not founder on the rocks of business-gentrification; on the other hand, the new super-rich come from the music world – Thompson cites Andrew Lloyd Webber and Paul McCartney – and football, so perhaps the entertainment industry and the Premiership should watch their backs!

J. V. BECKETT
University of Nottingham

RICHARD WILSON and ALAN MACKLEY, *Creating paradise. The building of the English country house, 1660–1880* (Hambledon and London, 2000). xviii + 428 pp. 21 tables; 134 illus; 5 figs. £25.

Richard Wilson and Alan Mackley's detailed study of the social and economic forces surrounding the building of the English country house between 1660 and 1880 provides a rich feast for historians of the countryside and the landed elite. The task they set themselves is vast and complex. The book covers entirely new houses, but also rebuildings, and deals with both extant houses and many long since demolished. It approaches the task from two directions: through a series of case studies of individual houses and areas with well-recorded histories, and a sample of all country house building in six geographically-dispersed English counties. After setting out the problems and methodologies, it covers the cultural and intellectual drives behind house building, highlighting both the Grand Tour and English country house visiting as vital stimuli to those who made the decision to build or rebuild and the designs they chose. Successive chapters then cover the changing relationship between the landowner and an embryonic architectural profession, and the general costs and control mechanisms of the construction process.

In an important chapter about the pattern of building, the authors show that there were three main periods of building activity nationally; from the later seventeenth century to 1730, from 1770 to 1800 and from 1850 to 1880. However regional patterns varied enormously. Northamptonshire saw the rebuilding of country seats at only one third of Suffolk's rate. Norfolk and Gloucestershire had a high rate of build in the late seventeenth and early eighteenth century, while Suffolk and Yorkshire were much more active in the later eighteenth century. Patterns varied also according to the size of landed estate, with owners of smaller and medium sized estates most active in the mid-nineteenth century. Most importantly, it was a rare thing for a landed family to build a house. Only one in ten heads of family did so, and on average only one house was started every year of the period in the six sample counties. In any given county there could be many successive years without a single new project being started. Most decisions to build were linked to individual family circumstances.

A chapter on the cost of the English country house follows, showing that houses invariably cost more than estimates and contracts allowed for, and were sometimes hugely in excess. Houses were always insured for far less than their cost, and the balance of expenditure between the house shell (case) and fittings and decorations was roughly half and half. The cost of building rose over the period, particularly in the eighteenth century, but the rise was much greater for the largest houses than for more modest gentry seats. On the basis of extrapolation from their sample, the authors estimate that national country house building and rebuilding during the period 1770–1800 absorbed £3.8m, as compared with Watt's estimate of £2.5m invested in cotton mills in 1797, and the estimated £2.15m cost of the first waves of canal building between 1755 and 1780. Gentry building works were an important, if random, local source of employment, with significant impact on trade nationally. The penultimate chapter uses a series of case studies from elite, middling, and smaller landowners to show that country house builders paid for their works in widely different ways. Building times varied enormously. The Earl of Carlisle at Castle Howard paid for his vast design from income over forty years of building, and his mausoleum was not completed until seven years after his death. Holkham was also built over a long period, largely from an increasing estate income. By contrast the Thelluson house near Doncaster was completed in two years, and fitted out in a further two in the 1840s. Most house builders either used windfall money from a dowry or inheritance, or judicious sales of land to finance their expenditure in addition to some part of estate income. Few were ruined by the process. In concluding, the authors point out how

important dynastic vision was in carrying through the building of an impressive country seat, and what a poor investment in economic terms it always was.

This book significantly deepens and our knowledge of country house building and revises existing ideas about the timing and dynastic processes involved. Additional light on patterns of building might have emerged from a comparison with more general indicators of the national building cycle, for instance those derived from the early land registry. The problems of gentry absence from the countryside and its relationship to building tends to be looked at as a late eighteenth-century phenomenon. However Bishop Wake's visitation returns for another six county sample show it was widespread *c.* 1710 – and even reports one gentry house being built which local people never expected to see occupied. The immense richness of the case studies means that inevitably they are occasionally over-compressed and a little breathless. Nevertheless, this important book is enjoyable to read, delightfully illustrated and produced, and combines substantial and innovative scholarship with a very reasonable purchase price.

JOHN BROAD
University of North London

J. R. WORDIE (ed.), *Agriculture and politics in England, 1815–1939* (Macmillan, 2000). vii + 260 pp. £45.

This collection of essays has as its organizing principle the gradual decline of the landed interest in the years after 1815. However, the range of subject matter is much wider than this might imply and the themes of the individual essays do not always fit easily with the overall plan. After an introduction by the editor, the book begins with two essays on the corn laws. Ross Wordie looks critically at just how significant they were in terms of the agricultural economy of early nineteenth century, and concludes that contemporaries may have been misled in their impressions of who suffered most from the retention of the duties after 1815. Michael J. Turner writes on Thomas Perronet Thompson, an independent radical thinker whose active years as a repealer in the mid-1830s helped to lay the foundation of the Anti-Corn Law League. Subsequent essays carry the book into other territory. Jeremy Burchardt looks at attempts to legislate for allotment provision between the Swing riots and the 1870s. He concludes that the contribution of legislation was negligible, but that this was because landowners considered allotment provision to be a moral duty rather than a legislative necessity. Presumably it could equally be argued (although Burchardt does not think so) that a landowning parliament simply did not want to be saddled with legislation which might tie its collective hands. David Martin examines the extent to which the landed interest gradually conceded ground during the nineteenth century, thereby helping to ensure its survival into the twentieth century.

The last three essays tackle issues in the post-1880 period. Ewen Green writes interestingly on how and why the Conservatives gradually abandoned the farmers in the years between 1880 and the First World War. Jonathan Brown shows how the National Farmers Union moved in the inter-war period from being a campaigning group looking to gain influence over government policy, to become an ally of the Ministry of Agriculture. Indeed, in 1938 Major Reginald Dorman-Smith, a recent President of the NFU, was appointed Minister of Agriculture. Finally, Clare Griffiths contributes a fascinating essay on visions of agriculture put forward by socialists in the inter-war period. She argues that most were 'remarkably conservative', with strong emphasis being placed on maintaining medium-sized farms and (much against expectation) no obvious desire to increase Whitehall interference.

Each of the essays is well worth reading, and I was particularly impressed by the contributions of Green and Griffiths, but the book has clearly had a chequered history. Originally planned as an all-Reading production, two of the contributors left the University before it was finished, one contributor had to be recruited from elsewhere, and one of Reading's leading agricultural historians proved to be 'too deeply committed to other ventures' to write his promised paper. But where the personnel come from is perhaps less important than the way the book does, or does not, work. In the end, despite Wordie's valiant effort in the introduction to pull the various themes together, this remains a book of loosely related essays rather than a series of clearly focused arguments addressing a particular issue within agricultural history.

J. V. BECKETT
University of Nottingham

ROGER J. P. KAIN and RICHARD R. OLIVER, *Historic parishes of England and Wales. An electronic map of boundaries before 1850 with a gazetteer and metadata* (History Data Service, UK Data Archive, University of Essex, 2001). 243 pp. £12.95.

Even if as agricultural historians we do not always have reason to map our data, I wonder if there are many of us who could or should map our data, or in fact have mapped them. And for how many has the map unit been the parish whether in a county study, regional study, or sub-county or sub regional study? My earliest work involved the distribution and density of parliamentary enclosure in Buckinghamshire, and thirty-some years ago just about the only user-friendly, off-the-shelf base

map available to me was one provided by the local authority in their planning department. If only electronic means had been available, if only digitization has been invented, if only I was thirty years younger and starting all again! But it is never too late, and behind the scenes in a number of places over the last several years enormous strides have been made to provide base maps that historians can use because they reflect the basic areal unit that we often employ. This is precisely what Kain and Oliver have provided. The boundaries now published roughly equate to 1851 census parishes and are derived from various sources, but principally the tithe maps and pre-Ordnance Survey large scale maps that are available. Apparently the tithe and parliamentary enclosure maps alone cover about 85 per cent of the ancient parishes of England and Wales. Technically the task accomplished has been enormous, not least in solving scaling and planimetric surveying differences between different maps. The bottom line is that employing the OS 1:63,360 New Series map sheet as the base, the authors have produced an electronic version of pre-1850 parish boundaries set within their geographic as distinct from registration counties, but including also townships and a variety of other local administrative areas. In total it covers over 18,000 places in England and Wales. A short review cannot do justice to the technical input to this database, but the substance of this particular book is a short introduction to the projects that culminated in the final database, and an abbreviated but full hard-copy index of the places on the electronic map. Instructions for acquiring the CD-ROMs of the maps can be found at hds.essex.ac.uk. Unfortunately, the CD-ROMs were not part of the review package and therefore cannot be evaluated here.

MICHAEL TURNER
University of Hull

CHRISTINE HALLAS, *In sickness and health. Askrigg Equitable, Benevolent, and Friendly Society, 1809–2000* (York: Sessions, 2000). xi + 103 pp. Illus. £6.50

When I was a young boy I was sometimes trusted to walk a couple of miles to pay my father's subscription to The Ancient Order of Loyal Shepherds. It always puzzled me why a coal miner should belong to an organization with such a strange name. It seemed archaic, but in fact both the national organizations and the numerous local friendly societies continued to play an important role long after Lloyd George introduced old-age pensions and health insurance and even after the creation of the National Health Service. One of the strengths of Christine Hallas's interesting account of the Askrigg Society is that it portrays a local institution that still flourishes and which plays an important role in the local community. The Society currently has 118 ordinary members and 67 honorary ones. The foundation of friendly societies in the eighteenth century, especially during the 1790s, and their expansion in the nineteenth century has attracted a lot of recent work, and rightly so, for by the end of the nineteenth century the combined membership stood at about 4 million. The organization of such societies, from the level of subscription to the amount of benefit payable at times of sickness and upon death, is generally well known.

The Askrigg Society was an efficiently-run organization that played an important part in sustaining its members during a period of rising population, followed by unemployment and considerable out-migration. In the 1890s the local vicar claimed that, since its inception, the Society had spent over £10,000 on benefits and not one of its members had ever had to claim poor relief (though Dr Hallas shows that his audience knew of at least one example to the contrary). But the Askrigg Society played a much wider role than the relief of poverty. Dr Hallas demonstrates that from the beginning the occupational profile of its membership has virtually mirrored that of the upper Wensleydale community. Labourers, servants and unskilled workers amounted to 37.4 per cent of new members in the second half of the nineteenth century, but the majority were farmers and skilled workers and a few were professionals. The reason for this wide membership becomes clear when we turn to the description of social activities. The Society met in the club room at the Kings Arms at Askrigg, where the landlord was a honorary member. In the early days the 'spending allowance' for alcohol at the quarterly meetings was seven shillings; as beer cost only a few pence per pint this was a generous allowance for the 40 or so attenders. The annual feast days rivalled the Whitsuntide Sunday school processions of the north of England as great communal events. Old photographs from other small towns and villages show that Askrigg was not alone in having a grand parade behind the Society's banner, led by the local band. The special church service was not to everyone's taste, for the Society frequently fined members 2*s.* 6*d.* for missing the sermon, but the dinner, afternoon sports and evening entertainment (including monologues, we are informed) marked these occasions, together with trips to the seaside, as the great events of the year. The role of the Society as a focus for local social life explains its continued popularity and the willingness of so many honorary members to pay their subscriptions.

DAVID HEY
University of Sheffield

PHILIP CONFORD, *The origins of the organic movement* (Edinburgh: Floris Books, 2001). 287 pp. £14.99

This will undoubtedly become the key work of reference for those wanting to discover more as to the origins of the organic movement. As the author explains, organic farming was not so much about rejection, as about the positive acceptance of what he calls 'the natural order and the intention to work with its laws'. Everything hinged on obeying 'the Rule of Return', whereby the fertility of the soil must be maintained by encouraging the presence of humus. Cultivation was designed to establish a virtuous circle. Humus created healthy crops, whose properly-composted remains replenished and enriched the soil content.

Although farming had always been organic, its self-conscious advocacy was not required until the mid-nineteenth century, and the promotion and industrial production of artificial fertilizers. Only then was there conscious need to warn of how monoculture, through dependence on such aids as chemical fertilizer, would lead to soil exhaustion and increased vulnerability to crop pests and diseases. Far from such warnings being heeded, an alliance of commerce, industry and government had provided, by the mid-twentieth century, both the will and capacity to transform the countryside. Conford traces how the most important strands of the organic school were brought together in a coherent philosophy by the 1920s. That school applauded the protection given to farmers from the vagaries of free trade, under the Agriculture Acts of 1947. It was, however, deeply unhappy as to the underlying assumption that efficiency was to be measured by output per man, as further encouraging a mechanistic view of the soil as an inert material, which could be goaded by chemical whips and spurs into ever-increasing productivity. As Conford perceives it, such calculations on the part of 'progressive agriculturalists' were the compelling force behind large-scale mechanization. My own memories of the Hampshire Downs in the early 1950s are of the pressures exerted by the labour force, and of the profits being made by farmers, that enabled them to invest in the combine harvester, corn pits, driers and silos. Whilst 'armchair' organicists might regret the brutal overturning of what they are pleased to see as 'a natural order', those I worked with were saddened that such qualitative improvements to their working lives had not come early enough to prevent the crippling injuries to their backs and bodies generally.

As President of the Soil Association, Jonathan Dimbleby writes, in a foreword, of how Philip Conford's 'exercise in historical retrieval' will provide a better understanding of the origins of what has become one of the most compelling campaigns – a cause whose time has finally appeared. There are accounts of Sir Albert Howard and the other servants of imperialism, who emphasized the relevance of 'traditional native culture' to industrial nations. A chapter highlights the contribution of Rudolf Steiner's biodynamic farming, where 'homeopathic doses of cow-horn based sprays' were claimed to enhance fertility. Chapters outline the organic movement in America, the remedies advocated by such fascist polemicists as the Earl of Portsmouth for tackling the perceived decline in rural life, and such ventures as Vitamin Cafes, the first health food restaurants. As an extension to his earlier paper in this *Review* (46 [1998], pp. 197–210), Conford illustrates how such advocacy as that of Philip Mairet and the *New English Weekly* was about much more than agriculture. It became a critique of the underlying assumptions and values of an industrial society and of the culture of secular modernity. It urged a re-think of Western civilization's relationship with the natural world, within a Christian context.

Philip Conford is anxious to emphasize both the scientific credentials of the organic movement in the sense of providing 'a coherent ecological philosophy', and the linkages between its earliest activities and the outcry prompted by the publication of Rachel Carson's *Silent spring* in 1963. As he writes, it would be completely wrong to conclude organicists were anti-science. From their perspective, it was the proponents of industrialized farmers who were not proper scientists, since they failed to see the ecological connections of natural phenomena. The task of 'true' science was to increase understanding of the laws which God had imposed on nature, and to learn to work with them for optimum productivity. Given such a professed outlook, it is surprising that there was so little contact between such pioneers of the concept of 'sustainability' and those, say, engaged in the science of ecology and nature conservation. Was it a case of deafness on the part of the world at large? More specifically, was there such competition between the different lobbies struggling for the ear of government and the public that each chose to ignore the message of the others, even where there was common cause to be made? Or did the muted force of the organic movement simply arise from its own inherent shortcomings?

Philip Conford recognizes that his wide-ranging and highly readable account provides no more than a much needed stimulus to further exploration of the organic movement, within the context of the presumptions and fortunes of other relevant interest-groups. As further anecdotal recollection, I was reminded of an incident that occurred shortly before the British publication of *Silent spring*. Lady Eve Balfour, the leading figure in the

Soil Association, pressed Kenneth Mellanby, the director of the Nature Conservancy's Monks Wood Experimental Station, to commend and publicize the Association's organic compost. It would have been quite a coup, given Mellanby's career in medical and agricultural research, founder principal of University College, Ibadan, Nigeria, and now head of the research station pioneering UK research on the side-effects of pesticides on wildlife. Out of curiosity, a chemist at Monks Wood analyzed some of the bags of compost left by Lady Balfour in Mellanby's office. They were found to consist of dried sewage-sludge. The concentration of lead and other 'nasties' was 'quite dangerous'. Any close association with the 'muck and magic' school would have added to the Conservancy's difficulties of convincing agricultural scientists of the credibility of its own scientific discoveries as to the environmental impacts of 'the chemical revolution' taking place on Britain's farms. Neither the Nature Conservancy nor the conservation movement generally could have any truck with 'muck and deceit'.

JOHN SHEAIL
Centre for Ecology and Hydrology, Monks Wood

JOHN MARTIN, *The development of modern agriculture. British farming since 1931* (Macmillan, 2000). xvii + 236 pp. 33 tables; 2 figs. £47.50.

The historian who ventures to survey the agriculture of the second half of the twentieth century at present is perhaps brave or foolhardy (and the same might be said of the one who reviews the result). Assessment of the period is at an early stage. Few books have been written. There is B. A. Holderness, *British agriculture since 1945* (1985), while Michael Tracy's study of government and agriculture in western Europe takes the story up to the late 1980s. Now John Martin dons the garb of the intrepid pioneer.

He at once strikes out on his own path. Where many would confine themselves to the years since the Second World War, John Martin begins his survey in 1931. The changes in government policy towards agriculture following the abandonment of free trade make this, he believes, the real turning point and the place at which we must start if we are to understand modern British agriculture. In tones not dissimilar from those of the historians in the 1960s and 1970s who started to look again at the Great Depression of the late nineteenth century, he argues for a reassessment of the 1930s. The portrayal of the decade as one of general agricultural depression does not stand up to closer scrutiny, he concludes.

The 1930s heralded an interventionist system of state assistance and protection (p. 23). From the Wheat Act and marketing boards through to the Common Agricultural Policy and the epidemics of BSE and foot and mouth, there is little in which the state has not been involved. The history of modern agriculture, therefore, must have the role of the state as a principal theme. It is not a simple story. There is much continuity, for example in the Ministry's broadly production-centred approach. But some of the elements of continuity are more apparent than real. Governments have continually talked of promoting an efficient agricultural industry, while at the same time trying to pursue other social, economic and fiscal ends that have not always been compatible. Alongside this there have major shifts in public – and political – attitudes and perceptions about farming and farmers. In the 1940s a grateful nation thought farming was good, a vital part of the economic and social fabric. Fifty years later, there is downright hostility to farmers from a large part of the urban-dominated political elite.

All of this is covered with admirable conciseness. Therein, however, lie the main problems with the book. At the beginning there are rather self-conscious claims to be challenging received views. At the end of it all, though, one is not quite sure just how much ground has been broken. We have been asked to reassess the 1930s. In scrutinizing the food production campaign of the Second World War John Martin gets into his stride, and finds wanting the line passed down to us from the official histories. Thereafter, however, he settles down to a less ambitious account, treading a path through the complexities of public policy, the restructuring of the agricultural industry, scientific and technological change, the emergence of the concerns for landscape and the environment. It is a good clear account, marred at times, unfortunately, by many failings in copy editing, but with so many of the issues having to remain undeveloped, becoming at times rather simplistic.

There is a price to be paid for pioneering, then. We have here an introduction to a complex subject, a stalking horse almost, while there will be working and reworking for years to come. Its conciseness makes this book valuable for students. Such a pity, then, that it is priced beyond their pockets. Maybe there will be a paperback.

JONATHAN BROWN
University of Reading

LAWRENCE ALDERSON, *Rare breeds* (Shire, fourth edition, 2001). 40 pp. £4.50; PETER and JANE HANSELL, *Dovecotes* (Shire, second edition, 2001). 40 pp. £4.50; ANDREW HEATON, *Duck decoys* (Shire, 2001). 40 pp. £4.50.

With this trio of volumes, Shire Books remain on the top of their form in producing beautifully-illustrated and elegantly-produced handbooks dealing with rural

artefacts and activities which are often accorded little more than a footnote elsewhere. Lawrence Alderson, whose work on genetic conservation will be well-known to readers of this *Review* and whose book *The chance to survive* is the standard work in the field, is himself a practical farmer and offers here what is essentially a list and brief description of endangered breeds of farm livestock in Britain. Alderson tells the usual story of the decline of native breeds, but gives little genetic rationale for their conservation – which may be obvious to agriculturalists and geneticists, but less so to the general public who tend to buy these books at country fairs, agricultural shows and other bucolic extravaganzas. Perhaps within the forty page limit he thought it more important to fill his space with those well-groomed images of rare (and not so rare) livestock breeds whose familiar faces peer beguilingly from each page.

The descendants of *Columba livia* who flock Trafalgar Square and live in noisome disharmony in many of the cities of Europe are among the most quarrelsome and disagreeable of birds. Compared to the noble woodpigeon, a fine sporting bird and impossible to domesticate, the urban pigeon is a poor creature; lascivious, sly and contemptible. Yet its antecedents, if carefully managed, offered an important 'living larder' from medieval times until the early nineteenth century, besides providing valuable dung, pillow feathers and other useful byproducts. Management of pigeons revolved around the dovecote, to which Peter and Jean Hansell lovingly and enthusiastically devote their attention in this second Shire volume. Whether built of rubblestone, brick, flint, half-timbering, mudstone or weatherboarding, dovecotes and pigeon lofts are invariably charming and engaging structures, reflecting local building techniques and the glorious English vernacular tradition. They are, in a sense, the very exemplars of the richness of regional variety. Always striving for visual effect, dovecotes are of beehive construction, circular, square, rectangular or, by the eighteenth century, hexagonal or octagonal with classical features, and have hipped roofs, gables, pinnacles and finials with all manner of decorative embellishments. With their interiors fitted out with up to two thousand nesting boxes of one sort or another, dovecotes often complemented the design of stables, outhouses and farm buildings and, in many cases, in the form of classical temples with ornate cupolas or castellated neo-gothic follies, were integral parts of the composition of a parkland landscape. Besides discussing the architectural qualities of surviving (and reconstructed) dovecotes, the Hansells consider both the husbandry and economic significance of the structures and provide a valuable gazetteer of locations. Any man who has kept an allotment in proximity to a pigeon-fancying neighbour will understand the resentment felt by farmers and others towards the seigniorial fortunates whom feudal privilege allowed to own a dovecote. Those who feasted on pigeon, however, remained largely unconcerned until 1800 when a tax was proposed to limit the numbers of dovecotes. But by this time there was little point in closing the stable door; the horse had long bolted and pigeon keeping for the table was going into decline.

Although pigeons make splendid eating, they are highly indigestible and I recall my grandmother's rather gloomy observation that daily consumption of pigeon could lead to death within a month. Duck, while rather on the fatty side, is at least reasonably digestible and as such was a valuable contribution to diet in the past as it is today. People had eaten duck in prehistory and by medieval times wildfowling had become a well-practised craft with ducks being attracted by feeding and by the use of a wide range of traps of varying descriptions. By the sixteenth century, however, as Andrew Heaton tells us in this brand new Shire book, a further degree of sophistication was brought to the quest for the duck. This was in the form of the duck decoy, a device originating in Holland, the word itself deriving from a conflation of *eenden* (ducks) and *kooi* (cage). From points of origin in south Lincolnshire and Essex the duck decoy spread throughout England. Essentially the decoy comprised a pond or lake from which several curving ditches, tapered along their lengths, left the pond to be terminated by detachable tunnels in which the birds were caught. Each ditch (or 'pipe') was covered with a hooped sisal or hemp net. Readers of this *Review* who have engaged in the wholly felicitous pleasure of shooting duck will know that these rather stupid and inquisitive birds will respond to a predator at the water's edge by swimming towards it, yet remaining at what they judge to be a safe distance. This particular foible was exploited in the management of the decoy. Thus a series of reed screens and other devices were located alongside each 'pipe' and matters arranged so that a dog was run in and out of the screens to be followed by the unfortunate ducks which worked their way into the final tunnel to have their necks wrung by the decoyman. Heaton describes the origins and operation of the decoys in some detail, considers their role in the economy of the landed estate, reflects upon the conservation value of some of the remaining decoys, and explains the influence of land drainage and the development of the breech-loading shotgun on the decline of the decoy. Acknowledging the contribution of Sir Ralph Payne Gallwey's, *The book of duck decoys, their construction, management and history* (1886), Heaton carries the subject forward in this most welcome addition to the Shire series. The standard decoy dog, the *kooikerhondje* is probably familiar to Colonel Hancock, author of *Old*

working dogs, although most of my readers will probably not have come across the breed, yet still be capable of pronouncing its name! According to Heaton (and I quite believe him) ducks could be fooled by any fox-like dog, or even a stuffed fox attached to a long pole and operated by an active small boy. Another alternative was to secure any old dog and deck him out with a fox-skin coat and brush. Now that I would really like to have seen!

R. J. MOORE-COLYER
University of Wales, Aberystwyth

Elsewhere and General

International Medieval Bibliography, 400–1500, Volume 33 Part 1, January-June 1999 (Turnhout: Brepols, 2000). xlviii + 476 pp. Current annual subscription for two issues €314 (hbk); €289 (pbk). Also available on CD-ROM and online. Further information from www.brepols.net.

This volume of the *International Medieval Bibliography* for the period January-June, 1999 contains 57 titles under the heading 'Daily Life', 29 under 'Demography', 47 under 'Economics – Rural', and 55 under 'Local History'. In many cases there are brief notes on what each piece is about. All the titles so classified could alternatively be found in the General Index or the Author Index, and there are numerous cross-references between sections. This is accordingly, as usual, a very user-friendly bibliographical aid. The index entry under 'Agriculture' gives 43 items, ranging in time and space from Pictish horses in Scotland to thirteenth-century Egyptian peasants. The volume could save tracts of time in searching recent literature. Its accuracy is not flawless; among authors I know personally I find 'LOMAS, Thomas' instead of 'LOMAS, Richard' (no. 1461 and index), 'RICKMOND, Colin' instead of 'RICHMOND, Colin' (no. 4694 and index), 'WARD, Jennife' instead of 'WARD, Jennifer' (no. 4971 and index). However, a scattering of such errors is to be expected in a work with this quantity of detailed bibliographical information, and the general level of reliability is high. Given that the volume covers only six months, its usefulness is inevitably enhanced by its being part of an ongoing series. In a single volume of this sort there will not be a lot to find on any given research topic. Nevertheless the size of the volume is impressive. Not all the titles listed in the volume were published within the six month period on the book's title page, but 5011 titles represents a formidable amount of new learning.

RICHARD BRITNELL
University of Durham

S. R. EPSTEIN (ed.), *Town and country in Europe, 1300-1800* (CUP, 2001). xi + 343 pp. 13 tables; 17 figs. £45.

This volume of fourteen essays by fifteen different authors surveys the relations between town and country in eleven different European countries or kingdoms between 1300 and 1800. It is an ambitious enterprise in less than 350 pages, but all writers help by summing up their conclusions, and the editor at the outset picks out the common themes and the major lessons. The chronological span of the individual essays varies: that for Sweden covers 1450–1650, the Polish commonwealth, 1350–1650, Germany, surprisingly, only 1350–1600 (did an author fall by the wayside?), Castile, 1400–1650, France, 1550–1750, but Holland and England are allowed two essays each (England by James Galloway and Paul Glennie), and Italy is divided between north and centre and the kingdom of Naples. The Austrian and Czech lands are covered in one essay by two historians moving back and forth over a vast and highly differentiated territory – a heroic effort, though it leaves the reader bewildered. Switzerland is a welcome inclusion by Martin Körner; Scandinavia is represented by Robert Sandberg writing on Sweden only: Norway and Denmark are omitted.

The editor at the outset surveys current trends of argument when summarizing town/country relationships. It is usual these days to treat towns as the dynamic movers, creating a demand that stimulated the agricultural population to respond and encouraged their specialization. He is fully aware of the pre-existing pattern of political power which established, or held back, the emergence of towns between the twelfth and fifteenth centuries. It allowed very different regional and national strategies after 1500 when town and country contacts tightened, commercial markets for food expanded, and industries spread into the countryside; latent tensions hardened, and conflicts of interest emerged ever more clearly. But the essays show how many different solutions were found, and no actual wars broke out between the parties. The editor surveys the recurring themes, though these are expressed at an oppressively high level of conceptual generalization. Some of the essayists, constrained by their allotted space, write in a similar vein.

Legal and political rights, limiting the economic freedom of towns to shape their relations with the country, feature prominently in all essays. But for the rest, agricultural historians will find the strong urban viewpoint disconcerting; it takes it for granted that farmers will respond to the stimulus of the towns, but will not show initiatives of their own. Little attention is paid to the social structure in the rural areas, where forceful, as opposed to negligent or absentee, lords could make all the difference to the energy and opportunism of farmers. A different flavour suffuses the essay by Marjolein 'T Hart, however,

writing on the Dutch republic and enlivening her text with cogent examples. She also accommodates more than one rise and decline in the economic ventures of town and country, checking the assumption of continuity in the main drift of events between 1500 and 1800; for example, at one time migrants moved into towns, at another they saw a better chance in the country. Körner writing on Switzerland also reminds us of the existence of 'peasant republics' which enjoyed a freedom not found in feudal regions. Yet the final picture is an unbalanced view of town/country relations that needs to be set alongside that presented by in Tom Scott (ed.), *The peasants of Europe* (1998). That showed the shrewd perceptions of opportunity seized by canny farmers: they embarked on the growing of diversified foods (especially vegetables and fruits), and they adopted with alacrity the production of more wool, flax and hemp, whereby former peasant cloths (new draperies) turned into an extraordinary variety of fashion goods for townfolk. The achievements of townsmen were matched by the ingenuity of countrymen. Tom Scott's book, in fact, is so interlocked with this one, it should have prompted much more curiosity about the farmers' exploitation of economic circumstances affecting both town and country. As it is, the background is barely sketched in beyond vague references to an economic depression in the seventeenth century and reviving populations after 1750, though it was that 'depression' which greatly diversified both economies.

A short review cannot do justice to the many comparative insights offered by this volume. The contrasts between, say, English and Polish, or Swedish and Italian experience prompt deep reflection on the relative roles of taxation, feudal authority, urban elites, geographical situation, and the culture of peasantries in determining town/country relations. A multitude of factors operated simultaneously to different ends. The thought also occurs that historians may shift their angle of vision somewhat as we ourselves observe a changing relation in the quality of life between town and country, and perhaps come to see the past in a different light.

JOAN THIRSK
Hadlow, Kent

BAS J. P. VAN BAVEL and ERIC THOEN (eds), *Land productivity and agro-systems in the North Sea area (middle ages to twentieth century). Elements for comparison* (Turnhout: Brepols, 1999). (CORN Series 2). 382 pp. 109 tables; 58 figs. €63.

The CORN project (Comparative Rural History of the North Sea Area) is funded by the Flanders' Science Foundation, co-ordinated by Eric Thoen, and involves leading agricultural historians in Britain and the continent. The volume under review is the first of seven scheduled to appear. It is an appropriate beginning, for it follows a trail blazed by another leading agricultural historian in the Low Countries, Slicher van Bath, who pioneered the comparative study of agricultural productivity. Van Bath collected information on the yield per seed sown across Europe from the middle ages to the nineteenth century. He concluded that farmers operated at a uniform, low level of efficiency in all the countries he studied. There was little improvement on most of the continent before 1800, but England and the Low Countries experienced agricultural revolutions that propelled them to a much higher level of efficiency by 1800.

How well has Van Bath's interpretation stood the test of time? Van Zanden raises this important question in the final essay of the volume. The greatest contribution of the collection are the essays, mainly in Part I, by Dejongh and Thoen on Flanders, Van Bavel on the Netherlands, Béaur on France, Overton and Campbell on England, and Priester on Zeeland that bear on Van Bath's thesis. These pieces critically discuss published local studies on the history of yields as well as presenting some new evidence. What emerges is a mixed picture of productivity performance in the high middle ages with some places reaping only low yields (10 hectolitres per hectare for wheat) and a considerable number realizing high yields (20 hl/ha). Yields slumped in many of the high yielding areas after the Black Death. Increases towards 20 hl/ha were widespread in southern England, north-eastern France, and the Low Countries in the seventeenth and eighteenth centuries.

A fascinating feature of the volume is the way different authors try to explain the fall in yields in the fifteenth and sixteenth centuries and their subsequent rebound. Was it population decline leading to less intensive cultivation? Or was it changes in urbanization that affected demand? Or perhaps it is all a problem with the data? Much work is needed to sort out these possibilities.

Several papers carry the productivity story into the twentieth century. Collins's study of power sources and intensity in English farming is most intriguing.

The second part of the volume deals with 'agricultural systems'. This proves to be a slippery concept as the term is used differently by different writers. Bieleman urges the historian to think of agriculture as a set of interacting natural and social systems. The practical import of this is that crop choice is determined by prices – and thus distance from markets – as well as by soil type. Jessenne presents an intriguing map of agro-systems in northern France in the period 1750–1850. These systems reflect property distribution rather than prices. Thoen and Vanhautte explore the system of 'Flemish husbandry' with a comparative study of two villages in the mid-nineteenth century. They differ in land tenure – leasehold

was much more extensive in Meigem than in Dessel – and in access to market. While these differences explain some differences in farming, the major factor influencing cultivation in both was high population. But how could high population have these effects in a village where land was leased (not owned) and in places near urban labour markets where off-farm employment was available? Afton examines farming methods in the Hampshire downs in the nineteenth century. While the high prices of the Napoleonic Wars play a role in explaining technical change, it is the land itself that provides the unity for her story. Defining the farming system is at the discretion of the historian.

The final section of the volume contains two papers that take a more general view. Chevet takes up the question of aggregating output and argues that the nutrients withdrawn from the soil by the growing plants are a better metric than prices or calories. He aggregates French yield data with estimates of nitrogen, phosphorous, potassium, and calcium abstraction. The utility of this approach is seen in the maps he constructs of agricultural regions (defined in yet a different way!) in the Netherlands, Belgium, and north-eastern France.

In the final essay, Van Zanden asks how the research of the last thirty years affects Van Bath's interpretation of European agriculture. In Van Zanden's view, Van Bath is vindicated. A more sceptical conclusion, however, would emphasize the growing list of places reaping high yields before the Black Death. These high yields call Van Bath's framework into question.

ROBERT C. ALLEN
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ISABELLE DEVOS AND LIAM KENNEDY (eds), *Marriage and the rural economy: Western Europe since 1400* (Turnhout: Brepols, 1999) (CORN Series 3). 292 pp. 51 tables; 68 figs. €55.

In 1965 the British demographer John Hajnal published a study entitled 'European marriage patterns in perspective' in a collection of now mostly forgotten essays edited by D. V. Glass and D. E. C. Eversley, *Population in history*. Hajnal's study, according to Theo Engelen, one contributor to the present volume, 'may well be the most cited article in the historical demographic and family literature' (p. 273). He observed that a unique pattern of marriage had existed before 1940 in western Europe, west of an imaginary line drawn between Trieste and St Petersburg, characterized by a late age at marriage for both men and women, and a high proportion of persons who never married. He linked the pattern to the nuclear family system which made it necessary for a man to postpone marriage until he had secured independent means of livelihood sufficient to support a family. This volume is devoted to an examination of the socio-economic and cultural background of what it calls familiarly 'the WEMP' (for Western European Marriage Pattern) in the North Sea area, which, judging from the contributions, includes the British Isles, the Low Countries, Scandinavia and Germany, but not France. Although one frequently asked question is when the pattern originated, the papers in this collection address mostly its evolution since the eighteenth century.

The debate centres on whether new patterns of employment, economic development, and the rise in standards of living affected the timing and intensity of marriage. There has been a great deal of speculation that the development of proto-industrialization (cottage industry using female labour in the production of textiles) and later the growth of employment resulting from the industrial revolution allowed earlier and more universal marriage among the lower classes. The welcome contribution of the papers in this volume is to go beyond the very broad generalization based on aggregate rates, to the testing of hypotheses in a series of local contexts, using multivariate techniques with individual data. In general, nuptiality seems to respond only very sluggishly to economic incentives, and age at first marriage is not the only variable involved, although it is the easiest to compute. The evidence is weak on the proportions ever marrying; it is almost completely absent on marriage dissolution and remarriage.

In case after case there is surprisingly little direct relationship between the growth of employment and the frequency of marriage. The explanations vary; many factors influenced the contracting of unions in sometimes conflicting directions during the modern era, operating differently by social class, and in urban and rural areas. In rural Scotland, according to Michael Anderson, landlords controlled employment and housing, and there was no latitude for earlier marriage. In late eighteenth-century England, according to Richard Smith, the growth of cottage industry seemed to have only compensated for women's loss of opportunities in animal husbandry, as grain production gained in importance. Other factors were the shift from living-in servants to day labourers as the dominant forms of wage labour, the substitutions that were occurring between male and cheaper female labour in textile production, poor relief and the institutional obstacles that existed in some parts of Europe to the marriage of paupers. Local studies often fail to control for the fact that when it is difficult to marry in a particular location, migration is an alternative, and eventually marriage may take place elsewhere. The importance of migration in providing marriage opportunities for young women from the countryside is clearly

illustrated by the work of George Alter on Verviers, a textile city in Belgium. Finally, higher incomes may resolve themselves in opportunities of marriage, but also in higher consumption and standard of living, so that the very prerequisites of marriage may have increased in step with economic growth.

The WEMP disappeared in the second half of the twentieth century, probably for cultural more than economic reasons. By the 1960s, the restraints to marriage had been lifted in all countries, and the age at marriage in European countries had largely converged to historical lows. In the 1970s, though, the story took a new turn in the direction of increased cohabitation, either prior to marriage, or instead of marriage. This part of the story is only briefly alluded to in the book.

A note of criticism on which to end: the book lacks a subject index.

ETIENNE VAN DE WALLE
University of Pennsylvania, Philadelphia

ROMAN GARRABOU, JORDI PLANAS and ENRIC SAGUER, *Un capitalisme impossible? La gestió de la gran propietat agrària a la Catalunya contemporània* (Universitat de Vic, Eumo Editorial, 2001). 271 pp. 34 tables; 9 graphs; 1 map. €20.

How well does the management of large estates in contemporary Catalonia fit into an Adam Smith/Arthur Young type model which equates modern agricultural development with entrepreneurial initiative, technological change and the substitution of capital for labour? This is the intriguing question posed by Ramon Garrabou, Jordi Planas and Enric Saguer in their challenging work which combines micro-history with the intricacies of Marxist theory. In particular, they are interested in the Leninist model of the so-called American path to economic development (an alternative to the better known English or Prussian variants), centred initially around the activities of small independent proprietors who were eventually to be differentiated into either large capitalists or wage labourers. This jointly-authored volume is the product of more than two decades of archival research and lively intellectual debate whose findings first appeared a series of conferences as well as in such journals as the *Revista de Historia Económica*, *Recerques* and *Noticiario de Historia Agraria*, mostly in the 1990s.

The new book is based on primary research in the archives of eight families – Sentmenat, Coll, Nuix, Bru, Negre, Maspons, Riba and Güell – whose estates were to be found in what are described as representative parts of the Principality, viz. Segarra, Urgel, Vallès, Baix Llobregat, Osona, Gironès and Empordà. Together the team has reconstructed the accounts of these large properties for most of the period 1821–1945. By large properties, what is meant is estates of one hundred hectares and above – depending on the nature of the terrain – which were beyond the capacity for labour of a single family. They usually comprised a number of scattered farms (*fincas*), often accumulated over many centuries by aristocratic families, and organised around the traditional farmstead or *mas*. In a number of cases, the social origins of the large landowners were to be found in trade or manufacturing, while others were lawyers or pharmacists, predominantly urban in their make-up, who went on to set up agricultural colonies producing such items as poultry and dairy products for the growing market of Barcelona. What strikes the authors is the persistence from late feudalism into the Liberal era of traditional forms of management and cultivation, especially sharecropping (*parceria*) – of which Arthur Young did not have a single favourable word to say – as well as the limited extent of both technological change and the expansion of agricultural output before the green revolution.

The book offers its readers a systematic analysis of the main developments, with individual chapters on forms of tenancy, expenditure, income and profits. In the final chapter, the authors look at the different types of agricultural activity, not least those based on the use of wage labour, renting and share cropping. Their main conclusion is that, although Catalonia does not fit particularly well the English model to which one segment of large landowners aspired in the middle and late nineteenth century, the character and evolution of large estates were nevertheless progressively governed by the market, the close proximity of industry and wages. To my mind, this innovative book is well-written and tidily organized. It makes a useful contribution both to the complicated agrarian history of Catalonia and the wider debate on the evolution of agrarian capitalism.

JOSEPH HARRISON
University of Manchester

LUCIA BULIAN, *Asolo. Paesaggio, proprietà e credito nel territorio asolano del secolo XVI.* (Treviso: Fondazione Benetton Studi Ricerche / Canova, 2001). 212 pp. 25 tables; 4 maps. €15.50.

The borough of Asolo is placed in a favourable natural location between the rivers Brenta and Piave, in sight of Monte Grappa (a landscape familiar to many British soldiers who fought in Italy in 1917). The soil was profitably non-acid, even in the mountain pastures, offering a good chance for cultivation. Various well-known feudal lords, such as the Ezzelinos, the Carraresi, Giangaleazzo Visconti, and Sigismund, king of Hungary, rose to control Asolo's territory before it fell under Venetian dominion in 1412. Peace brought a flow of newcomers from

Bergamo between 1419 and 1509. Of 140 immigrants, at least forty were active in the wool trades. At the same time, the town made an attempt to gain the status of a city: the local councillors between 1417 and 1419 styled themselves *cives* (citizens). Although most of them were not rich, city status was confirmed by the Venetian government. In the 1450s, Venice granted the feudal tenure of Asolo to Caterina Corner in exchange for Cyprus, a private possession of the Corner family. A member of one of the major Venetian families, Caterina styled herself 'Queen of Asolo' and maintained close relations with the Venetian nobility. Their increasing numbers upgraded the lifestyles of many *asolani*.

Asolo became a centre of polite life and of humanistic studies. The building of Palladian villas followed. Larger landowners became a source of credit for local farmers. A thick network of credit relations connected most of the smallest owner-occupiers to the more substantial men. For instance, the Barbaro estate was the centre of a vast credit network. Loans were disguised as land sales, circumventing usury laws and reducing Barbaro's land-tax liability, while annual interest payments on the loans appeared in the accounts as rents. In this fashion, small occupiers survived the dearth of 1528–9. Other landowners preferred payments in grain and wine, but the essence of the loan contracts were the same. Therefore the real wealth of the upper landed class went underestimated in the tax returns, which registered holdings under the name of an 'owner' who was really a tenant and debtor.

Larger investors, such as members of the Rinaldi family, also rented very large shares of the common lands in the mountain of Asolo di Sopra. These pasturelands were farmed with shepherds who managed large flocks of sheep and some cattle, providing mutton and veal for the Venetian market and wool for the local textile industry. Asolo developed as the main centre of wool spinning and weaving in the Trevigiano, especially in the seventeenth century, and the linkage of agriculture and credit was key to the region's affluence. Investors from Bergamo, Treviso and Venice brought cash into the region, enabling the poorest peasants to survive as farmers and weavers.

Thanks to some painstaking research in notary archives, Bulian's research on Asolo reveals, more than other volumes in the series, the role of credit in agricultural practice. Tensions between the wealthiest members of the Venetian aristocracy, such as the Barbaro, and wealthy speculators in wool and cattle on the one hand, and the locals on the other were acute. Quarrels focused on the control of the town council and the management of communal lands. The agrarian landscape did not differ from other areas of Trevigiano districts. Intensely cultivated *piantata* offered a variety of crops throughout the year. But a tradition of continuous cultivation had extended to the common lands, at the expense of local graziers and shepherds. The Venetian Republic tried to keep common lands open in the interest of sheep rearing. However, in 1561 the Council of Ten finally agreed that only one-third of communal lands in Asolo should continue as open pasture. Access to communal lands remained vital for smaller householders and probably retarded the final demise of the commons.

MAURO AMBROSOLI
University of Udine

MICHELE SIMONETTO, *I lumi nelle campagne. Accademie e agricoltura nella Repubblica di Venezia, 1768–1797* (Treviso: Fondazione Benetton Studi Ricerche / Canova, 2001). xii + 491 pp. €23.24.

The present volume is rooted in research begun almost fifty years ago by Marino Berengo (1955) and Gianfranco Torcellan (1966), who drew attention to the important role of local academies in the major cities of the Venetian mainland during the late eighteenth century. These academies were dedicated to the study of the agricultural questions that, in the eyes of many contemporaries, hampered the economic development of the Republic. Academies first appeared in such cities as Udine, Conegliano, Vicenza, Verona, and Belluno, but sooner or later every provincial city of the Venetian Republic, even in distant Dalmatia, had its own agricultural academy.

The movement began in Udine in 1762 thanks to the initiative of a wealthy merchant, Antonio Zanon, who was engaged in the silk trade in Venice. He soon joined forces with Count Fabio Asquini, a local landlord and entrepreneur, who was elected life secretary to the academy. The two friends began an active programme of innovation and investment in both manufacture and agriculture. Sometimes, academies grew out of former institutions dedicated to letters and philosophy. Here, as elsewhere in Europe, agriculture had become a fashionable subject in upper class circles. Some academies lasted a few years only, others until the end of the republic in 1797. Altogether some 1300 members participated. The records reveal the social origin of 1070 of them. Half were noble, and the rest equally shared between clergymen and commoners. One finds, in decreasing order of importance, lawyers, mathematicians, silk merchants, botanists, chemists and architects. A small group of eight tenant farmers and land stewards also took part. Although most academicians were dilettanti, they discussed agricultural matters seriously. Vicenza and Conegliano, situated in the best farming areas of the Venetian mainland, led the whole movement. Maize cultivation,

ley and meadow improvement, mulberry planting, and cattle husbandry were the most discussed topics. The movement encouraged the state to launch a general agricultural inquiry, directed by land expert, Pietro Arduino, who reported on the agricultural state of the Venetian *terraferma* in 1768. He drew attention to the poor state of pastures, cattle, and woods and to problems of flooding, land exhaustion, fallow management, credit provision and social unrest. Commons mismanagement, defended by local élites who rented the management of common lands and common rights, was a major restraint on Venetian agriculture. Eventually, Arduino became the first professor of agronomy at Padua University and a new body of magistrates were created to supervise agricultural reform (*deputati all'agricoltura*).

The present volume deals at a great length with the discussions, memoirs and prizes given to improve farming. One learns quite a lot about local agricultural writers, some of whom became better known in Venice thanks to the labours of enlightened journalists such as Francesco Griselini, editor of the *Giornale d'Italia*, a compilation that has already been studied by F. Venturi and G. F. Torcellan. In the present study, a good deal of attention is given to the agricultural education offered to poor tenants and peasants by willing parsons, following the protestant model of local education. Although 'agricultural catechisms' were compiled for this purpose, very few parsons turned out to be qualified to instruct peasants in botany and agronomy.

The study is wide-ranging and exhaustive and will be useful to many scholars working on the period. However, the author is not very conclusive about the practical results of this movement and the reader still relies upon Venturi for an historical judgement on the reform movement in Venice. It would have been helpful if the pronouncements of Simonetto's eighteenth-century agricultural writers had been compared with a) the average agricultural practice of the time; b) the so called 'new agriculture' of the mid-eighteenth century; and c) today's agricultural science.

MAURO AMBROSOLI
University of Udine

JACQUES POUCHEPADASS, *Land, power and market. A Bihar district under colonial rule, 1860–1947* (Sage, 2000). 574 pp. 77 tables; 27 figs; 19 maps. £39.99.

The publishers are to be congratulated for bringing out this vast work, equivalent in length to at least three books. It is a translation of the author's *Paysans de la plaine du Gange* (Paris 1989). Though it does not seem to have been revised or updated for this edition, one should not quibble for it is a classic study, of unmatched detail and comprehensiveness. It treats a single district, but as a 'context' rather than a 'unit' of analysis, and to the accompaniment of wide-ranging and sometimes definitive discussions of broad issues of agrarian history. It has much to offer not just students of south Asia, but any reader of agricultural history and development.

Pouchepadass makes a distinction between indigenous conditions and the academic 'norms of presentation' (terms, periods and so on), which are also largely those of the colonial record. Tenancy becomes a complex of social and political relations; the market a range of equally intermixed exchanges within the rural economy. Continuing environmental, social and religious conditions are shown to be influenced by rather than wholly subjected to colonial law and administration, commercialization, population growth, and so on. This sensitivity to historical meanings is at the heart of Pouchepadass's conclusions, often making them complex and nuanced.

He traces the physical environment, patterns of migration, and the advancing frontier of cultivation in circumstances of a relative abundance of land: this is both a universal and a particular story. Each soil type and crop has its careful place in the scheme, as do agricultural methods. Seed quality and fertilizers are given their due. The harvest cycle is richly described, with due allowance between areas, crops and seasons: so often in the historiography these important variations are ignored. Patterns of artificial irrigation are distinguished and explained, including the impact of state canals (a subject of much debate) which are shown to have been under-utilized, but to have contributed to a marked increase in commercial rice production and to a decrease in protective mixed cropping.

Pouchepadass's concern for meanings also informs, for example, his take on the difficulties of interpreting colonial statistics – as balanced a short statement as I have read – which then supports his unexceptional but unusually well-grounded conclusion that foodgrain production per capita rose before 1920 and declined thereafter, alongside a growth of population, a decrease in morbidity, and an increase in cultivated area but not in double-cropping. Between 1901 and 1961 male workers per hectare increased; yields (probably) and the average size of holdings both decreased; and, most importantly, the numbers of landless labourers grew. All this provides an account of progressive impoverishment and social and regional differentiation that is not unfamiliar, but told with extraordinary detail and sensitivity. New light is thrown on questions such as the possibly inverse relationship between productivity and size of cultivating unit, and on concepts such as underemployment and surplus labour. In the end, the vexed questions of technological stasis and productivity stagnation are answered in a word: 'power'.

That brings Pouchepadass to a masterly discussion of land rights, especially rents and other dues, and of the limits of both market and state interventions in the face of local power. Giving primacy to social relations, he notes contestations within agrarian society, but also (as I too have argued) how the local structures held out against capitalist, legal and bureaucratic interventions, or used them as new weapons in old struggles. Agricultural history and the study of economic development, he is saying, can only be understood in the round.

His study of commercialization exemplifies this method. He gives an excellent picture of the market insulation and dependence of so many agricultural producers; of the rationale of poorly integrated and often coercive pricing (where landlords owned markets and creditors bought crops); and of the depressed incomes and poor access to cash and other resources for the majority. In short, he probes the very imperfect competition in many of the factors of production, despite the preferences of the colonial state and its laws (often half-heartedly executed), Bihar's greater involvement in world commerce, and the emergence of markets in land and tenancies. His explanations include caste, bondage, custom, lack of information, and intermediary social and economic controllers (traders, rich peasants and estate agents). These are all things fully understood by many who study them, but curiously missing in most economic models, including those used by Indian colonial law-makers.

This book is a heavy antidote to history 'without facts' and also to purely technical or isolated studies (women, subalterns, crops, prices), though it has fully absorbed their insights. With Pouchepadass you need many quiet hours and a strong arm, but there are rewards.

PETER ROBB
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SIMON VILLE, *The rural entrepreneurs. A history of the stock and station industry in Australia and New Zealand* (CUP, 2000). xiii + 259 pp. 15 tables; 21 plates; 24 figs. £40.

Although perhaps not unique to Australasia, the stock and station agency was, as the author puts it, a quintessential phenomenon of the pastoral expansion in that region during the second half of the nineteenth century. Nowhere else did firms play such a key role in that expansion, initially from the 1830s confined essentially to woolgrowing, or come to provide so comprehensive a range of services to farmers. By the 1900s, firms engaged in this activity were among the largest in the Antipodes. Their emergence, was a response on the one hand to the small scale of pastoral holdings in relation to the size of the market and, on the other, the distance to that market in the UK. The expansion of woolgrowing ever further into the interior enhanced the isolation of producers even from the ports of shipment on the coast. This was only mitigated to a limited extent by the spread of the railway and the telegraph.

Outstanding features of the activity were expansion through diversification, that is the exploitation of economies of scope and horizontal integration, the latter through internal expansion and acquisitions, as well as for a time in the early stages of development through inter-firm relationships. Most of what were to become the major agencies by the 1900s originated as importers of general merchandise, or as general auctioneers who came to specialize in livestock. The former activity brought involvement in transportation to farms and backloadings of wool for shipment to the UK. This led to involvement in wool brokerage. Through shipping connections and offices established in London, the agencies became sources of information for growers on trends in the market for wool. They additionally became a conduit for the supply of farm equipment, improved breeds of stock and other farming inputs. Through a presence in London they acquired access to relatively cheap finance to provide loans to pastoralists. Here the extent of local knowledge reduced the risk of default as compared with the banks. Later in the nineteenth century they became conduits for loans from colonial banks to graziers.

Until the 1880s and the emergence of agricultural cooperatives, the agencies had no effective competition. Even then the competition of the cooperatives was restricted by coverage, being confined to members, and by inability to enter the important area of loan finance to pastoralists. Although important in dairying, they played a minor role in the wool and grain sector. It is only in the twentieth century that the local banks began to eliminate the agencies as intermediaries between them and farmer borrowers. From the 1930s increased government intervention diminished their role with the establishment of statutory marketing bodies, beginning with grains and later extending to wool. After the Second World War, the position of agencies further diminished with the growth of agribusinesses capable of developing their own links with the market and access to finance, as well as the appearance of modern forms of media, such as radio, television and specialist periodicals. The heyday of the agencies was then in the later nineteenth and early twentieth centuries. In the interwar period, the exploitation of diversification, in response to a generally depressed rural economy, as into the motor trade in the 1920s, was a failure. Some success was achieved in the travel business after 1945, on the basis of connections with

shipping companies and making travel arrangements for their employees and farmers. They were soon supplanted in this activity by specialist travel firms. In the 1970s and 1980s the remaining dominant firms were absorbed into conglomerates, before being spun off as separate entities with but a shadow of their former significance.

It is hard to do justice to this work within the space available. It provides a comprehensive account of a long neglected, albeit important institution in Australasian rural history. In that respect it is unlikely to be surpassed in the foreseeable future. The author sets the work well within the context of economic and other developments in the theory of the firm, while providing useful connections to the general economic history of Australasia for readers without an intimate knowledge of the area.

JOHN PERKINS
University of New South Wales

MARGARET DERRY, *Ontario's cattle kingdom. Purebred breeders and their world, 1870–1920* (University of Toronto Press, 2001). xv + 221 pp. 9 plates. £35.

In Canada, as in other modern industrial countries, agriculture accounts for a diminishing share of economic activity, falling from 40 to 20 per cent of GDP over the fifty years covered in this book. Change and absolute growth, rather than stagnation, were essential features of agriculture's relative decline. Margaret Derry's study of Ontario, Canada's late nineteenth-century agricultural heartland, focuses on the activities and contributions of breeders of pedigree cattle during a period of rapid change. In 1870, cattle farming in the province was widely regarded as subsidiary to its wheat culture, with fodder crops only displacing wheat after that date. (The rise of mixed farming is seen as a significant stimulus to Canada's fledgling agricultural engineering industry.) By 1890, Ontario farmers, tiring of the baleful effects of a volatile beef cycle on their returns, were turning in increasing numbers to dairying, serving an expanding export demand for cheese and the domestic market for butter. The heyday of Ontario beef lay in the 1870s and 1880s.

Viewing the history of Ontario agriculture during this critical half century through the lens of its pedigree cattle sector enables Margaret Derry to explore the multiple connections linking Ontario with Britain and the United States on the one hand and with the remaining provinces of Canada on the other. Ontario pedigree breeders, comprising both farmers for profit and hobbyists or amateurs, were drawn into supplying United States Shorthorn fashion crazes, at first for animals carrying the inheritance of Thomas Bates' Duchess tribe, and subsequently for Shorthorns showing a preponderance of red – a prejudice which condemned the fine, high-bred bull calf Clarence Kirklevington, which had the misfortune to be born white, to an unfulfilled life as show steer. However, the productive sector was also the breeders' target. During the 1880s, farmers in the American West preferred disease-free Ontario breeding stock to diseased American animals originating east of the Appalachians. Thanks to pedigree crosses, Shorthorn cattle from Ontario's commercial farms reached a quality sufficient to be shipped for fattening in Aberdeenshire, the home of improved Shorthorn beef lines, when falling steamship rates made this a possibility. In 1892, Britain suspended Canada's disease free status. This put an end to the trade in Canadian stores, though not to transatlantic shipments of cattle for immediate slaughter, which continued for some time though with increasing concern at the proportion exhibiting dairy rather than beef characteristics. Canada was unable to establish an inter-province trade in stores similar to that which had operated across the Atlantic.

The book explores many other themes which can only be touched on here: the contrasting treatment of pedigree stock in photographs and engravings; the emergence of a global regime of animal disease with free-trade Britain as its epicentre; the contrasting and competing practices of herd book registration in Britain, Canada and the United States; the English/French dichotomy in breed allegiances in Quebec; the impact of Toronto's centralized stockyards on Ontario's meat trade middlemen and butchers. All in all, it is a model study, and it is not too surprising to learn that the author's sure historical scholarship is built on the solid foundations of praxis. The jacket illustration bears testimony to the author's talents as a livestock artist. Those wishing to know more about her work as a cattle breeder should visit the enterprise's web site (www. poplarlaneholdings. com), where they will learn that the Derrys specialize in breeding Murray Greys, a breed well-adapted to climatic extremes and originating in a chance Australian encounter between an Angus bull and a Shorthorn cow.

JOHN R. WALTON
University of Wales, Aberystwyth

WILLIAM M. DENEVAN, *Cultivated landscapes of native Amazonia and the Andes* (OUP, 2001). xxx + 396 pp. 5 tables; 83 figs. £70.

This is the first comprehensive coverage of a large body of scholarship which has been accumulating over the past forty years, on pre-Hispanic farming systems as evidenced in the visible landscapes of South America. It forms a milestone in this research, partly because it makes a complete collection of Denevan's own work, and partly because the stage of identification of relic landscapes, from photography and field investigation, is

coming towards an end. It should be remarked that this stage is not yet totally over: large areas of terracing have yet to be mapped in Peru and Bolivia, some of it covered in jungle today, and features such as water harvesting around upland basins and the ponds or *cochas* in these countries deserve closer inspection. But at least researchers are now aware of the extent of prehistoric landscape management, and much of the work is associated with Denevan and his colleagues.

The topics covered here link to the pioneering work of Carl Sauer, by looking at indigenous practices and systems. But Denevan does not attempt to examine Sauer's central question of the origins of farming and its diffusion in the Americas, and does not focus on ethnobotany, linking cultivated plant types to the development of farming. Much of his work is however exciting in that it covers new fields, where little was known prior to the 1960s.

In a way, this work is a kind of academic autobiography of Denevan, at least in terms of the published products reviewed in the book. Many of the studies used are his own, or those of a whole generation of students and former students at the Geography Department of the University of Wisconsin, Madison. The key areas of Peruvian terraces, raised fields around Lake Titicaca, and the swidden agriculture of the wet tropics, have all been studied in detail through Denevan's fieldwork, and these are central to the book. One area of great interest which is not within Denevan's direct competence is that of the irrigation systems, which are mostly on the Peruvian coast. This is understandable, because the irrigation was linked to the major civilizations of the coast, a major focus of archaeological endeavour, so that archaeologists have led most research on water management systems. But even here, the cover given in the book is excellent and up to date, with reference to many important problems of interpretation, and extensive bibliography.

As to the geographical coverage of the book, areas which are not covered in any detail are largely in Brazil and in the southern cone countries, Argentina, Uruguay and Chile. This may sound like a large piece of the continent, but none of these countries are noted for extensive or complex pre-Hispanic remains of farming systems. Only north-western Argentina and northern Chile, on the southern edge of the central Andean civilizations, have substantial areas of ancient water management and land improvement.

A large first section of the book is concerned with identification and classification of forms to be seen in the farming landscape; a necessary feature, because there is little agreement still over the English terminology for many forms, and the Spanish language names vary from country to country. After this come chapters which include some of the most fascinating topics, and these benefit from Denevan's direct involvement in field study. In the lowlands, there is the question of how the rainforests were used by swidden farmers, and the findings of Denevan and others are that extensive, long term use was possible even when the forest had been apparently abandoned by cultivators. A central question in both lowlands and uplands is that of the drained fields and raised fields, of peculiar importance in a variety of physical situations through the Americas. In this matter, virtually nothing was known before the late 1960s, and many of the sites were abandoned by agriculturists long ago, their purpose forgotten by later people. Careful field study has revealed a great wealth of different types, much of the initial impetus coming from Denevan's work in eastern Bolivia and then in the area around Lake Titicaca. Another area of controversy and uncertainty is that of the terraces, covering huge areas in the central Andes, most of which seem now to be abandoned. Denevan covers the evidence for their history and prehistory, and links them to farming systems and crop types. For both raised fields and terraces, the question of abandonment is always present, and the book does cover the main theories, of climatic change, destruction through invasion and conquest, and changes in farming systems and crop types.

In general, Denevan takes a fairly impartial view on the debated questions, so that the reader can glean a fair idea of the arguments on both sides. The book is well presented, with copious illustration, especially diagrams which are important to understanding the nature of some of the little known forms. The bibliography is extensive and up to date. This book should be of value to a wide spectrum of social scientists and Latin Americanists, both as a text and as a reference source on its subject matter.

ARTHUR MORRIS
University of Glasgow

ROY HORA, *The landowners of the Argentine pampas. A social and political history, 1860–1945* (OUP, 2001). ix + 264 pp. £40.

By the 1920s the pampas were the source of almost half of South America's foreign trade, even though Argentina had only ten per cent of the region's population. Roy Hora's study, a revision of his 1998 Oxford University doctoral dissertation, examines the people who owned the land at the base of this geographical concentration of wealth. This concentration was a striking phenomenon not only at the regional but the world scale. Hora explores the evolution of the landowners as what he terms a 'class', looking at their relationships with issues of political power and the state.

The author sees the pampas, long devoted to a livestock economy, moving 'towards a capitalist organization of production' after 1850. Some will find it hard to accept that capitalism on the pampas was new, but signs of structural change were certainly present, in the expansion of sheep breeding, and in the efforts of landowners to associate. In 1866, they formed the Sociedad Rural Argentina, a landmark in the history of rural associational behaviour across South America. Hora draws a picture where few paid much attention to the ideology of rural progress and modernization embraced by the leaders of the Sociedad Rural. In summary, he presents rural conditions as dismal, estancias as 'primitive.' While paying close attention to ideology, he says surprisingly little about the connections between the Sociedad Rural and practical issues of rural legal reform (on the subject of changing property rights, Richard Slatta's 1983 study *Gauchos and the vanishing frontier* is a glaring absence from the generally excellent bibliography).

The expansion of the frontier on a huge scale (some 20 million hectares of land were sold on the pampas between 1878 and 1882) and the adoption of new technology in ranching changed the fate of the rural landowners. Rural images turned overwhelmingly positive. Ranchers were seen as the way forward at any sign of economic slowing for Argentina, such as the Baring crisis of 1889. They began to organize politically. Hora shows, however, how increasing rural wealth did not readily translate into political power. He makes a series of convincing points about obstacles to landowner political party organization. The pampa elite was recent in most cases; its connection to place was more shallow than in some other parts of Latin America. A highly-commercialized and mobile society on the pampas, with low labour demand on the ranches, left little scope for the development of a 'deferential dialectic' (p. 96).

Despite an ongoing admiration by Argentina's public for the achievements of ranching, this had essentially reached a technical plateau by around 1910. The extension of the suffrage, along with the changes in markets and foreign investment patterns that followed the First World War, meant that by the 1920s the landowners no longer showed their earlier confidence about their position in society. Hora provides an excellent discussion of the economic and moral challenges faced by large ranchers during the 1930s, the period when bilateral ties with Britain took on renewed, if ultimately challenging, strength. He also explains clearly how the rural sector was eventually forced to subsidize the costs of urbanization and industrialization.

This book contains truly impressive research. Readers are introduced to a vast range of specialized literature contemporary to the study, including the papers of some leading ranching families. For example, Hora makes excellent use of the Senillosa family papers. He succeeds in showing how landowners thought with different minds, his argument sometimes contradicting long-held but little-examined views on Argentina's history. The book is thick with useful efforts at revisionism, including the following. It is valuable to learn that by the 1890s not all the major landowners were still convinced free traders. Many readers will be surprised that they generally supported the broadening of the electoral franchise in 1912. When World War I placed a new set of stresses on the living standards of urban workers, some landowners could even identify with the appeal of socialism for organized labour.

The book works to set its discussions within a broader context. It is admirable to see discussions of political behaviour (including the impact of elections) that set Argentina alongside such exemplars as Mexico and Colombia. It is regrettable, however, that comparisons with the parts of Latin America where land use and social structure bore the closest resemblance to the pampas are fleeting and undeveloped. For example, the findings of the leading historians of rural change and politics in Uruguay are barely visible in either the text or the bibliography.

Hora makes valiant efforts to lead his readers through the dense thickets of Argentina's politics, although it is doubtful whether readers new to the region will follow all the nuances of Autonomists, Federalists, Personalists and myriad other groups. This reviewer gained some sympathy with Emilio Frers, a rancher lobbyist, who in 1891 thought he wanted to lynch all the 'ists' in his country's politics! Yet the discussions of politics in this book are ultimately stronger than the sections dealing with rural change, which at times seem disjointed. The book needed a closer focus on the mechanics of land-use change, specifically the roles of cultivation in meeting the challenges of ranch intensification. At times, the author seems to conflate ranching with farming.

Despite my reservations, this book is a valuable addition to the literature. It charts in detail the major vicissitudes of the landowners. Long before the advent of Peronism, they were seen as a central element in a national agrarian problem. But even as the sources of wealth for the country's landed elite showed dramatic change, Hora correctly points to the enduring strength of the estancia as a key element of Argentina's national symbolism. I suspect many would still echo the decades-old comment of one poor-born rancher from Italian cultural roots: 'at the bottom of every Argentine heart there is an *estanciero*'.

STEPHEN BELL
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ROGER MUNTING and TAMÁS SZMRECSÁNYI (eds), *Competing for the sugar bowl* (St. Katharinen, Germany: Scripta Mercaturae Verlag, 2000). xii + 193 pp. DM44.

Among the seemingly irreversible features of world change, such as the absolute declines in arable land, fisheries and forests, has been the rising curve of sweetener consumption, including sucrose and other caloric and noncaloric sweeteners. The human sweet tooth, abetted by technology, advertising, social emulation and affluence, is now increasingly global. But the picture of that ascent is enormously complicated by the diversity of sweeteners, the diversity of their uses, of custom, and of politics. This excellent collection of essays is based on a session of the Twelfth International Economic History Congress (1998) augmented by a couple of additions. It examines many different aspects of that secular but evolving trend.

The editors have arranged the papers in two parts, the first on rivalries between cane and beet sugars, and the second on rivalries between sugar and other sweeteners. There are ten papers in all. Since listing each essay with an explanatory sentence or two would fill up this review, it seems more useful to discuss certain major points, and to offer a judgement on the book as a whole.

So much has been written about sucrose from cane that the immense importance of beet sugar, particularly in and for Europe, may be missed by all but the experts. Chemically identical but not perfected and commercially viable until well into the nineteenth century, sucrose from sugar beets had wrested sixty per cent of the world market from cane by the century's end. Moreover, as was pointed out by Timoshenko and Swerling long ago, this was important politically and technologically, as well as economically: a perfect replacement for cane sugar was being produced on the temperate lands of the Metropole, rather than on the tropical lands of the colonies. As Munting and Perkins indicate, while the Spanish-American War briefly enabled the exportation of European beet sugar even to the U.S., the swift re-establishment of Cuba, the Philippines, Puerto Rico and other war spoils as American sugar colonies soon reduced beet sugar's world share again, to forty per cent from the sixty per cent it had briefly enjoyed. The cane sugar-beet sugar competition has persisted, now on different levels, since European states must balance concern for their former colonies against the pressures of domestic beet-sugar producers.

But the cane versus beet rivalry is only one of several; there is also sugar versus noncaloric sweeteners, and it is at least as byzantine a competition. In a stimulating essay, Merki traces the history of saccharin, and how it once was actively smuggled because its increasing use might reduce the profits of beet sugar producers and, accordingly, state revenues. Merki observes that, despite some health concerns, saccharin is still a legal sweetener in the United States. Szmrecsányi and Peláez Álvarez add that the enormous diet-beverage industry in the USA may have been on the minds of congressmen who have repeatedly postponed banning saccharin. And Polopolus, who examines the fight between sugar and corn sweeteners, discusses usefully how high-fructose corn syrup was able to take advantage of political changes to outshine sucrose in the US market. The massive shift from home cooking to eating out, and from buying foods to cook to buying cooked foods, has vastly increased the roles of fats, salts, thickeners of various sorts and sweeteners in the USA, and the trend is now also affecting other countries, as is the continued spread of diet beverages. But many of the relevant markets are quite volatile, and this book offers few predictions.

The reader is provided here with some excellent historical essays on sweeteners of all sorts. Particularly refreshing are the many discussions of taste, of differing class preferences, and of sweetener uses, matters often not much taken into account by economic historians. Published somewhat obscurely, this nicely provocative and interesting collection deserves much more attention than it is likely to receive.

SIDNEY W. MINTZ
Johns Hopkins University

VACLAV SMIL, *Enriching the Earth: Fritz Haber, Carl Bosch, and the transformation of world food production* (MIT Press, 2001). xvii + 338 pp. 5 figs. £23.95.

The school chemistry syllabuses of forty years ago contained much more on industrial processes than today's, and the Haber-Bosch method of nitrogen fixation was, if not at the inky fingertips of every schoolchild, at least something they might have heard about. The current student generation will be much better informed about what is going on at an atomic level when chemical reactions take place, but their chances of knowing how one of the most influential chemical processes of the modern world came to be developed are correspondingly diminished. This is a pity, because as the number of people in the world increases to nine or ten billion within the lifetime of this generation, over half them will be dependent upon the products of the Haber-Bosch process for their very survival. Already, according to Smil, the figure is two out of five, and this prompts his claim that the synthesis of ammonia was the most important technical invention of the twentieth century.

In some ways this present-day reliance upon artificial sources of nitrogen replicates, on a bigger scale, the problem faced by Germany in 1900, insofar as it was perceived at the time by Wilhelm Ostwald. The outbreak of the

Boer War made Ostwald, one of the leading German scientists, realise that conflict with a superior naval power would cut off imports and so deprive his country of the mineral nitrates that came from Chile and were used both for fertilizers and explosives. He set out to produce a substitute for Chilean nitrate, and soon notified the head of the chemical firm BASF that he had succeeded in synthesizing ammonia from its elements, nitrogen and hydrogen. If this were true he would indeed have solved the problem, for the ammonia could then be converted to ammonium sulphate fertilizer by treatment with sulphuric acid, or oxidised to make nitric acid for use in fertilizers or explosives, both of which processes were already well established. However, Carl Bosch, the young BASF chemist who checked Ostwald's claims, soon demonstrated that the small amount of ammonia he produced came from an impurity on the catalyst he used. Then, in 1904, a request from another chemical firm in Vienna provoked Fritz Haber, a lecturer at the Technische Hochschule in Karlsruhe who had worked on gas reactions, into carrying out further work on ammonia. His initial results were not encouraging, but they were criticized by another more prominent scientist, which prompted Haber to continue with his experiments. In 1908 these came to attention of BASF, who financed further work, and on 2 July 1909 Haber demonstrated the successful production of liquid ammonia to the firm's representatives. All that remained was to make it commercially viable.

Haber's method of combining hydrogen and nitrogen to make ammonia used very high pressures and an expensive osmium catalyst. BASF again gave Bosch the job of checking Haber's method and making it work on a commercial scale. In the following four years he designed pressure vessels and pumps that would withstand the high pressures required, and his colleagues developed a system capable of testing the catalytic ability of thousands of substances. They discovered a relatively cheap catalyst – magnetite (iron oxide) combined with the oxides of various other metals – which overcame the problem of the expensive osmium and is still the basis of catalysts used today. A further problem was to find cheap ways of producing the feedstock gases. Nitrogen was relatively straightforward: by 1909 techniques were available for liquefying air and then distilling it so that the nitrogen was separated from the oxygen. Bosch solved the more difficult problem of producing hydrogen using relatively cheap coal and water as raw materials, and by October 1913 a new factory was producing ten tonnes of ammonia per day and converting it to ammonium sulphate fertilizer. Although they generally use natural gas as the source of hydrogen, and are much more efficient in energy terms, present-day methods of ammonium synthesis, producing millions of tonnes each year, are fundamentally the same as this Haber-Bosch process.

Although nitrogen fertilizer production still requires much more energy than phosphates and potash, Smil calculates (p. 131) that it only needs about 1.3 per cent of all the energy derived from fossil fuels. The other feedstocks – mostly air – are readily available, so the extra nitrogen production needed to feed the world's expanding population will not be restricted by energy and feedstock supplies. The limiting factor might easily be the environmental impact of nitrogen. The annual industrial output of nitrogen is now almost as great as the amount fixed by natural processes on the continents, and only about half of it is incorporated into crops. The rest becomes nitrous oxide, which is a greenhouse gas, or becomes available to change aquatic ecosystems, often far from the farmed areas where the fertilizer was first applied. In this way human intervention in the natural nitrogen cycle is similar to intervention in the carbon cycle producing global warming, or in the sulphur cycle producing acid rain; the difference is that technical solutions are available for global warming and acid rain, but we do not yet know how to grow enough to feed the world's population without using the Haber-Bosch process. We are engaging, says Smil (p. 180), upon 'an unprecedented large-scale biogeochemical experiment whose eventual impacts we can predict only poorly'.

Only about one hundred pages of this book are strictly concerned with history. The other half of the text (and there are also another hundred pages of appendices and notes) is concerned with the present-day nitrogen fertilizer industry and its environmental impact. Smil himself recognizes this, suggesting various combinations of chapters for agronomists, ecologists and historians of technology. Agricultural historians will presumably be most interested in Chapter one, which contains an excellent summary of the gradual revelation of the role of nitrogen in soil and crops, Chapter two, on the world history of manures and the role of nitrogen in traditional farming systems, Chapter three, on the rise of the fertilizer industry in the nineteenth century, and Chapters four to six (and part of seven) on the work of Haber and Bosch and the subsequent development of the world nitrogen fertilizer industry. There is also a short postscript outlining the lives of Haber and Bosch – both eventually tragic – after 1913.

The whole book demonstrates the relevance of agricultural history to environmental history and to current environmental problems, and for that reason alone is well worth reading. It is also an excellent corrective to the Rothamsted-centred isolationism of the established British texts on the history of agricultural science.

However, Smil's account of the post-1918, and especially post-1950, development of nitrogen production emphasizes technical rather than business developments in accounting for change, to an extent which is debatable. By the late 1950s the fertilizer industry in the UK was attracting the attention of the Monopolies Commission, and since then, in both Europe and the USA, questions of over-investment, excess capacity, concentration, structural change, and international trade have influenced the development of the industry to a greater degree than this account appears to recognize. Thus the implications of the excess of world output (p. 127) over world consumption (Appendices L and M) are not pursued. The only other problem is a minor one – a misprint which exaggerates maximum fertilizer production in Appendix Q. Otherwise Smil is to be congratulated on a well-illustrated text which makes a complex chemical and environmental story fascinatingly clear for a non-technical readership while containing a wealth of references and data for those who need to know more about the details. And all congratulations this time to the publishers: Smil's book is in hard covers for under £24.

PAUL BRASSLEY
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PAMELA RINEY-KEHRBERG (ed.), *Waiting on the bounty. The dustbowl diary of Mary Knacksted Dyck* (University of Iowa Press, 1999). xiv + 365 pp. Illus. £30.50.

Pamela Riney-Kehrberg, an associate professor of history at Iowa State University, has edited a poignant diary by a farmwoman possessing no more than a fourth grade education. Mary Dyck, who was fifty-two years old when she began her diary, made entries from 1936 to 1955 while living on a fairly substantial farm in Hamilton County, Kansas. Because she began her daily record in the midst of drought, dirt storms, and distress, she observed the farm failures and rural depopulation of the depression era. With each observation, the inner-world of an ordinary farmwomen unfolded in an interesting account of family, community, and rural life.

In the first chapter, Riney-Kehrberg eloquently surveyes Mary's life on the farm and recognizes her household labour as a valuable source of income during the hard times. The subsequent six chapters organizes her diary entries chronologically by year, with only a brief interruption for a photographic montage. Although the edited text ends in 1941, the epilogue indicates that those who persisted in southwestern Kansas were in a fortunate economic position to take advantage of the agricultural boom accompanying World War II. Nevertheless, Riney-Kherberg found that her subject did not conceive of 'bounty' in terms of crops in the fields and remained 'depressed' after the dust bowl conditions abated.

To her credit, the historian allows Dyck to render much of her own woebegone tale. Her diary centred upon her relationship with her husband, Henry, as well as with her three children, Ervin, Thelma, and Verna. Using the third person voice in repetitive and random musings, Dyck displayed an uncanny ability to find humour in the midst of her misfortunes. In addition to the murky skies, she documented mundane activities such as cooking, canning, cleaning, and correspondence. She dwells upon the absences of her life, particularly once her children depart for new frontiers elsewhere. In response, she filled the emptiness with the presence of the radio, evidenced by her references to the plots of 'epesodes' from her favourite soap opera, Betty and Bob. As she lamented in 1937: 'Its very lonesome when we can't have much radio ...'. (p. 45).

Inexplicably, the historian chose to erase from Dyck's diary a number of the references to the radio broadcasts – a puzzling choice given the fact that the box seemed to be her most valued possession. Indeed, her rhythms and routines became anchored to the social drama carried over the airwaves. The diary is not as much about an ecological disaster as the editor's subtitle would have the reader believe. It is more about the dynamic consciousness of folks inhabiting what anthropologist Eric Wolf termed a 'peasant' culture. Her obsession with the broadcasts indicated the escapism provided by the technologies of desire and insinuated the lines of connection between traditional and modernizing societies.

Ostensibly, the farmwoman was coming to terms with the trauma of her condition, even as Depression America was making sense of modernity. Her words in a deeper and broader sense reveal that something other than bad weather was stirring the soul of the heartland. Comparable to the memoir of Lawrence Svobida and the diary of Ann Marie Low, this primary source opens a window into a private world. This particular cultural product of Mary Dyck's labours resonates with the anxiety of individuals coping with uncertainty. Readers will benefit from learning something about Mary and her dystopia.

BRAD D. LOOKINGBILL
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WYN P. GRANT and JOHN T. S. KEELER (eds), *Agricultural policy* (Edward Elgar, 2000). xv + 453 pp. (Vol. 1); x + 474 pp. (Vol. 2). £235.

Agriculture's success in obtaining government support, which long predates the establishment of the Common Agricultural Policy (CAP), has traditionally been justified by pointing out the consequences of its absence for food imports (with their strategic and balance of payments effects), farm incomes, and the rural economy in general. Unfortunately, this approach does not explain why other

small rural businesses, or industries such as coal and steel with similar trade implications, should not also be subsidised by the consumer or taxpayer, or why support has been at a relatively high level. Political explanations have therefore appeared. These have been based upon pluralism (agricultural pressure groups have been more successful than their rivals), or corporatism (agricultural interests have integrated more successfully with governments), or policy networks (emphasizing agreement on policy goals among a closed negotiating community), and have been more convincing than the traditional economists' defence. Rural historians have employed the insights of both disciplines for many years, but only recently have they begun to examine agricultural policy in the late twentieth century, and especially the CAP, so these two volumes of reprinted key articles might appear to be of interest both to policy historians looking for analytical frameworks and to those interested in studies of individual countries.

For historians of rural policy in the UK, perhaps the most useful of the analytical approaches are Martin Smith's two papers, in which he uses the policy developments of the 1930s, the 1980s, and the salmonella in eggs affair of 1988/9, to examine the policy community and issue network theories. Those with wider interests, especially in the possibilities of transferring the lessons of agricultural history in developed countries to the current problems of low income countries, will find much to provoke sober reflection in Friedmann and McMichael's paper on the role of agriculture in the development of the capitalist world economy. Papers on individual countries include an assessment of the impact of the New Deal on agricultural policy in the United States, an analysis of farm product mix and voting behaviour in France since 1958, and two papers on rural issues in post-Second World War Japan.

The two volumes together amount to over 900 pages, containing 48 papers, printed in their original formats (so that some but not all are prefaced by abstracts) and drawn from 22 different journals and four books, mostly but not exclusively by American and European authors. Each volume has a name index, and Volume One contains a six page introduction by the editors. The earliest of the papers was first published in 1979, but the majority date from the 1990s, with only nine from the 1980s. They are divided into six sections: policy theory, CAP reform, national perspectives on policy reform (all in Volume One), and trade liberalization, case studies of policy reform in the United States, New Zealand and Japan, and a final section on agri-environmental policy in various European countries. This framework, hardly surprisingly, reflects the policy concerns of the 1990s, with little or nothing on the emerging issues of the present decade such as food safety or EU enlargement. More curiously, despite the introduction's claim that these volumes 'bring together key articles ... on ... agricultural policy', there is nothing to suggest, either in the introduction or the selection of the papers, that anything was written on the subject before 1979. Neither would anyone beginning with these volumes suspect that the corporatist school had had much influence on the policy theory debate in the UK, although Keeler's paper provides a clear account of its impact in France. And although the papers include some from journals rarely available in UK university libraries, about half of them are from *Sociologia Ruralis*, *The American Journal of Agricultural Economics*, *Public Administration*, and *The Journal of Common Market Studies*. Given the ability to order a few inter-library loans, a sight of the contents pages of these volumes would be worthwhile; whether one could seriously recommend a librarian to buy them, given their cost, is another question.

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Conference Report: Winter Conference 2001 'The Great Landowners in Rural Society'

by Jane Whittle

This year's conference turned its attention to large landowners, returning to some old favourites: the great monastic landlords of the medieval period; the intensively studied parish of Earls Colne, Essex; eighteenth century country houses; and the notorious fall of the Grenville family in nineteenth century. The four papers illustrated the variety of perspectives from which landowners can be studied: the acquisition of landed estates, their role as landlords, and as employers in the construction of houses, and their fall from power due to indebtedness.

The theme of the first paper by Dr Phillipp Schofield of the University of Wales at Aberystwyth was the limits of lordly power in the period *c.* 1050 – *c.* 1300. Using the example of the Benedictine Abbey of Bury St Edmunds, Schofield examined the extent of landlord control over the tenant land market, arguing that even powerful manorial lords adapted to local circumstances and did not have a totally free hand in the way manors were administered. The Benedictines have a reputation as conservative and aggressive landlords, who burdened their unfree tenants with heavy, arbitrary exactions. The study of the peasant land market in the Bury manors of Hinderclay, Redgrave and Rickinghall, all in north Suffolk, show the limitations of lordship in the face of local custom and practice. Active land markets, especially in bond land, have been as seen as a sign of loose manorial administration. Yet these Suffolk manors had very active land markets in free and bond land from at least the early thirteenth century, when records begin. Comparison with Westminster Abbey manors in Essex suggest that Bury could have stamped out the market in bond land if they had wished to do so, but instead they tolerated the market, and raised a great deal of revenue from the entry fines charged each time a piece of bond land was transferred. As a source of income, fines rivalled rents. The pattern of land transfer on the Bury manors looks much the same as that on the manors of small lay lords in the same locality, such as Walsham le Willows. Thus it seems that manorial lords did not create or promote the market, but merely tolerated and regulated it. This begs the question of what the origins of such a market were, especially as it is absent from manors in other parts of England. Schofield argued that the large numbers of free tenants in the region, a hangover from the Danish invasions, was a key factor. By definition, free tenants had the right to give and sell land and there is evidence they were doing so by the eleventh century. There was no rigorous distinction between free and unfree land and status until the twelfth century, so it is likely the active land market affected other types of tenants and tenures as well. When firm evidence first becomes available in the thirteenth the land market in unfree land was well established.

The second paper brought us into the early modern period and the 'trials of estate formation'. Dr Henry French of Exeter University used material from a larger project on the land market of Earls Colne to examine the fortunes of the Harlackenden family, who purchased the two manors of Earls Colne from the de Veres, Earls of Oxford, in the late sixteenth century. Previously employed as the Earl's surveyor, Roger Harlackenden was in a position to accurately assess the economic value of his purchases. However, this case shows how the transfer of landlordship, and the realisation of wealth from landed estates, was rarely devoid of social content and conflict. Increases in entry fines before the sale suggest that the de Veres had not abandoned attempts to administer their estates with some efficiency before the sale, although other assets such as water mills were clearly undervalued even in new leases. The Harlackendens, however, were more assiduous lords: they had only two manors and needed to make them pay. They increased entry fines, so that copyhold fines in the 1590s brought in more than twice the amount they had in the 1570s. Demesne farms were let at market rents, although difficulties in finding tenants with sufficient capital to farm the largest unit of 320 acres led to it being split into three or four smaller units, contrary to the engrossing tendencies of the day. There were other problems too: de Vere took Harlackenden to court in 1598 for alleged

fraud committed in the agreement to purchase the manors. The tenants were hostile to their new lord as well: they had hoped to purchase the manor collectively themselves from the de Vere's, so the Harlackendens had also thwarted their ambitions. With the shadowy backing of their old lord, the tenants proceeded to make a series of legal challenges over terms of tenure in the next thirty years, some of which they won. The constant flow of court cases between lord and tenant were a drain on the Harlackendens' resources, and the manors only ever yielded a modest income: the family never purchased another manor.

The papers by Schofield and French illustrated not only how landlords influenced the rural communities of their tenants, but how tenants and their behaviour influenced the actions of landlords. The third paper, by Professor Richard Wilson of the University of East Anglia, examined another sphere of interaction between landlords and the local community: the impact of country house building. It set the building of country houses in its social context, looking at how money was raised, and how it was spent on employment and materials. The construction of gentry houses allows social mobility via the medium of building to be observed in action. Even though the minor gentry had relatively small houses, they had to be of a certain style, and families stretched themselves financially to achieve this. Four country houses built for the middling or lesser gentry in late eighteenth century Norfolk and Suffolk were used as examples: Letton Hall, Gunthorpe Hall, Heacham Hall, and Henham Hall. Letton and Gunthorpe were both designed by the famous eighteenth century architect, John Soane. They were fashionable but relatively small and simple, brick-built houses. Built in 1784–9, Letton cost £6000 and was built by craftsmen recruited from Norwich. Gunthorpe, begun in 1789, was at the lowest end of the gentry market, costing only £3000, reusing bricks from the old house. Even at this price the owner, Charles Collier, did not settle his bill with Soane until 1800 – although it appears that Soane did not charge interest. Heacham was another house that was probably built relatively cheaply. Dating from 1774–8, it was in effect, a large extension dwarfing an earlier Norfolk farmhouse. Detailed building accounts show that bricks and lime were made on site and the workers were local. There was no evidence of an architect, but chimney pieces were bought from a top designer, and furniture purchased in London, to give a quality feel to the finished house. Henham was a grander house than the first three, and its cost was concomitantly higher: initially estimated at £12,000, the final cost was actually £21,000. Built in the 1790s for Sir John Rous, later Earl of Stradbrook, it was designed by James Wyatt. The house cost seven times the rental value of the Rous estate, thus money received from an advantageous marriage was essential in allowing the plans to be carried out as intended. The house was built principally by day labour with 470 different men employed, although only 11 for the whole duration. Thirty of the men were from London, but the rest were local. Labour constituted 56 per cent of the cost, materials accounted for 35 per cent, and the remainder went on architects' fees. With the majority of the money invested in the project spent locally, this was surely a significant economic input in a period of sharp rural poverty.

The final contribution by Roland Quinault of the University of North London, re-examining the fall of the Grenville family, Dukes of Buckingham and Chandos. Their story illustrates what a minor element agriculture was in the fortunes of the most wealthy landowners by the nineteenth century. The fact the Grenvilles owned mostly farm land, with estates concentrated in Buckinghamshire, rather than land that could be exploited for urban development or mining, meant they could do little to raise their income from that source. Quinault argued that the fall of the family after 1822 was caused mainly by personal indebtedness, lost sources of political revenue following the Reform Act of 1832, and the expensive purchases of land in Buckinghamshire. However, despite the spectacular bankruptcy of the second Duke in 1848 with debts of £1.25 million, leading to the sale of property and goods, the decline of the family was gradual. The third Duke paid off some of the debts and retained the core of the families estates around Wotton and Stowe, as well as a measure of political influence. However, he had no male heir, and although his eldest daughter had four sons, she was widowed early and struggled financially; her eldest son was killed in the First World War, and the estate was finally sold in 1921. Thus the four papers nicely illustrate the changing roles of great landowners through the centuries: from powerful owners of servile tenants in the medieval period, to ambitious improvers of estates in the late sixteenth and seventeenth centuries, to ostentatious and self-conscious leaders of fashion in the late eighteenth, to a fading and increasingly peripheral element of British society in the late nineteenth century. Yet in none of the periods studied were they without problems: their power was always checked by assertive tenants, and their ambition for the display of status checked by limited revenues from the land.

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Editors:
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and Dr J. R. WALTON (reviews)

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The British Agricultural History Society

2002–3

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The Society aims to promote the study of agricultural history and the history of rural economy and society, amongst other ways, through (a) the publication of *Agricultural History Review* together with supplements and other apppropriate items; (b) the holding of conferences in its own right and in conjunction with other organizations; (c) the promotion of the conservation of historically significant landscapes and the rural environment; (d) the promotion of the teaching of the history of agriculture, the rural economy and society, and the environment, at all levels of education; (e) the promotion of links with societies and institutions in Europe and world-wide which have similar aims and objectives.

The society holds two conferences each year: a residential Easter conference (to be held at Winchester in 2003) and a London winter conference on the first Saturday in December. Details of these will be found in the *Review* and on the society's web pages. The society's conferences are open to non-members of the society.

Membership is open to all those who support the aims of the society. The annual subscription is £15 for individual subscribers and £35 for libraries and institutions. Subscriptions are due on 1 February annually. A standing order form is available from the Treasurer. There is a reduced rate for students not in full time employment and those registered unemployed of £5. Full details can be obtained from the Treasurer, BAHS, c/o Department of History, The University of Exeter, Amory Building, Rennes Drive, Exeter, EX4 4RJ (e.mail BAHS@Exeter.ac.uk) to whom all applications for and correspondence concerning membership (including changes of address) should be directed.

Correspondence concerning all other aspects of the society's activities, including its conferences, should be directed to the Secretary, BAHS, School of Cultural and Language Studies, London Metropolitan University, 166–220 Holloway Road, London, N7 8DB. Advance details of the society's meetings and other information concerning the society can be found on our web pages, http://www.bahs.org.uk/.

The Agricultural History Review
Volume 50 Part II 2002

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JOAN THIRSK, now retired, was Reader in Economic History in the University of Oxford, 1965–1983. Her research on English agrarian history ranged from the Middle Ages to the nineteenth century, but was centred on the sixteenth to eighteenth centuries. She was editor and part-author of *The Agrarian History of England and Wales* from 1975 to 2000, and published in 1997 *Alternative Agriculture. A History from the Black Death to the Present Day.* She is now working on food history, 1500–1750. Address: 1 Hadlow Castle, Tonbridge, Kent, TN11 0EG.

Forthcoming Conferences

British Agricultural History Society and Institute of British Geographers
Historical Geography Research Group

2002 Winter Conference – Saturday 7 December 2002

Institute of Historical Research, Senate House, Malet St, London

Popular Politics in Rural England

Dr Miriam Muller, 'Freedom through the court of law: peasant protest and ancient demesne in a fourteenth-century Wiltshire manor' * Dr Andy Wood, 'Rethinking popular politics in rural England, *c.* 1500–1700' * Dr Jane Pearson, 'Conflict and community in eighteenth-century Essex: the case of Great Tey'
* Professor Alun Howkins, 'The fight for the Headington Magdelens, 1850–1900: work in progress'

A booking form can be downloaded from the Society's website, BAHS.org.uk, or obtained from Dr Jane Whittle, History Department, University of Exeter, Amory Building, Rennes Drive, Exeter, EX4 4RJ

The Society's Spring Conference, 2002

The Golden Jubilee conference of the BAHS will be held on 9–11 April 2003 at King Alfred's College Winchester. Speakers will include Professors Doug Hurt, Chris Dyer and Richard Hoyle, and Drs John Hare, Bas van Bavel and Peter Dewey. There will be a new researchers' session and an excursion to the John Lewis Partnership's Leckford estate. In celebration of 50 years of the society, Professor John Chartres will lead a session of reminiscences, and the Jubilee prize essay will be read by the successful author.

Further details will be circulated to members in January 2003 and will be available from the BAHS web site.

Society Notice

Support for publishing projects

The British Agricultural History Society is keen to promote substantial publishing projects in agricultural and rural history. The Society already has its own series of supplements, of which two have been issued to date (Adrian Hall, *Fenland worker peasants* and Susanna Wade-Martins and Tom Williamson, *Roots of Change*).

Proposals for new supplements will be welcomed, as will suitable proposals for other sorts of publication. These could be (for example) books, edited collections of essays or compilations of source or archive material. Successful proposals are likely to focus on the agricultural/rural history of the British Isles. The *Review* does not publish work whose interest is essentially local, but local or regional case studies which appeal to a wide audience are entirely acceptable. The intention is to provide financial and editorial support to projects which are unattractive to commercial publishers but which are of value to the community of agricultural and rural historians.

Those interested are asked to discuss their proposals in the first instance with the Editor of the Review, Professor R. W. Hoyle, at the Rural History Centre, University of Reading, PO Box 229, Reading, RG6 6AG (e.mail r.w.hoyle@reading.ac.uk).

The British Agricultural History Society and *The Agrarian History of England and Wales:* new projects in the 1950s*

by Joan Thirsk

Abstract

Joan Thirsk is the last surviving member of the founding Executive Committee of the British Agricultural History Society. In this paper, drawing on her own recollections as well as those of her contemporaries, she describes the circumstances of the foundation of the BAHS in 1953 at the suggestion of George Fussell. She then recalls the establishment of the *Agrarian History of England and Wales* in 1956 on the initiative of the first editor of this *Review*, H. P. R. Finberg, and its subsequent travails, concluding with the triumphant publication of volume VII in 2000.

It seems to be a general rule of life that when new organizations, institutions, or societies are established, no one picks up a pen and records how the idea was formed, who joined in the first discussions, and how it moved forward to become something permanent. I suppose that people are too busy in the initial stages, devising ways of making progress to find time to write down the single steps that led them on. After all, at that stage one does not know whether the initiative will lead anywhere; it could turn out to be a failure. It is only when another forty or fifty years have passed, and people begin to look back on their success, that they hanker for more detail, and by then some of the most influential participants at the beginning are dead.

Such is the case with the founding of the British Agricultural History Society. Its minutes do not begin until some time after the Society was launched, and those who participated in the first efforts did not keep diaries or other records. Beginning even earlier in the story, however, I can write from lively remembrance of the public mood in which a society that explored the history of agriculture was thought to be timely. I lived through the deep agricultural depression in the 1930s. I possess a copy of a short essay, dated 1931, by Sir William Beach Thomas, and published by Faber and Faber, entitled *Why the Land Dies.* I recall the accounts of my brother-in-law, coming from a non-farming family in Huddersfield, who decided that he wanted to farm for a living, took his NDA in agriculture at Leeds University, worked as a learner on four farms, and then searched for one to rent. In 1934, at the age of 22, he found a farm of 135 acres without difficulty. It was one of six on an estate in West Yorkshire of which four were untenanted. He took one from which the farmer was retiring, and saw the estate workers trying to 'farm' the other four, cutting the hay, but having to watch the stooks rotting on the ground

* I warmly thank Professor Ted Collins, Professor Alan Everitt, Mr Michael Havinden, and Professor Eric Kerridge for help and comments on this essay, though it remains my personal account for which I alone am responsible.

for lack of labour to do more. He married my husband's sister, and they lived frugally on a small income. His accounts were vetted by the economists at Leeds University, and Harwood Long was his particular scrutineer. Harwood became an active member of the Society, and I remember him well. But my sister-in-law always recalled having prepared for Harwood the traditional, sumptuous Yorkshire tea for his farm visit, only to read afterwards his dispiriting account of the year's financial outcome on their farm.

So the thirties passed until the war came, when farmers were suddenly needed to feed the nation against the threat of near starvation. They responded heroically, and the whole population became fully aware of what it owed to farmers for feeding them through six long years of war. A thoroughly neglected branch of the economy had been brought to the centre of the stage, and as a result interest in the history of farming was galvanized in an entirely fresh way.

Hence it is not difficult to see why the idea of setting up a formal society for the study of agricultural history should have been born at that time. A similar stimulus was at work in West Germany, and the Society for Agrarian History (Die Gesellschaft für Agrargeschichte) was set up in 1953, though a society for the history of literature and the rural economy had existed there between 1904 and 1942, so that effectively the society was being re-launched. It maintained contact for many years with the BAHS, and many books for review were exchanged. It is much to be regretted that that association has faded. Elsewhere in Europe similar trends of interest in agriculture and rural life resulted in other notable initiatives, for example, in Holland, Denmark and in Hungary, in the setting up of agricultural and open-air museums; for many years an ambitious bibliography of *European* agricultural history was published from Budapest. A much fuller European story than can be attempted here lies in the background to the founding of a British society of agricultural history, while at home too, other related developments clustered around it. The Welsh Folk Museum had been founded in 1948,[1] and the Museum of English Rural Life in 1951: the specialist journal on folklife, *Gwerin*, began in 1956, and the English Society for Folklife Studies was set up in 1961.

The initiative for setting up our society lay, most definitely, with George Fussell, who had been a relatively lonely scholar in the field all through the 1920s and 1930s. He had taken up a junior post at the Ministry of Agriculture in 1909, showed literary interests and what he called 'a writing itch', and was encouraged by his superior. He wrote articles for the Ministry of Agriculture's *Journal* through the 1920s, others in the 1920s and 1930s for *The Economic Journal*, *Economic History* and the American journal *Agricultural History*, and by 1933 he had become sufficiently recognized as an authority on agricultural history to be elected a Fellow of the Royal Historical Society. Fussell was unquestionably the leading agricultural historian on the eighteenth and nineteenth centuries in the inter-war years, and he maintained his steady output of books and journal and newspaper articles until about 1953. They numbered over 500 in all.

Fussell had no formal academic training, but he had ready access to the library of the Ministry of Agriculture and became a regular reader in the Reading Room of the British Museum. He

[1] Some measure of the difference wrought by the passage of fifty years was brought home to me while I was writing this essay in July 2002, when a neighbour returned from a visit to the Welsh Folk Museum, finding herself there on a special day for school visits when three thousand children were present.

attended the medieval seminar of Hubert Hall at the London School of Economics, and the most cursory reading of Hall's works, especially his *Society in the Elizabethan Age* (1886), is enough to show the stimulating range and slant of his interests.

I daresay that someone still living knows more than I about Fussell's first ideas for setting up an agricultural history society, but it is unlikely that he thought seriously about taking action until after he had retired as librarian of the Ministry of Agriculture in 1949, and had time to ponder such a project. Eric Kerridge had known Fussell since 1947, when Fussell had helped him at the ministry's library with difficult words in Wessex dialect while Professor Kerridge undertook his doctoral research on Wiltshire agriculture. He recalls being invited by Fussell to dine one evening at the Café Royal (Fussell's known watering hole) along with Robert Trow-Smith, another crony who was editor of *The Farmer and Stockbreeder*. They met to discuss the setting up of such a society, and, writes Professor Kerridge, 'Fussell made the proposal, Trow-Smith seconded, and the motion was passed unanimously. I agreed to be temporary acting treasurer until such a time as a society was formed'. Eric Kerridge was working in an Economics Department at the time, and thus he explains why he was thought to be the right person to be the treasurer. It happened again, he says, when he joined the Chester branch of the Historical Association; he became its treasurer, but was never invited to give a lecture!

Thereafter, Fussell must have recognized that he had to find a university to give the project a secure anchorage, and so it happened that John Higgs, Keeper of the Museum of English Rural life at Reading University, took charge, and managed affairs as soon as the project took firmer shape. A meeting of interested people assembled at the Science Museum in London in the autumn of 1952 when Sir James Scott Watson, Chief Scientific Adviser to the Ministry of Agriculture, took the chair. (Scott Watson had historical interests, and had written a book on *Great Farmers* with May Elliot Hobbs in 1937, and a history of the Royal Agricultural Society in 1939.) Some 420 people attended: John Higgs was designated secretary. Prominent already in supporting the project was Alexander Hay, Secretary of the Association of Agriculture, which had for many years promoted the understanding of agriculture in an industrial world. Hay was a staunch supporter of the new society, giving valued financial assistance in the early days and drawing both organisations together as they promoted courses and a regular winter conference in London, which continues still.

A provisional committee was set up at the London meeting in 1952, and when it next met in Scott Watson's rooms at the Ministry on 12 November 1952, other participants, not already named above, included Professor Edgar Thomas, Professor of Agricultural Economics at Reading, author of *The Economics of Small Holdings* (1927), based on Carmarthenshire, Frank Atkinson, Keeper of the Halifax museums, later to become Keeper of the Bowes Museum in Barnard Castle, and finally the founder of the Beamish Museum in County Durham, F. G. Payne, Keeper of the Welsh Folk Museum at Cardiff, and W. E. Minchinton, Lecturer in Economic History at University College, Swansea. The numbers attending the meeting at the Science Museum had instilled confidence in the success of the enterprise, and so a formal foundation meeting was arranged for 13 April 1953 at Reading. The strong support that was to be given henceforward by Reading University was then made plain. That meeting was welcomed by J. F. Wolfenden, the Vice-Chancellor; Scott Watson spoke on 'The scope of Agricultural History', and Sir Frank Stenton on 'The manor in English History'. Both Sir Frank and his

wife, Doris Stenton, taught at Reading (Sir Frank had recently retired as vice-chancellor); both stood high in academic esteem as scholars in medieval history. Those attending also had the chance to look round the recently founded Museum of English Rural Life.

The setting up of an agricultural history society was thus agreed, its object being to study the history of agriculture and the rural economy; the subscription was fixed at one guinea. Scott Watson became the first president, Edgar Thomas the Treasurer, and the committee comprised all those already chosen in London, plus myself, Roger N. Dixey, Director of the Institute of Agrarian Affairs at Oxford, Captain E. N. Griffith, President of the Agricultural Engineers' Association, Stuart Maxwell of the National Museum of Antiquities at Edinburgh and George Ordish, an expert on pest control who worked for Plant Protection Limited. He showed his historical perspective when he wrote on vineyards, one of his books, *Vineyards in England and Wales* (1977) also describing his own vine-growing in Kent.[2] Alexander Hay became chairman of the Executive Committee. Although Herbert Finberg's name does not appear in this list, he had taken an active interest in the setting up of the Society and he was soon designated editor of its planned journal. He had succeeded W. G. Hoskins as head of the Department of English Local History at Leicester in 1951, and was then best known for his newly published study of the medieval estates of Tavistock abbey (1951) and his scrupulous, quizzical examination of Anglo-Saxon charters and their boundaries. But these subjects until now had been his leisure interests, for he was by profession a publisher of fine books, a typographer, and founder of the Alcuin Press. This press was first based in Chipping Campden, then moved to Welwyn Garden City in 1935, and thus brought Finberg onto the doorstep of the record office of the Dukes of Bedford, owners of the Tavistock estates. Part of his book on Tavistock was written while fire watching during the war.[3]

The Society had now enrolled a highly varied group with rural interests, for which John Higgs deserved most credit. Higgs proved to be an ideal choice for a secretary: he was less of a scholarly agricultural historian than a dynamic entrepreneur with wide contacts. He divided his life between academia and running his own farm at Enstone in Oxfordshire, and he would later buy an estate in Scotland. He moved on to be bursar at Exeter College, Oxford, then worked at FAO in Rome, and finally became Secretary to the Duchy of Cornwall and an influential adviser to Prince Charles until his untimely death in 1986. People say that Higgs (or rather Sir John, for he was knighted shortly before he died) was one of the influences in stimulating Prince Charles's interest in rural communities and organic farming.

John Higgs had an admirable style at meetings, bringing a certain ceremonial dignity to every occasion, which successfully enhanced the status of the young society. His plans for the agricultural museum at Reading brought him into an international circle of forward-looking professionals creating rural museums in a new image. He had visited the Danish National Museum in Copenhagen, where he met Axel Steensberg, and was much impressed by the Danish initiative in establishing an open air museum. Our Society benefited in due course, for at the annual conference of the BAHS in the Spring of 1956 in Nottingham, Axel Steensberg gave a

[2] His wife, Olive Ordish, was the translator of Wilhelm Abel's influential book, *Agricultural Fluctuations in Europe from the thirteenth to the twentieth centuries* (1980, first published in German in 1935).

[3] Finberg's career is felicitously recounted by Maurice Beresford in the *Festschrift* for him, Joan Thirsk (ed.), *Land, Church and People*, Supplement to *Agricultural History Review* 18 (1970), pp. vii–xii.

paper on prehistoric husbandry experiments in Jutland; in my mind's eye, I have a clear picture of him as an enthusiastic member of our field expedition that year. The invitation to Nottingham, incidentally, came from Audrey Beecham, who was warden at one of the university's halls of residence. She was another colourful figure at all our gatherings, a deeply committed early member of the BAHS, who had served in the war as a FANY, had duly received a training in car maintenance, and always drove a large vintage car. (Alan Everitt remembers that she owned three Alvises.)

Recruitment to the society was encouraging. It counted 181 members by September 1953, 391 by February 1956, and was proud to number many farmers alongside its scholarly academics – a situation that continues to the present day. Agricultural history in those days figured routinely in the syllabus of students of agriculture, and Ted Collins recalls among the teachers of the subject at Reading, Edgar Thomas, John Higgs, Andrew Jewell, who succeeded John Higgs as Keeper of the museum, and himself. In the liberal traditions of the past, economists, scientists and trainee-farmers were expected to know something of Britain's agricultural history; the ending of that tradition has deprived them of vital information and the perspective which they plainly need today, as recent problems and policies testify.

The first issue of *Agricultural History Review* was produced by Finberg with remarkable speed, appearing in the early days of January 1954. Its publisher was the Broadwater Press in Welwyn Garden City, of which Finberg had been director from 1936 to 1944. I shall never forget our quite magnificent proof-reader at Broadwater; like Finberg, or better, she had an eagle eye for typing errors and inconsistencies, and her supreme efficiency commanded universal admiration. I doubt whether any reader found a single error in the issues of *The Review* in her day.

The Society's annual conferences in March or April each year became convivial, as well as academically rewarding, occasions, and always included an afternoon expedition of some sort. We once visited the archaeological site at Hound Tor on Dartmoor, led by W. G. Hoskins; we inspected a deserted medieval village on another occasion; often we were taken round working farms. Around Easter the weather is always a hazard, and it is not difficult to picture, then as now, members' fortitude on windswept moorlands, in pouring rain, or trudging through the deep mud of the farmyard. Herbert Finberg on these occasions will for ever live in our memories, for, although he had a deep sympathy with the country life of the past, he arrived at every conference in a black overcoat and black trilby hat, dressed as if for an engagement in the City; he never looked ready to poke his head into cowstalls. He was also famed among us as a gastronome, and we awaited his judgement on the food in the hall of residence with trepidation. George Fussell was another of our memorable characters and faithful attenders at conferences, almost to the end of his life. He usually sat in the front row of the lecture hall, loudly snorting 'Nonsense' at anything with which he disagreed.

As editor of the *Review*, Finberg was a meticulous scholar. He was also a bold projector of publications. In the third year of the society's existence, in January 1956, he proposed to inaugurate an *Agrarian History of England and Wales*, which would be a multi-volumed work that would take many years to complete. He put his plan before a meeting of eighteen scholars at University College London on 14 January 1956, at which R. H. Tawney took the chair. Those attending were mostly senior scholars in pre-history, historical geography (Professor H. C. Darby had arranged the place of meeting), economics and economic history and the

scheme received their warm support.[4] It was hoped that the Scottish historians might be persuaded to initiate their own history at the same time, but they decided that the idea was premature.

Young Turks have been heard to say these days that the project for a grand survey of our agricultural history was a mistake, but they live in a world of scholarship that was actually created by *The Agrarian History* and *The Review*. They take for granted the level of interest and the scope of research in the subject since 1950; the contrast with the period before 1950 is just not readily understood by those who did not experience it for themselves. Writing to Maurice Beresford on 28 July 1953 (in a letter, which like all letters from Finberg sitting in a file, stands out prominently from the rest because he was such a fine calligrapher), Finberg remarked on the current state of agricultural history, saying that many people 'imagine that agricultural history begins with the introduction of the turnip'.[5] It was fair comment. Finberg looked forward to Beresford's help in dispelling that illusion, and that support was instantly given when Beresford wrote an article that appeared in the first issue of *The Review* on 'The Poll Tax and Census of Sheep, 1549'. It is one illustration of the broadening scope of agricultural history that gave the subject a new image. Beresford's contribution, in fact, went well beyond that article, for along with John Hurst, and alongside Hoskins's work, he was opening out another aspect of agricultural history in the study of deserted medieval villages. He was not only identifying and listing them but actually digging them up, notably at Wharram Percy. And in making all this known to readers of books, none of us, I think, wrote and writes more beguilingly than Maurice.

Finberg's plan for *The Agrarian History* was built on the expectation that the first volume to be written would deal with the early modern period. I was then Senior Research Fellow in Agrarian History in the Department of English Local History at University College Leicester, having been appointed by Hoskins in 1951 to embark on a study of Lincolnshire agriculture. The Clapham committee had earlier examined the state of economic history in general, and as a result money had been allocated to promote research in the field. G. D. H. Cole had alerted Hoskins to the funds that were available, and so Hoskins applied, and was granted enough to pay for a research post for three years, 1951–54. By 1956 I had finished my study of Lincolnshire (it was published in 1957 as *English Peasant Farming. An agrarian history of Lincolnshire from Tudor to recent times*), and Finberg now asked me to take on the sixteenth-century volume of his *Agrarian History*, and, first, to draw up a plan for the contents.

I had been alerted by my Lincolnshire studies to the supreme importance of identifying distinct farming regions, rather than taking county boundaries as a framework, and that became a feature of my volume and others, though in planning them, separate editors were given a free hand to rank their themes as they wished, and notable differences resulted; not all volumes, for example, dealt with farmhouses and buildings, through which regional as well as class differences could be perceived. In strengthening my perception of regions, I acknowledge a deep debt to G. H. Tupling's splendid book on *The Economic History of Rossendale*, first written

[4] The full list of what became an advisory committee is set out on p. viii of volume IV of *The Agrarian History*.

[5] Contained in a file of correpondence and papers concerning the *Agrarian History*, donated by Prof. Beresford to the Society's archives held at the Rural History Centre.

as a Ph.D thesis as long ago as 1924, and revised for publication in 1927.[6] The notion of regions had run quietly through R. H. Tawney's *Agrarian Problem in the Sixteenth Century* (1912), but, following Tupling and some other inter-war historians, our *Agrarian History* gave them such prominence that it is not too much to claim for ourselves much of the credit for public concern these days to preserve the varied cultural traditions of our regions.

Another dimension was given to our researches in the 1950s by the setting up or expansion of record offices, making historians conscious of the great wealth of documents on agrarian affairs that awaited systematic study. New collections were steadily arriving for deposit in places where they could be publicly consulted for the first time. So while I was recruiting some ten authors for volume IV, I was intent on exploiting this treasury of manuscripts, and it was plainly necessary to think of a way in which all the county archives could be visited; it was impossible to envisage all authors visiting all counties for themselves. We needed research assistance, and were extremely fortunate to secure a grant from the Nuffield Foundation, which was renewed once subsequently, to pay for researchers to visit the county record offices. We were able to appoint Alan Everitt to examine the archives in the Public Record Office and in Kent (where he lived). He then became a contributor to the volume, writing chapters on marketing and the agricultural labourer. We were also supremely lucky in having the services of Margaret Midgley, who was a most experienced medievalist. She had edited a volume of Ministers' Accounts for the Earldom of Cornwall for the Camden Society in 1942, and later worked for the *Staffordshire Victoria County History*. I often find myself these days returning to her transcripts, with admiration for her skill and care. She had no desire to write any text for volume IV; I would have sympathized with her if she had so wished, and would have endeavoured to satisfy her. But she preferred to gather material for the rest of us. When she finished work for volume IV, she continued collecting material for the medieval volumes.

Scholars are assisted nowadays by so much technology, and so many labour-saving devices, that it is worth recalling our handicraft usages of the past. Alan Everitt and I were both at work on the London archives, but we had no office, no stationery, and no reference books at our elbow. We used to meet at intervals, in the forecourt of the British Museum, or if raining in the vestibule(!), to discuss progress; Alan recalls one occasion when we resorted to a quiet corner of George III's King's Library, a usually deserted place that functioned generally as a corridor to other parts of the museum. We each devised our own note-taking methods, and housed all our papers in shoeboxes. Miss Midgley had received guidance from all authors on the classes of material to look for in each county record office, so she chose her own itinerary, surveyed the scene in each record office, often working in the local history room of the public library as well. She transcribed the relevant documents, making one top copy and one carbon, and when I received her packages of transcripts, I took my own notes and sent the two sets on their rounds, so that in the end they were seen by all authors. The final work was based on a great variety of original documents from many record offices; we were not summarizing only knowledge that was already somewhere in print.

The work on volume IV had begun in 1956 and was completed in about eight years. I had selected as authors younger historians of my generation who were not already overcommitted

[6] Chetham Society, new ser. 86 (1927).

to other tasks, and so the work proceeded relatively quickly. It took twice as long to finish volume V, 1640–1750, which started around 1967, and was ready by 1983, published in 1984–5.

The search for a publisher started with the hope that Leicester University would undertake the task. By then it had a university press of its own, spurred on by the enthusiasm of Finberg and Professor Jack Simmons, the railway historian. But the press was small and it lacked the courage and the resources. We counted it our great good fortune that the Cambridge University Press became our publisher. It had published H. C. Darby's two volumes on the fenland and its drainage history in 1940, and proceeded in the 1950s with the volumes of Darby's Domesday geography. The *Agrarian History* had found a congenial home. Subsequently the Cambridge University Press became a distinguished publisher of many more works pertaining to agriculture and historical geography, and in 1989 it proudly issued a catalogue entitled *New and Recent Books on Agricultural History*, which ran to twenty pages, and noticed thirty-eight books besides the volumes of *The Agrarian History*.

I vividly remember the meetings which Finberg and I had with editors at the Cambridge University Press, and I dare say that some of them remember Finberg equally vividly! He was, after all, a uniquely experienced editor and publisher, and so expected to impose his style where other editors bow to the prescriptions of their publisher. Cambridge agreed to abide by Finberg's editorial usage, so long as all contributors adhered to it consistently, and Finberg saw to it that they did. When the manuscript of volume IV was handed in at Cambridge, its recipients were told that every full stop and comma were in place; they should make no alteration whatsoever. On one issue, however, I saw Finberg obliged to capitulate. As my volume was passing through the press, Finberg wanted to make a slight change to the lettering on the spine. Cambridge's editors were accustomed to a long chain of command, and told Finberg that the alteration he wanted would delay publication for at least three months. His rueful comment to me later was that it would have taken five minutes at the Broadwater Press, where editor and typesetters worked under the same roof.

Finberg's editorial style was made known to all authors at an early stage, and the spirit that suffused it deserves its memorial here. It is contained in his advisory document to authors from which I quote verbatim. First, *The Agrarian History* is intended to be a history 'not of processes, trends, or problems, but of human beings, namely English countrymen of all ranks; second, that consequently the English countryman should never be far from the centre of the stage; third, that any sentence of which the subject is an abstract noun, and the verb some form of the verb 'to be' can be re-written with advantage'.[7] These precepts will always remain deeply embedded in my head and in my own aspirations. They may explain some of my editorial corrections to the work of authors which have mystified, or even offended, them. As precepts, written over forty years ago, they deserve to be remembered alongside the judgements of some present-day journalists and reviewers of current television programmes, believing mistakenly that history writing for the public is nowadays guided by new and original notions to win their interest, in contrast with the work of past scholars, depicted as living in ivory towers remote from the everyday world.

The planning of all eight volumes of *The Agrarian History* was accompanied by the usual

[7] A copy of Finberg's 'Notes for contributors' is also held in Prof. Beresford's file (n. 5).

unforeseen accidents and unexpected withdrawals that delayed completion. But it *has* now reached its conclusion, though the last volume to appear, number VII, covering 64 years up to 1914 runs to 2,277 pages, whereas volume IV managed with less than half that length (919 pages) to survey 140 years. Finberg originally envisaged a work of seven volumes, which would end in 1914. But Edith Whetham became the editor of an eighth volume, carrying the history from 1914 to 1939. She was a most knowledgeable historian on the inter-war history of agriculture, and always a shrewd, brisk contributor to our discussions at conferences. She had been immersed in the world of farming and policy-making throughout her childhood, for she was the daughter of Sir William Dampier, who, among other things, had been a member of the Agricultural Wages Board through the 1920s and 1930s. Edith later worked on the official history of wartime food production, 1939–45. She had intended to share her volume of *The Agrarian History* with another author but in the end she was the single-handed writer, in contrast with the others.

Every volume has its own story of hopes deferred, fulfilled or disappointed. Finberg expected that volume I would follow the publication of volume IV, and part (ii), covering the period 43–1042, did, indeed, do so in 1972. This contained Finberg's own chapter on Anglo-Saxon England. But part (i) on prehistory, edited by Stuart Piggott, waited until 1981. As the years wore on, the teaching and administrative duties of academics squeezed their time for research; often it could only be retrieved during their evenings or leisure hours at weekends. I am the best informed of all of these trials and tribulations for I took over as editor in 1975.

Now twenty-five years later the series has been completed, and we have a survey of English and Welsh agriculture that is likely to serve another fifty years. Such large synoptic histories are invaluable, but they are needed only at long intervals. Lord Ernle's heroic study had been published in 1912, and it was not until 1956 that scholars grew restive and wanted a fresh one; even so, the continuing value of Ernle's book was recognised in its re-issue in 1961. Now we must wait for the emergence of fresh viewpoints on the broader scene, before another large survey is thought necessary. We know that a certain lapse of time is needed before a new perspective is recognised. But that reappraisal has to be illuminated by a host of other intervening changes involving matters well removed from agriculture, before a fresh pattern appears. The future of agriculture is much debated, but its context is undergoing a fundamental transformation, and that must stabilize before another satisfactory farming regime establishes itself on new foundations. None of us can confidently predict in which new direction agriculture will find that confident future, and no one will want to conduct another survey while our view over that wide landscape remains clouded in a mist.[8]

[8] *The Editor of the Review adds: Agricultural History Review* welcomes further recollections of the early years of the Society. The Society is also eager to expand its rather meagre archive. Donations, loans, or documents which might be photocopied and returned should be sent to the editor of the *Review* at the Rural History Centre, University of Reading, where the Society's archive is now held.

Medieval sheep-corn farming: how much grain yield could each sheep support?*

by Edward I. Newman

Abstract

In medieval times sheep were commonly grazed on pasture land by day but folded on arable each night. This was recognized as a way of improving the soil fertility of the arable. This paper calculates how much nitrogen, phosphorus and potassium per sheep would be transported to the arable by this practice, and hence how much grain export from the farm could be supported without soil fertility declining. The answer it is suggested, is about 3–5 bushels of grain per year per sheep. Applying these figures to data from demesne accounts of the thirteenth and fourteenth centuries shows that on some demesnes the number of sheep was fully adequate to maintain soil fertility, but on others it fell short.

There has been interest among historians in the suggestion that during some periods of the Middle Ages the fertility of farm soils was declining, leading to deteriorating yields of crops and, in some years, to starvation.[1] One cause of decline in the fertility of soil is a decline in its nutrient status. Mineral nutrients are taken up by crop plants and thus are removed from the field at harvest. If this removal is not balanced by an equal input, the fertility of the soil will decline. One way that nutrients can be added to arable soil is in animal manure. The role of manure in maintaining crop yields has frequently been discussed by historians.[2] Postan proposed that by the late thirteenth or early fourteenth century 'in corn-growing parts of the country taken as a whole, pasture and the animal population had been reduced to a level incompatible with the conduct of mixed farming itself'.[3] He did not say what animal population would be adequate to support mixed farming. Medieval records report that people carted and spread dung; sometimes they were fined for collecting it when they should not. As Dyer succinctly put it: 'Peasants certainly appreciated the value of manure, which was bought, sold,

* I thank Professors B. M. S. Campbell, C. Dyer and J. Langdon for helpful suggestions and information.

1 W. Denton, *England in the fifteenth century* (1888), pp. 153–6; M. M. Postan, *The medieval economy and society* (1972), pp. 67–79; M. M. Postan, *Essays on medieval agriculture and general problems of the medieval economy* (1973), pp. 15, 172; C. Dyer, *Standards of living in the later Middle Ages* (1989), pp. 5–6; B. F. Harvey, 'Introduction: the "crisis" of the early fourteenth century', in B. M. S. Campbell (ed.), *Before the Black Death* (1991), pp. 1–24; B. M. S. Campbell, *English seigniorial agriculture, 1250–1450* (2000), pp. 16–19.

2 J. A. Raftis, in H. E. Hallam (ed.), *The Agrarian History of England and Wales*, II, *1042–1350* (1988) (hereafter *Agrarian History*, II), p. 338; C. Dyer, in *Agrarian History* II, p. 377; P. D. A. Harvey, in E. Miller (ed.), *The agrarian history of England and Wales*, III, *1348–1500* (1991) (hereafter *Agrarian History*, III), p. 263; E. Miller, in *Agrarian History*, III, pp. 285, 290; Dyer, *Standards of living*, pp. 127–8, 143; C. Thornton, 'The determinants of land productivity on the Bishop of Winchester's demesne of Rimpton, 1208 to 1403', in B. M. S. Campbell and M. Overton (eds), *Land, Labour and Livestock* (1991), pp. 183–210.

3 Postan, *Medieval economy*, p. 65.

borrowed and stolen'.[4] This paper concentrates on another method that was used to apply faeces and urine to arable: the practice of folding sheep there at night. It starts from the assumption that the folding of sheep could supply enough nutrients to support a certain grain production and export (per animal) without the nutrient status of the soil declining. It uses scientific information to estimate how much grain could be grown from the dung and urine of a typical sheep. It then goes on to apply this estimate to a number of well-documented medieval farms to establish whether or not they had enough sheep to maintain their crop yields in the long term.

I

All plants, including crop plants, require certain essential mineral nutrient elements in order to grow. This paper will concentrate on three elements, nitrogen (N), phosphorus (P) and potassium (K), the three that are most often limiting to modern crops in Britain if artificial fertilizer is not applied. Cereal plants must obtain these from the soil. Leguminous crops such as peas and beans can obtain N from the air, with the help of bacteria in their roots, but their P and K must come from the soil. When a crop is harvested, some of the N, P and K taken up is removed in the seed and straw. In medieval times some of the nutrients in seeds were returned to the soil, e.g. in seeds sown the following year, and in manure from farm animals that had been fed on grain. All the nutrients in straw were returned to the soil. However, some of the nutrients were exported from the farm, e.g. in grain sold or sent to an absentee owner.

The sheep-fold system, which was widespread in medieval times, involved the sheep grazing by day on pasture land, but being folded each night on arable stubble or ploughed fallow. The value of this practice for contributing to soil fertility was recognized in medieval times, as shown by regulations governing it, and sometimes payments for it, as well as contemporary instructions to let the sheep 'donge and pysse' on the fold.[5] The food which sheep ate during the day in the pasture land contained mineral nutrients which the pasture plants had taken up from the soil. At night the sheep's faeces and urine deposited on the arable some of the nutrients they had eaten in the pasture. The sheep were thus acting as transporters of nutrients to the arable. If the sheep are adults, and not producing milk, virtually all of the nutrients in their food must come out in the faeces and urine. In fact, almost all the P is in the faeces and scarcely any in their urine, whereas N and K are lost in both urine and faeces.[6] The first aim of this paper is to calculate how much N, P and K an average medieval sheep transported per day from the pasture to the arable. It thus emphasizes input to the arable: the calculations do not include return of nutrients that had been taken from the arable, for example in dung from animals

[4] P. D. A. Harvey, *A medieval Oxfordshire village: Cuxham, 1240 to 1400* (1965), p. 83; N. S. B. Gras and E. C. Gras, *The economic and social history of an English village* (1930), pp. 47, 206; Dyer in *Agrarian History*, III, p. 232.

[5] E. Kerridge, 'The sheepfold in Wiltshire and the floating of the watermeadows', *EcHR* 6 (1954), pp. 282–9; E. Kerridge, *The common fields of England* (1992), pp. 74–86; P. F. Brandon, 'Demesne arable farming in coastal Sussex during the later middle ages', *AgHR* 19 (1971), p. 130; J. N. Pretty, 'Sustainable agriculture in the middle ages: the English manor', *AgHR* 38 (1990), pp. 1–19; Dyer, in *Agrarian History*, II, p. 377; Sir Anthony Fitzherbert (attrib.) *The book of husbandry*, ed. W. W. Skeat, English Dialect Soc. 37 (1882), p. 28.

[6] N. J. Barrow and L. J. Lambourne, 'Partition of excreted nitrogen, sulphur and phosphorus between the faeces and urine of sheep being fed pasture', *Australian J. of Agricultural Research* 13 (1962), pp. 461–71.

housed on straw and fed on grain. The paper then calculates how much grain would contain the amount of N, P and K transported per sheep per year; that is the amount of grain production and export that folding one sheep could support.

Among the few published attempts to calculate nutrient balances for historic farms was that by Newman and Harvey for the medieval demesne at Cuxham (Oxfordshire).[7] It had few animals; they were included in calculations of nutrients exported from the farm, but no calculations were made of transport within the farm. Dodgshon and Olsson have made calculations of N and P cycling on eighteenth-century farms in the Scottish Highlands and in southern Sweden, which involved animal manure.[8] At the Scottish sites nightly folding of animals occurred only in summer, and only on the outfield. The infield received manure from cattle housed in winter, from animals grazed on stubble and from human excreta. In the results these manure inputs are not separated, so transport to the arable is not separated from recycling within it. Sheep manure was only a small proportion of it. The N and P in this total manure was sufficient to balance the amount in grain harvested at three of the sites but not at two others. There were other nutrient inputs to the arable, including in turf applied. The calculations for southern Sweden show that two farms that had access to hay meadows and extensive pasture had an N and P input to their arable that was more than sufficient to balance N and P harvested in the crops; but a village with less meadow, little pasture and fewer animals had an N and P input to arable which was less than was in the crops. Unfortunately, little information is given about the calculations. The text implies that the manure came only from cattle when housed in winter: although there were also sheep, horses and pigs, the possible contribution of their manure is not mentioned.

There have been calculations of the number of sheep per arable acre, or of 'animal units' per 100 arable acres, where sheep, cattle and horses contribute units according to their size.[9] The assumption is that the higher the ratio the more manure per acre. That may well be true, although some of the manure would probably fall on pasture or elsewhere. These calculations, do not, however, form the basis for determining what value of the ratio is sufficient to prevent soil fertility declining.

There appear to be no previous calculations with the same aim as the present paper. It therefore starts afresh, using scientific information about sheep and data on medieval farming practices.

II

The first step is to calculate how much N, P and K would be transported from pasture to fold by one average medieval sheep in a year. In order to calculate that transport, we need to answer the following questions.

(i) How much N, P and K are contained in the urine and faeces that a sheep deposits over 24 hours?

[7] E. I. Newman and P. D. A. Harvey, 'Did soil fertility decline in medieval English farms? Evidence from Cuxham, Oxfordshire, 1320–1340', *AgHR* 45 (1997), pp. 119–136.

[8] R. A. Dodgshon and E. G. Olsson, 'Productivity and nutrient use in eighteenth-century Scottish townships', *Geografiska Annaler* 70B (1988), pp. 39–51; R. A. Dodgshon, 'The ecological basis of highland peasant farming, 1500–1800 AD' and G. Olsson, 'Nutrient use and productivity for different cropping systems in south Sweden during the eighteenth century', both in H. H. Birks (ed.), *The cultural landscape: past, present and future* (1988).

(ii) How long does material take to pass through a sheep, from the time it is eaten until it appears as faeces and urine? If this time is short, say an hour, then most nutrients deposited will come from nearby, so the sheep will be ineffective transporters.
(iii) How is the grazing activity of sheep distributed through the day? Do they eat mainly during daylight or also at night (and if so how much)?
(iv) Similarly, how is their defecation and urination activity distributed through the day?

The information to answer these questions will necessarily come from twentieth-century investigations, but we should also consider whether any adjustments to the figures will be needed to make them apply to medieval sheep, to allow, for example, for any difference in size or management.

(i) Nutrients excreted per sheep per day

A problem in finding suitable data is that nowadays almost all pasture land in lowland England has been improved, meaning it has been sown with modern grass varieties and receives generous amounts of fertilizer. The closest to medieval pasture, in soil conditions, vegetation type and nutrient contents are to be found in upland areas. Suitable measurements have been made of sheep grazed on pasture part way up Mount Snowdon in North Wales.[10] Although the site is 490m above sea level, the soil and pasture vegetation are similar to old, unimproved pastures in lowland England. The sheep were on the hillside from May to October. Over this period, the amounts of nutrients deposited in dung plus urine were: 28.3g N, 2.48g P and 22.6g K per adult sheep per day.

To check whether the Snowdon site and sheep were fairly typical, the most useful comparison we can make, with existing data, is the amount they ate per day. If they eat more they will take in more nutrients and will excrete more. The Snowdon sheep ate on average 1.3 kg per adult sheep per day (weight of plant material after drying). In four studies in Scotland the amount eaten ranged from 0.7 to 1.8 kg per day.[11] In three studies at lowland sites with improved grassland 1.0 to 1.6 kg per day was eaten, though a fourth study found higher values.[12] So the Snowdon sheep were near the centre of the reported range. The other studies mostly involved sheep that were larger than at Snowdon. The relevance of sheep size is considered later.

[9] J. Z. Titow, *Winchester yields* (1972), Table L; Campbell, *English Seigniorial agriculture*, pp. 104–5; B. Harrison, 'Field systems and demesne farming on the Wiltshire estates of Saint Swithuns' Priory, Winchester, 1248–1340', *AgHR* 43 (1995), p. 16.

[10] O. W. Heal and D. F. Perkins, *Production ecology of British moors and montane grasslands* (1978), pp. 348–95.

[11] J. A. Milne, L. Bagley and S. A. Grant, 'Effects of season and level of grazing on the utilization of heather by sheep', *Grass and Forage Science* 34 (1979), pp. 45–53; J. Hodgson *et al.*, 'Comparative studies of the ingestive behaviour of sheep and cattle', *J. Applied Ecology* 28 (1991), pp. 205–27; P. M. Haygarth *et al.*, 'Phosphorus budgets for two contrasting grassland farming systems in the UK', *Soil Use and Management* 14 (1998), pp. 160–67; G. R. Iason, D. A. Sim and I. J. Gordon, 'Do endogenous seasonal cycles of food intake influence foraging behaviour and intake by grazing sheep?', *Functional Ecology* 14 (2000), pp. 614–22.

[12] W. S. Jamieson and J. Hodgson, 'The effects of variation in sward characteristics upon the ingestive behaviour and herbage intake of calves and lambs', *Grass Forage Science* 34 (1979), pp. 273–82; A. J. Parsons *et al.*, 'The physiology of grass production under grazing', *J. Applied Ecology* 20 (1983), pp. 127–39; P. D. Penning, A. J. Rook and R. J. Orr, 'Patterns of ingestive behaviour of sheep continuously stocked on monocultures of ryegrass or white clover', *Applied Animal Behaviour Science* 31 (1991), pp. 237–250; A. J. Parsons *et al.*, 'Uptake, cycling and fate of nitrogen in grass-clover swards continuously grazed by sheep', *J. Agricultural Science* 116 (1991), pp. 47–61.

This paper assumes that all the nutrients passing into an adult sheep in its food must emerge again later in its faeces and urine. This must be true if the sheep is neither growing nor lactating. However, adult sheep may gain weight, or may lose weight at other times of the year if their food supply is inadequate. In the Snowdon study the adult sheep increased in weight quite substantially during the summer. The proportion of their nutrient intake that was retained in their bodies was: N, 4.0 per cent, P, 12.0 per cent and K, 0.3 per cent. For most of the calculations which follow, these are small enough 'errors' to be ignored, but we should bear in mind that P transport may be somewhat overestimated.

If we want to use the nutrient excretion rate per day, determined from May to October, to calculate the total for the year, we need to know whether sheep eat and excrete less in winter. Sheep eat for about the same number of hours per day in all seasons of the year.[13] However, if there is poor vegetation growth in winter they might acquire less. I have found data on how intake by sheep changes through the months May to November, but unfortunately not through the whole year.[14] On the basis of these data the calculations assume that intake for December to February is 60 per cent of the rate in May to July, with other months intermediate. So the average rate over a whole year would be about 20 per cent less than in summer. As an independent check of that, multiplying the Snowdon daily amount of P excreted during May – July by 365 gives a yearly rate of 0.97 kg excreted per sheep, whereas calculations for a Scottish hill farm gave 0.75 kg per sheep for a whole year, 23 per cent less.[15]

(ii) How long do nutrients take to pass through a sheep?

This question has been investigated by mixing into sheeps' food a marker, such as a dye, radioactive material or fine particles, and finding out how much of it is contained in faeces produced at intervals over the next few days. The marker commonly begins to appear in the faeces within 24 hours, but then continues to be found over 5 to 10 days. The time for half of the marker to pass through the sheep ('mean retention time') varied among different experiments from 31 to 107 hours.[16] Marker elements appear in urine sooner than in faeces, but they continue to appear in the urine for several days.[17] So faeces and urine dropped at one time contain materials that were in food taken in over several days. This time scale is long enough for transferring sheep from pasture to fold every night to be potentially an efficient method of transporting nutrients from one to the other. If, in contrast, sheep were left on the fallow

[13] D. E. Tribe, 'Some seasonal observations on the grazing habits of sheep', *Empire J. Experimental Agriculture* 17 (1949), pp. 105–115; G. P. Hughes and D. Reid, 'Studies on the behaviour of cattle and sheep in relation to the utilization of grass', *J. Agricultural Science* 41 (1951), pp. 350–66.

[14] Milne *et al.*, 'Seasonal grazing'; Hodgson *et al.*, 'Ingestive behaviour'; Parsons *et al.*, 'Uptake'; Iason *et al.*, 'Seasonal cycles'.

[15] Haygarth *et al.*, 'Phosphorus'.

[16] W. L. Grovum and V. J. Williams, 'Rate of passage of digesta in sheep', *British J. Nutrition* 30 (1973), pp. 313–329; A. C. I. Warner, 'Rate of passage of digesta through the gut of mammals and birds', *Nutrition Abstracts and Reviews*, Ser. B, 51 (1981), pp. 789–820; M. Kaske and W. von Engelhardt, 'The effect of size and density on mean retention time of particles in the gastro intestinal tract of sheep', *British J. Nutrition* 63 (1990), pp. 457–65.

[17] A. M. Downes and I. W. McDonald, 'The chromium–51 complex of ethylene diamine tetraacetic acid as a soluble rumen marker', *British J. Nutrition* 18 (1964), pp. 153–162; K. Krawielitzki *et al.*, 'Nitrogen secretion and absorption in different segments of the digestive tract', *J. Animal and Feed Sciences* 8 (1999), pp. 129–43.

continuously for ten days or longer, by the end much of the material in the faeces and urine would be from what the sheep ate earlier on the fallow.

(iii) How is grazing activity distributed through the day?

Whether sheep graze during darkness, and if so for how long, has been investigated by direct observation, using moonlight, dim artificial light or short bursts of bright light; or by a device which can be attached to the sheep to record its jaw movements. Three studies in different parts of Britain all showed that during summer sheep ate scarcely at all during darkness. However, as the days got shorter in autumn, the sheep ate more during darkness. Observations through a whole year, in Warwickshire, found that from May to August 96 per cent of the sheeps' grazing time was during daylight, only 4 per cent in darkness; whereas in December 41 per cent was in darkness. The figures for other months were intermediate. More limited observations in Berkshire gave similar results.[18]

(iv) How is defecation and urination activity distributed through the day?

It is well known that sheep do defecate at night as well as by day: wherever they spend the night they leave droppings. What we want to know is, do they deposit as much urine and faeces per hour by night as they do by day? Information on this is unfortunately limited, and I have found none for Britain. The most directly relevant is from Syria; the climate is cool and wet in winter but hot and dry in summer, so information from April and May, while the weather was not yet very hot and dry, and when the sheep were grazing green pasture, is used here. The sheep were on the pasture for about nine hours per day; the rest of the 24 hours they were held in a yard. The amount of faeces deposited in the yard was a little less than that in the pasture, but allowing for the longer time in the yard, the rate of deposition per hour in the yard was only 47 per cent of that in the pasture. For urine deposition the figure was 54 per cent. However, nitrogen deposition in excreta in the yard, per hour, was 62 per cent of that in the pasture, because the excreta were usually more concentrated at night.[19]

Another source of information is from a study conducted in New South Wales, Australia, in November, when temperatures were similar to English summer.[20] Sheep were free to move within a paddock throughout each 24 hours, but they were observed to spend most of the darkness resting in one small area, and daylight moving about in the remainder of the paddock. Faeces collected from these areas showed that deposition of faeces per hour during the night (10 hours) was, on average, 81 per cent as fast as during daylight. Urine production was not measured. Collection of faeces at another site in New South Wales and urine in Finland, throughout a few 24-hour periods, showed little variation of production rate through the 24 hours.[21]

[18] Tribe, 'Seasonal observations'; Hughes and Reid, 'Behaviour'; Penning *et al.*, 'Patterns'.

[19] P. F. White, T. T. Treacher and A. Termanini, 'Nitrogen cycling in semi-arid Mediterranean zones: removal and return of nitrogen to pastures by grazing sheep', *Australian J. Agricultural Research* 48 (1997), pp. 317–22.

[20] J. A. Taylor *et al.*, 'Camping and faeces distribution by merino sheep', *Applied Animal Behavourial Science* 17 (1987), pp. 273–88.

[21] J. L. Corbett and F. S. Pickering, 'Estimation of daily flows of digesta in grazing sheep', *Australian J. Agricultural Research* 34 (1983), pp. 193–210; M. Valtonen, J. T. Laitinen and L. Eriksson, 'Renal melatonin excretion in sheep is enhanced by water diuresis', *J. Endochrinology* 138 (1993), pp. 445–50.

Thus the rate of excreta production during darkness can vary from being about equal to the rate in daylight, down to only about half as fast. The calculations take excretion per hour in darkness to be 75 per cent of the rate during daylight.

III

So far, all the information has been from twentieth-century sheep. Applying them to medieval sheep raises several questions:

(i) How much of the day did sheep spend in the fold?
(ii) Would they eat less at night than twentieth-century observations suggest, because the fold offered little for them to eat?
(iii) Were medieval sheep smaller than those which provided the figures for amount of N, P and K excreted? If so, they might eat and excrete less per day.

To consider the first question: how early did the shepherd take the sheep out to pasture: in the first glimmerings of light before dawn, at sunrise, or later? And when did they return to the fold in the evening? Although some detailed regulations about folding are known to have existed, I can find no indication that they covered this matter. The anonymous *Seneschaucie* said that the shepherd and his dog ought to sleep in the fold. This might encourage him to rise early. However, Fitzherbert recommended 'in the mornynge, whan he [the shepherd] cometh to his folde, let not his shepe out anone ... let them stand stylle good season, that they may donge and pysse'. And later he says that it may be best to wait until the grass has dried before letting the sheep out of the fold.[22]

The information on how much twentieth-century sheep ate at night applies where the sheep were in the same pasture area throughout the 24 hours. Would they eat as much at night if they were on the fold? They were usually crowded into a fairly small fold. Beneath their feet was mainly bare ground or stubble, although sometimes they had access to a grassy baulk, or to weeds. Walter of Henley thought they ate little there: 'They are driven for the night in the fold, and by chance the morrow also ... and then come to the manger starving'.[23] Modern sheep, if kept on stubble continuously for several weeks, lose weight.[24] Stubble, as well as being unpalatable, has much lower nutrient concentration than pasture vegetation (see Table 1). There are therefore two opposing adjustments to be made to the amount eaten on the fold. First, the sheep may have spent more time there than the length of night assumed above when determining how much sheep eat at night. But secondly there was little palatable forage, or of high nutrient content, in the fold. In the calculations greater weight is given to the second of these; the amount eaten in the fold each month is taken as half the amount of night-time eating observed during the twentieth century. For calculating amount of faeces and urine dropped on the fold, it is assumed that the sheep were there from sunset to sunrise, with daylength as in the English midlands.

[22] E. Lamond (ed.), *Walter of Henley's* Husbandry, *together with an anonymous* Husbandry, Seneschaucie *and Robert Grosseteste's* Rule (1890), p. 115; Fitzherbert, *Husbandry*, pp. 28, 51.

[23] Ibid., p. 31.

[24] J. B. Coombe, A. Axelsen and H. Dove, 'Rape and sunflower seed meals as supplements for sheep grazing cereal stubbles', *Australian J. Experimental Agriculture* 27 (1987), pp. 513–23.

TABLE 1. Concentration of nitrogen (N), phosphorus (P) and potassium (K) in grain and other farm materials. Data from late nineteenth- and twentieth-century measurements, mostly from plants grown without inorganic fertilizer. Units: mg per g dry matter.

	Concentration (mg/g)		
	N	*P*	*K*
Grain			
wheat, oats[a]	18.0	3.6	4.8
barley[a]	14.0	3.1	5.2
rye[b]	14.0	3.1	4.1
peas[a]	40.0	4.0	10.0
beans[a]	43.0	4.0	10.0
Straw[c]	4.0	0.9	8.0
Pasture herbage[d]	23.0	2.1	17.0
Hay[a]	18.0	1.4	14.0

Sources:
[a] Newman and Harvey, 'Soil fertility', Table 5.
[b] B. Holland *et al.* (eds), *McCance & Widdowson's Composition of Foods* (1991); J. Ellen, 'Growth, yield and composition of four winter cereals', *Netherlands J. Agricultural Science* 41 (1993), pp. 235–246; F. Selles, C. A. Campbell and R. P. Zentner, 'Effect of cropping and fertilization on plant and soil phosphorus', *Soil Science Society of America J.* 59 (1995), pp. 140–144.
[c] A. E. Johnston, 'The plant nutrients in crops grown on Broadbalk', *Rothamsted Annual Report for 1968* (1969), part 2, pp. 50–62; G. V. Dyke *et al.*, 'The Broadbalk wheat experiment, 1968–78', *Rothamsted Annual Report for 1982* (1983), part 2, pp. 5–44.
[d] Heal & Perkins, *Production.*

Concerning sheep size, it is the size of the body or the total weight of the animal that is relevant. There seem to be no written medieval records of this. There are numerous records of wool weight per sheep, but that depends on the length of the wool as well as the size of the fleece. Some evidence comes from the size of parchment made from sheepskin, though the largest animals may have been preferred for that. Medieval pictures and brasses show the appearance of sheep, though often without a clear scale. The most extensive quantitative information on the size of medieval sheep is from their bones. Large quantities of bone have been recovered from sites where there were waste tips from medieval dwellings or butchers, and lengths and widths of numerous leg bones have been measured. The body weight supported may be better indicated by the width of leg bones than by their length. All these sources of evidence have been used to compare medieval sheep with breeds still extant. The commonest conclusion has been that adult medieval English sheep weighed about 30kg, although 20 and 35kg have also been suggested.[25] In the Snowdon study which provided the figures for N, P and

[25] P. L. Armitage and J. A. Goodall, 'Medieval horned and polled sheep: the archaeological and iconographic evidence', *Antiquaries J.* 57 (1977), pp. 73–89; M. Maltby, *The animal bones from Exeter* (1979), pp. 48–54; T. O'Connor, *Animal bones from Flaxengate, Lincoln, c. 870–1500* (1982), pp. 23–32; M. L. Ryder, *Sheep and man* (1983), pp. 458–77; A. J. S. Gibson, 'The size and weight of cattle and sheep in early modern Scotland', *AgHR* 36 (1988), pp. 162–171; G. Clark, 'Labour productivity in English agriculture, 1300–1860', in Campbell and Overton (eds), *Land, Labour and Livestock*, pp. 214–7.

TABLE 2. Calculation of amount of nitrogen (N) transported from pasture to fold during October

N eaten and excreted per 24 hours during summer (Snowdon sheep)	28.3g/sheep/day
Food intake October (per cent of summer rate)	85.5%
N in food intake October (= 28.3 × 0.855)	24.20g/sheep/day
Length of darkness	13.33 hours
N excreted during darkness [a]	11.71g/sheep/day
Percentage of 24-hour grazing activity in fold	9.5%
N intake from fold (= 24.2 × 0.095)	2.30g/sheep/day
N transported (= 11.71–2.30)	9.41g/sheep/day

Note: [a] Calculated as follows:
Total N excreted = N excreted during daylight + N excreted during darkness = E(24–D) + 0.75ED
where D = length of darkness (hours); E = excretion rate per hour during daylight; 0.75E = excretion rate per hour during darkness.

K in excreta the sheep were small by modern standards: they weighed 23–32kg. Therefore it seems appropriate to use the amounts they excreted, without adjustment, as the estimates of excretion by medieval sheep.

IV

We are now in a position to calculate the amount of N, P and K that a sheep would transport from pasture to fold, if it was on the pasture by day and in the fold at night. Not all the nutrients in the faeces and urine deposited on the fold were transported there: some came from food eaten there. The net amount of N transported is given by:

N in faeces and urine deposited in the fold – N in food eaten in the fold

The calculations have been performed separately for each month. Table 2 gives the calculations for N for one month as an example. The other nutrients and other months were calculated in the same way. Nutrient transport per day did not vary greatly through the year: during winter sheep spent more time in the fold per 24 hours, and so did more of their excretion there, but this was offset by a greater proportion of their daily eating being there, and their total daily excretion being less.

The transport of each nutrient per day for each month has been calculated, then summed over the whole year. The yearly transport (kg per sheep per year) was: N 2.89, P 0.254, K 2.31.

These calculations assumed that the movement from pasture to fold and back again occurred every day of the year. However, there were sheep houses in the Middle Ages; they were mentioned by contemporary writers and charges for mending them are recorded in accounts.[26] Sheep were presumably put there in winter, but there is some evidence that they were indoors only in bad weather. There was concern about sheep-rot if they were pastured

[26] Lamond (ed.), *Walter of Henley's* Husbandry, pp. 31, 99; Harvey in *Agrarian History*, III, pp. 265–6; H. E. J. Le Patourel in *Agrarian History*, III, pp. 878–880; R. Trow-Smith, *A history of British livestock husbandry to 1700* (1957), pp. 113–4; G. E. Fussell, *Farming techniques from prehistoric to modern times* (1966), p. 76.

on wet soil.[27] Walter of Henley wrote 'See that your sheep are in houses between Martinmas and Easter', but went on 'I say not if the weather be dry and the fold be prepared properly'; and later he specially mentions 'if wethers be in the house for a storm'. Fitzherbert wrote 'that man, that hath the best shepe-pasture for wynter ... may suffer his rammes to goo with his ewes all tymes of the yere'.[28]

If the sheep were indoors for some of the winter, how would this affect the nutrient transport to the arable? That depends on what feed the indoor sheep were given. In winter sheep were fed on hay, oats, peas and/or vetches.[29] If they were fed on hay, and their excreta were later spread on arable fields, that would result in nutrients being transported from the hay meadow to the arable, an input to the arable. But oats, peas and vetch were all grown on the arable, so if sheep were fed on them the nutrients in the excreta would not be an input to the arable, merely recycling back to it what the oats and legumes had taken out. How much hay was in the winter feed could thus make a difference to the annual nutrient balance. To illustrate this, suppose that the sheep were indoors on half of the days during the period recommended by Walter of Henley, 16 November to (say) 31 March. Suppose then that they were fed then only on hay, and all their excreta were taken out and spread on the arable fields. Suppose also that when indoors the sheep ate the same quantity of food as when grazing outdoors in the same months, but it had the NPK concentrations as given for hay in Table 1 (so a bit lower than in pasture herbage). Then we can calculate how this would alter the total amount of nutrients transported to the arable, compared with the sheep being outdoors all year. The amount of P transported per year would be increased by 12 per cent, N by 18 per cent and K by 19 per cent. On the other hand, suppose the sheep when indoors were fed oats, peas and vetch, but no hay. Then the only nutrient transport to the arable for those winter months would be on the days when the sheep were outdoors, and the total N, P and K transport to the arable over the whole year would be 18 per cent less than if the sheep had been outdoors all the time. If the sheep were fed a mixture of hay, oats and legumes, the effect on the nutrient balance would be intermediate, in other words less change from the figures for sheep outdoors all year. In the following calculations the median assumption is adopted, namely that the nutrient transport was the same as if the sheep had been outdoors all year.

In order to calculate how much grain production these transported nutrients would support, we need to know the concentrations of N, P and K in the grain. Table 1 shows relevant data. The cereals differ only slightly between species, but the legumes are higher in N and K.

Table 3 shows, as an example, the calculation of how much wheat could be supported by one sheep. If 161kg of wheat is harvested that removes in the grain 2893g of nitrogen. So if none of that N is returned to the soil, to maintain the N status of the soil that much N must be supplied, in this case by a sheep. The table shows that of the three elements, the P input by one sheep supports the least grain and K input the most. The reason for this can be seen by comparing the concentrations of the elements in grain and in pasture herbage, given in Table 2. Pasture herbage, which is mainly leaves, contains a higher concentration of N and K

[27] Kerridge, *Common fields*, p. 78.

[28] Fitzherbert, *Husbandry*, p. 42.

[29] Ryder, *Sheep and man*, p. 447; Trow-Smith, *British livestock*, p. 158; Dyer in *Agrarian History* III, p. 235; Miller in *Agrarian History*, III, p. 297.

TABLE 3. Calculation of wheat production that could be supported by nutrients transported by one sheep in one year.

	N	*P*	*K*
Concentration in wheat grain (g/kg)	18.0	3.6	4.8
Nutrients transported (g/sheep/year)	2893.0	254.0	2310.0
Weight of grain (kg) containing that amount of the nutrient	161.0	71.0	481.0

than in cereal seeds, but a lower concentration of P. Excreta (urine plus faeces) of sheep will have a ratio of N:P:K similar to that in their food. So if a quantity of faeces plus urine contains just enough P to support 1kg of cereal, it will contain more than enough N and K to support 1kg. Comparing pasture herbage with legume seeds, the herbage is lower in N and P; but since legumes have their own extra source of N from the air, P will again be the element in shortest supply. So P will be the limiting element for cereal and legume production, long-term, if the main input of nutrients is from excreta of animals fed on pasture or hay.

It follows that we now need to calculate in more detail how much grain production the P transported by one sheep would support. Table 4 summarizes this. The production in bushels differs between crop species, partly because some require more P per kg than others, but also because of the differing weights per bushel. The prediction is that folding of one sheep over a year would supply enough nutrients to support about 3–5 bushels of grain.

V

The figures in Table 4 can now be applied to individual medieval farms to calculate whether each one had enough sheep to support the amount of grain it exported. Because sheep are viewed here as transporters of nutrients to the arable from elsewhere, we are concerned not with how much grain the farm produced in total but with how much it exported. For example, if oats were fed to horses, whose manure was then spread on arable fields, that was not a loss of nutrients. But if oats were sold to outsiders, that was a nutrient loss. Straw does not feature in the calculations because all the nutrients in the straw were returned, in due course, to the arable. Some straw rotted in situ after the harvest; some was eaten by animals and the nutrients returned in their excreta; some was used as bedding and so became part of the manure spread on fields. Thatch would retain straw for longer, but not for ever.

So the information required about a farm is how much produce it exported, and also how many sheep it had. This information is provided in many of the surviving accounts of medieval demesne farms. Among the demesnes of the Bishopric of Winchester there was a wide range of sheep numbers, from none to thousands, and the accounts provide figures from which one can calculate whether there were sufficient sheep to support the grain exported. For one demesne, Crawley in Hampshire, there is an extensive tabulation of crop yields, how much was exported, and numbers of sheep, for each year of the accounts; two sets of ten accounts, in the periods 1232–1252 and 1325–1335, are used here.[30] For other Winchester demesnes the published

[30] Gras and Gras, *Economic history*, pp. 338–419.

TABLE 4. Cereal production that could be supported by the phosphorus transported by one sheep in a year (= 254 g)

	Peas, beans	*Wheat*	*Rye*	*Barley*	*Oats*
Concentration of P in grain (g/kg)	4.0	3.6	3.1	3.1	3.6
Weight: volume (kg per bushel) [a]	25.1	23.9	22.9	20.5	16.0
Amount of grain containing 254 g of P (= grain supported by one sheep)					
weight (kg) [b]	63.4	70.4	81.8	81.8	70.4
volume (bushels) [c]	3.0	3.5	4.2	4.7	5.2

Notes:
[a] Wheat 64 troy pounds per bushel (see R. D. Connor, *The weights and measures of England* (1987)); others based on 1791 statutes (see Campbell *et al.*, *Medieval capital*, p. 41). Air-dry weight, containing 15% water.
[b] Oven-dry weight.
[c] Calculation for wheat: 254/(3.6 x 23.9 x 0.85). 0.85 converts from oven-dry to air-dry.

pipe rolls for 1210–11 and 1301–2 are available.[31] Export from the farm is taken to comprise what is recorded as sold (including sold at the audit), sent to other villages, plus the tithe, and also other amounts occasionally given to outsiders (e.g. taxes). Not included in the export are grain retained for sowing, fed to animals, payment in kind to villagers, provisions for visitors. This implies that nutrients in food eaten by villagers and visitors found its way back, via their excreta, to the demesne fields. This is unlikely to have been entirely true. Set against that, some of the tithe may have been eaten by the rector, his family and servants and so retained rather than all exported. These two imponderables will to some extent balance each other. If any seed was bought or otherwise brought in from outside, that is subtracted from the export.

For each demesne, the amount of each crop exported has been calculated, and then divided by the relevant figure from the bottom line of Table 4 to calculate the number of sheep needed to support that export. The number of sheep needed to support the total export of all the crops in that year was thus calculated. The number of sheep actually present varied through the year, as lambs were born, animals died, adults were bought and sold, received from other villages or sent to them. Any animal that arrived in the demesne during the year or left it during the year is counted as a half. Thus, the number of sheep is taken as the average of the number present at the beginning and the end of the accounting year. Lambs are further divided by 2 to allow for their smaller size and hence less manure production. This provided the basis for calculating 'sheep units', equivalent to the number of adults present for the whole year.

Table 5 shows, for a selection of Winchester farms, the number of sheep present and the number needed to maintain the soil fertility. The top three in the list are farms with large numbers of sheep, from almost 1000 to more than 2000. According to the calculations, they had ample sheep to maintain the fertility of the arable in the periods for which data are given. The remaining five farms on the list had fewer sheep; nevertheless, the number of sheep was

[31] N. R. Holt (ed.), *The pipe roll of the Bishopric of Winchester, 1210–1211* (1964); M. Page, *The pipe roll of the Bishopric of Winchester, 1301–2* (Hampshire Record Ser. 14, 1996).

TABLE 5. Sheep present, and sheep needed to maintain the fertility of the arable, on some demesnes of the Bishopric of Winchester

		Sheep per demesne		*Sheep per sown acre*	
	Year[a]	*Present*	*Needed*	*Present*	*Needed*
Crawley, Hants	1232–52	1462	695	3.8	1.8
	1325–35	922	287	4.4	1.4
Twyford, Hants	1211	1798	305	3.6	0.6
	1302	2217	771	4.6	1.6
Downton, Wilts	1211	2560	983	3.5	1.3
	1302	2018	691	3.6	1.2
Beauworth, Hants	1211	264	121	NI	NI
	1302	211	180	2.1	1.8
Wield, Hants	1211	391	337	NI	NI
	1302	508	245	4.4	2.1
Ivinghoe, Bucks	1302	274	588	1.1	2.3
Rimpton, Somerset	1211	247	218	1.5	1.3
	1302	?0	548	?0	2.0
Harwell, Berks	1211	41	364	NI	NI
	1302	0	220	0	NI

Note:
[a] Year given is the end of the account year.
NI: areas which were recorded as customary acres, so sown area not known.
Sources: Crawley, Hants: figures drawn from Gras and Gras, *Economic and social history of an English village*, pp. 338–419; other figures for 1211 from Holt (ed.), *Pipe roll, 1210–11*; for 1302 from Page (ed.), *Pipe roll, 1301–2*.

adequate at Beauworth in 1211 and Wield in 1302. Where the required number of sheep was about equal to the actual number (Beauworth 1302, Wield 1211, Rimpton 1211), in view of the various approximations in the calculations we should be cautious about deciding whether the fertility would be maintained. Other examples (Ivinghoe, Harwell) show that some of the Winchester demesnes certainly could not rely on their sheep to maintain the fertility of the arable. Rimpton accounts reported no sheep between 1271 and 1324.[32] However, the account for 1302 does report the cost of paying a shepherd and buying hurdles for the fold. Thornton has suggested that sheep from other Winchester demesnes were being pastured at Rimpton during this time.[33] So the number of sheep there in 1302 is uncertain.

Changes in soil fertility would be slow; changes in soil P status would take decades or longer to affect crop yields significantly. It is therefore unfortunate that, apart from Crawley, the data in Table 5 are for only two individual years. It is possible that in some years the amount of crop exported or the number of sheep was atypical for that manor. The number of sheep can be checked against mean numbers for longer periods: Titow gave the mean number of sheep

[32] Titow, *Winchester yields*, Table L.

[33] Thornton, 'Determinants', p. 198.

TABLE 6. Sheep present, and sheep needed to maintain the fertility of the arable: *figures* for some non-Winchester demesnes

	Total sheep		*Sheep per sown acre*	
	Present	*Needed*	*Present*	*Needed*
Cuxham [a]	100–150	388		2.2
Peterborough [b]	6521	7931	1.3	1.6
S. England [c]			0.95	1.1–1.3

Sources:
[a] Cuxham, Oxfordshire, 1320–1340. Data from Newman and Harvey, 'Soil fertility', Table 4; Harvey, *Medieval village.*
[b] 23 demesnes of the Abbey of Peterborough, data from three accounts 1301–1310. Data from K. Biddick, *The other economy* (1989), Tables 12, 20, 29.
[c] About 200 demesnes in central and south-eastern England, 1288–1315 (Feeding the City Database 1). Data from Campbell *et al.*, *Medieval capital*, Tables 1, 2, 15; Campbell, *English Seigniorial agriculture*, Table 4.03.

on each Winchester farm for 1209–1270 and for 1300–1324, which can be compared with the individual years 1211 and 1302, respectively.[34] Most of the sheep numbers given in Table 5 are broadly in agreement with the period means, close enough not to alter the conclusion about whether soil fertility would be maintained. Exceptions are: Wield, where sheep averaged 246 in 1209–1270 and 304 in 1300–1324; and Rimpton, 131 in 1209–1270. Although Harwell's 1302 account reported no sheep, it averaged 45 during 1300–24, but still far too low to maintain soil fertility.

Table 6 presents data for a wider range of manors. Cuxham, Oxfordshire, a manor of Merton College, Oxford, is an example of a non-ecclesiastical demesne for which medieval accounts survive.[35] It was primarily a grain-producing farm: it had only a small area of pasture and meadow. During most of the period from 1311 to 1357 there were 100–150 sheep, but in some years fewer. Table 6 shows that this would have been inadequate to maintain soil fertility. Newman and Harvey calculated nutrient balances for the whole demesne, assuming that nutrient transfer within it was efficient, and also concluded that the phosphorus balance was not being maintained.[36]

The Abbey of Peterborough held 23 demesnes in the early fourteenth century, and accounts survive for the years 1301, 1308 and 1310. Biddick provided tabulated figures from them, which allow calculation of the total number of sheep needed to maintain fertility. Averaged over the three years, the number of sheep present was somewhat lower than the number needed (Table 6).

A large database ('Feeding The City 1') has been built up by Campbell *et al.*, containing data extracted from accounts of about 200 demesnes in central and south-east England during the period 1288–1315. Some of the Peterborough demesnes and a few of the Winchester demesnes are included in this database, but most of the Winchester demesnes were outside its area. Published tables provide almost all the data needed to calculate the number of sheep needed per sown acre to maintain soil fertility during this period. The only relevant data missing are exports of legumes; the amount of legumes exported is here assumed to lie between none and

[34] Titow, *Winchester yields*, Table L.
[35] Harvey, *Medieval village.*
[36] Newman and Harvey, 'Soil fertility'.

60 per cent of the yield. The calculations show that on average the demesnes in this area did not have enough sheep to maintain fertility. However, among these demesnes, and those in the Peterborough estate, the amount of export and the number of sheep presumably varied, so some may have had enough sheep; but some did not.

The two right-hand columns of Tables 5 and 6 give the numbers of sheep present and needed divided by the number of acres sown to crops. I have made the same calculations for some of the other Winchester demesnes, for 1211 and 1302.[37] The number of sheep needed per sown acre varied quite widely, from below 1 up to 2.3. These figures vary too widely to provide a precise rule of thumb; but it is worth noting that for the majority of these demesnes the number of sheep needed per sown acre was in the range 1–2.

VI

This paper has considered only one aspect of the nutrient balance of medieval farming, the contribution of sheep folding. There would be other nutrient inputs to arable land, including nitrogen dissolved in rain, as dust, as gases, and phosphorus and potassium by weathering of soil particles. There would also be losses of nutrients in addition to the amount in crops, including that dissolved in percolating water, by soil erosion, as gases. This paper has been further limited to considering only the sheep belonging to the demesne. In many vills the peasants also owned sheep, and often these were folded on the demesne arable for part of the time. Numbers of non-demesne sheep are rarely known, but where there is evidence it indicates that the peasant flock could be substantial. So the contribution of non-demesne sheep to fertilizing the demesne arable could have been important.[38]

This paper has concentrated on sheep, ignoring the fertilizing effect of manure from other animals. There is no intention to imply that manure from cattle, horses, pigeons and other animals was unimportant. The reason for considering only sheep here is that stalled animals require a different sort of calculation, taking into account how much time each year they spent indoors, and what they were fed on. Their contribution to maintaining the fertility of the arable deserves careful consideration, but needs to be the subject of a separate paper.

If nutrients are transferred from pasture to arable, this is a gain for the arable, but a loss from the pasture. So was the fertility of the soils in grazing land declining over time? In other words, was the area of grazing land inadequate to support the arable production? If so, the system was not sustainable long-term: the productivity of the grazing lands would gradually decline, fewer sheep could be supported and less nutrients be provided to the arable. The key question is whether natural inputs of nutrients to the grazing lands were sufficient to balance removals by sheep, and other losses, e.g. leaching by downward water flow. This paper has estimated transport, in kg per sheep per year, at: N 2.9, P 0.25, K 2.3. Was the area of grazing

[37] The sown area reported in the accounts was for the following year, not the year in which the yields and exports were reported. However, since the calculations involve the total sown area on the demesne, not the area for each crop, it is likely that usually there was no large change from one year to the next.

[38] M. Bailey, *A marginal economy?* (1989), pp. 65–85; Dyer, *Standards of living*, pp. 128, 143; Dyer, in *Agrarian History*, II, p. 377; R. H. Britnell, in *Agrarian History*, III, pp. 200–203; Miller, in *Agrarian History*, III, p. 290; Postan, *Essays*, pp. 214–248; Gras and Gras, *Economic history*, p. 45.

available per sheep large enough to be receiving such amounts in natural input? Some figures for rates of natural input were provided by Newman and Harvey.[39] The range of possible values varies widely, but example values (in kg per hectare per year), taken for the purposes of illustration, are: N 5 (mainly N fixation from the air by clovers and other legumes), P and K 0.2 and 2 respectively (mainly from weathering of soil particles). At these input rates, the areas of pasture needed to supply the nutrients taken by one sheep would be 1.4, 3 and 3 acres, for N, P and K respectively. Therefore 3 acres of pasture might provide enough nutrients to support production and export of 3–5 bushels of grain. Was it common in medieval times for 3 acres or more of grazing to be available per sheep? Unfortunately, the total area of grazing land, including common grazing, was not usually recorded, so any general statement about area available per sheep is not possible at present. This topic – whether or not the fertility and productivity of grazing land was degraded by sheep-corn farming – is an important one, which cannot be adequately covered here, but which merits further research.

This paper, and the method of calculation it presents, is therefore only one part of a complete nutrient balance calculation for medieval agriculture. Nevertheless, it does allow tentative conclusions. It is likely that non-sheep nutrient inputs to the arable (i.e. natural inputs plus manure from cattle and horses) were usually sufficient to balance losses other than in crop export.[40] Therefore, where the number of sheep present was more than the number calculated to be needed to balance nutrient losses in crop export, this provides grounds for concluding that the fertility of the arable was being maintained. This paper has thus provided a means of identifying demesnes where the nutrient status of the arable was being maintained, and has shown that this was true for some of the Winchester demesnes. Titow wrote of the Winchester demesnes: 'The supply of manure ... was so low throughout [1209–1349] as to justify talking in terms of a chronic state of undermanuring'.[41] The results presented here do not support that generalization.

The database of manorial accounts for 1250–1449 assembled by Professor Campbell, which covers demesnes throughout England, provides information on how numbers of sheep and sown acreage changed during that period.[42] Between 1250–1299 and 1400–1449, sown acres declined while sheep numbers increased. The average number of sheep per sown acre in 1250–99 was 0.6; in 1300–49, 1.1; in 1350–99, 1.6; and in 1400–49, 1.9. Since the required number of sheep to maintain fertility often lies between 1 and 2 (Tables 5 and 6), it is likely that the numbers were inadequate on most farms before 1300, but during the next 150 years progressively more farms had sufficient sheep to maintain fertility.

Postan, in his oft-quoted book, stated that 'the continuous reduction of pasture could threaten the viability of arable cultivation itself ... By the end of [the thirteenth century] and the beginning of the following century, in corn-growing parts of the country taken as a whole, pasture and the animal population had been reduced to a level incompatible with the conduct of mixed farming itself'.[43] This paper has shown that it would be unwise to accept that generalization. In the early fourteenth century some demesnes evidently had enough sheep to

[39] Newman and Harvey, 'Soil fertility'.
[40] Ibid.
[41] Titow, *Winchester yields*, p. 30.
[42] Campbell, *English Seigniorial agriculture*, Tables 4.03, 4.07.
[43] Postan, *Medieval economy*, p. 65.

ensure the maintenance of the fertility of the arable land, though other demesnes probably did not. It would be desirable to carry out more detailed calculations of nutrient balances of farms in different regions of the country, and comparing different agricultural regimes. This paper has provided information and methods to help with such investigations.

Sheep farming in Sutherland in the eighteenth century*

by Malcolm Bangor-Jones

Abstract

The introduction of commercial sheep farming to Sutherland has been associated with the Sutherland clearances of the early nineteenth century. This study examines the history of sheep farming on different estates in Sutherland during the eighteenth century, from the aristocratic experiments of the 1730s and 1740s to the marked expansion during the last quarter of the century. By 1800 sheep farming was firmly established in Sutherland.

The introduction of sheep farming to Sutherland has been strongly associated in most minds with the Clearances. The historiography has been dominated by events on the Sutherland estate when, broadly speaking between 1807 and 1821, a comprehensive re-organisation was carried out, comprising the establishment of sheep farming and the removal of many thousands of the small tenantry to the coastal margins. In the Highlands as a whole, the introduction of sheep farming is held to have brought about the creation of a 'new farming aristocracy'.[1] The sheep farms were tenanted by large capitalist graziers, many of whom were from the south, particularly the Scottish-English Borders. In the often emotive language surrounding the Clearances, the incoming sheep have been characterized as a 'white tide' sweeping over the hills.[2] This may accord with the small tenants' perspective. But, as Richards has pointed out, there has been a 'striking vagueness' about the chronology of the change of system, even amongst near contemporaries.[3] In depth archival research into the history of sheep farming in the Highlands is in its infancy.[4] Indeed, as Devine has stated more generally, 'no economic history of sheep farming exists'.[5]

This study is an investigation into the introduction of commercial sheep farming in Sutherland. At the outset, it is important to bear in mind that sheep formed part of the livestock on most Highland farms in the eighteenth century, but that in economic terms sheep were nowhere

* I am very grateful to Eric Richards of Flinders University for his helpful comments on an earlier draft. I am also grateful to two anonymous referees for their suggestions. All quotations from Ms have been modernised.

[1] M. Gray, *The Highland economy, 1750–1850* (1957), p. 91.

[2] J. Hunter, *The making of the Crofting Community* (1976), p. 15.

[3] E. Richards, *A history of the Highland Clearances* (2 vols, 1982–5). For a brief examination of the background to sheep farming in Sutherland, see Richards, *Highland Clearances*, II, pp. 353–54.

[4] I. S. Macdonald, 'Alexander Macdonald, Esq. of Glencoe: insights into early Highland sheep farming', *ROSC: Review of Scottish Culture* 10 (1996–7), pp. 55–66. Even this article sees the introduction of sheep farming in Sutherland as taking place after 1806.

[5] T. M. Devine, *Exploring the Scottish Past* (1995), pp. 140–41.

near as significant as cattle. While numbers might vary from farm to farm, the keeping of sheep extended from the largest landowner to the smallest tenant. On the Sutherland estate, there was an extensive mains or home farm surrounding the family seat of Dunrobin which, in addition to some prime arable land, carried a varied stock of horses, cattle, sheep and goats. In general, the sheep were for the use of the family's household, principally for milk products and wool, but their meat and skins were also important. Some sheep were, like the surplus cattle, sold. At the beginning of the eighteenth century, these sheep were probably of the small native breed.[6]

Most tenants in Sutherland, whether large tacksmen or small tenants, also kept a mixed stock including sheep. Indeed, it appears that sheep equalled cattle numbers, particularly in the more highland areas. Lambs and wedders were included in the rents paid in kind or customary rents. These sheep, however, were small, tended to be badly managed, and were housed at night, possibly in summer as well as winter.[7] They were kept for their milk, which was made into cheese, but also for their meat and wool. These were all used for household consumption and were in the main a 'subsistence accessory'.[8] However, cheese and sheep were sold at local markets and there are suggestions of a regional trade in sheep which would bear further examination. The growing Scottish herring fishing fleet provided a new opportunity: in 1774 it was reported from Assynt on the west coast that cattle and especially sheep sold 'very high to the sailors, and others employed at the Fishery'.[9]

Broadly speaking, sheep numbers ranged from the hundred or more kept by the larger landlords to the handful of the average small tenant (although these might well have been herded within a township flock). As Gray has stated, 'There were many sheep but no sheep farms in the Highlands before 1760'.[10] The issue is thus not the introduction of sheep, but the appearance of large flocks, employing novel breeds, whose size and market orientation makes them wholly commercial, rather than serving a local, essentially domestic economy.

Of the estates in the old county of Sutherland, that of the Earls of Sutherland was the most extensive. During the eighteenth century, the estate continued to grow; it comprised about 60 per cent of the county by 1800. There were, however, a number of other properties in Sutherland, particularly the Reay estate, in the north-west of the county, and the Balnagown estate in Strath Oykel. For this study, the county has been divided into three districts: the Sutherland estate in south-east Sutherland but also including the west coast parish of Assynt is dealt with first in section one; the Reay and other northern estates in section two; and the property of the Rosses of Balnagown along with other small estates in the parishes of Lairg and Creich in

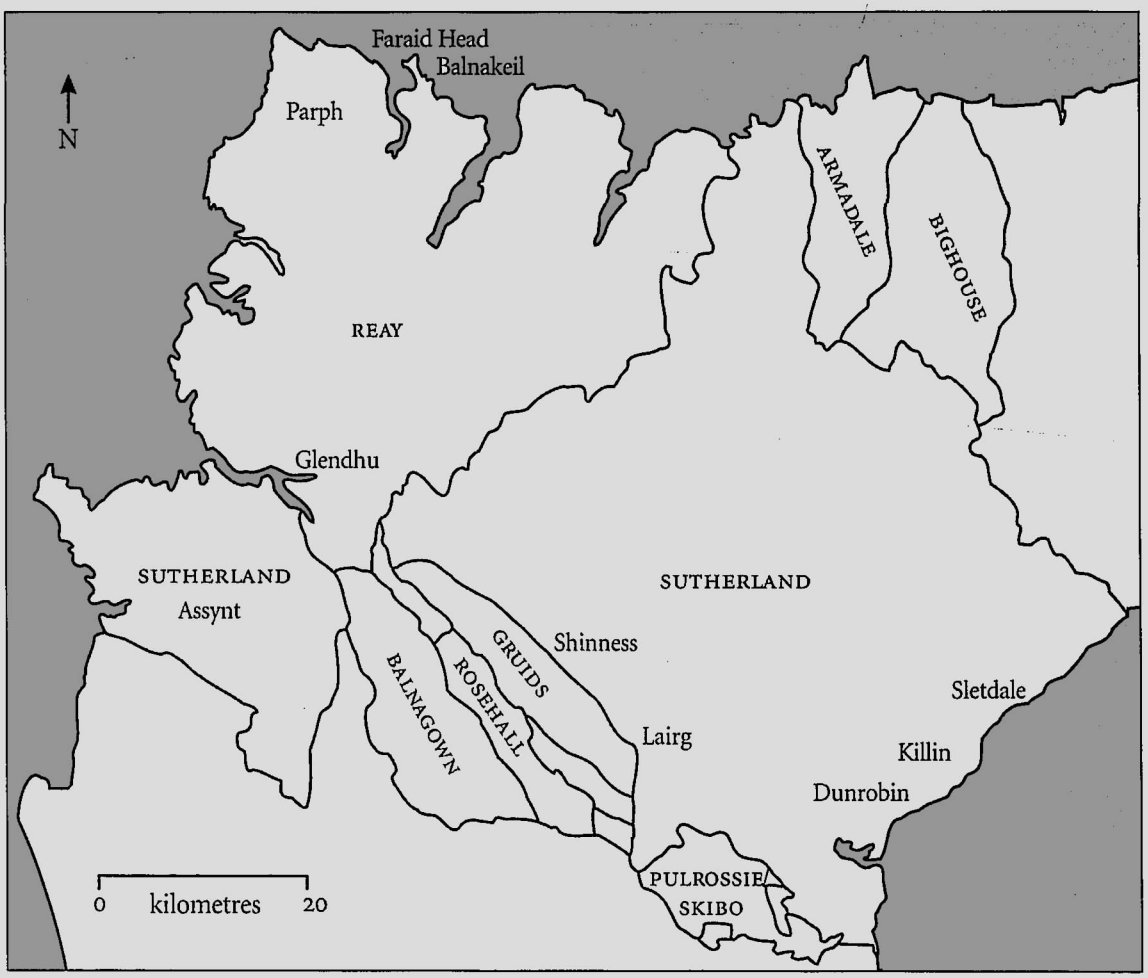
[6] In the first quarter of the eighteenth century, the Sutherland family held many flocks of sheep in varying locations throughout the estate: National Library of Scotland [hereafter NLS], Sutherland Papers, Dep. 313/561, copy inventory of moveables of William Lord Strathnaver, 1722. About 150 wedders and 110 lambs were paid to the family by the tenants as part of their annual customary rents and were placed in the various flocks: Dep. 313/642, state of the family expense ... 29 Sept. 1738; Dep. 313/698 and, in particular, Dep. 313/925 which is an account book for all the estate shepherds covering the period 1713–20. By 1750 the flocks had been reduced to a single one on the Mains.

[7] See, for instance, D. J. Withrington and I. R. Grant (gen. eds), *The statistical account of Scotland, 1791–1799*, XVIII, *Caithness and Sutherland* (1979), pp. 310, 323, 337, 358.

[8] Gray, *Highland economy*, p. 39.

[9] R. J. Adam (ed.), *John Home's survey of Assynt* (Scottish History Society, third ser., 52, 1960), p. 42.

[10] Gray, *Highland economy*, p. 38.



MAP 1. Main estates in Sutherland *c.* 1800 and farms/grazings mentioned in the text.

the third section. These estates are located on Map 1. Each district will be considered in turn and the circumstances and chronology by which sheep farming was introduced examined.

I

The Sutherland estate comprised a narrow coastal strip of lowland character on the east, where rents paid in grain predominated throughout the eighteenth century, and an extensive highland hinterland. Successive possessors of the estate pursued an interest in 'improvement' from at least the 1720s if not earlier. In general this appears to have centred on the policies and mains farm of Dunrobin.[11] The financial difficulties of William sixteenth Earl, who succeeded in 1733, do not appear to have curtailed these activities.[12] Indeed they may have encouraged the Earl to

[11] The improvements were not restricted to Dunrobin. For instance, enclosing and ditching took place at Morvich in the 1720s: NLS, Dep. 313/3129.

[12] NLS, Dep. 313/642, state of the family expense ... 29 Sept. 1738.

make more of the Mains. In 1738, a survey of the estate suggested that a 'great flock of sheep that may be easily kept in the Glen of Dunrobin'.[13] This proposal was not implemented but experiments were made with the introduction of new breeds of livestock.

The earliest record of non-native sheep on the estate comes from one of the claims made for losses to Jacobite forces in east Sutherland in the spring of 1746. Lieutenant John Gordon at Aberscross and Golspietower claimed that the rebels had 'killed and carried off twenty one wedders of the English breed worth five shillings sterling each'.[14] While no evidence has as yet been found to suggest that the Earl also had 'English' sheep, it is noteworthy that at the same period there were 'English swine' both on the Mains of Dunrobin and also in the hands of local tacksmen.[15] It is probable that the non-native breeds of sheep which some tacksmen in east Sutherland possessed in the mid-1740s came from stock on the Mains. While it should probably be assumed that the 'English' sheep had been introduced by Earl William, it must be borne in mind that the process of 'improvement' on the Mains commenced before 1720, and the possibility of earlier introductions cannot be ruled out.

The death of the sixteenth Earl in 1750 left the estate finances in a parlous state and his successor a minor. However, the commissioners appointed by the new Earl took steps to preserve the plantations and, in a limited way, continued the process of enclosure.[16] The Earl began to play a part in the management of his estates in the late 1750s and, despite financial constraints, set in train further improvements to the policies and Mains farm. In 1761, 'six ewe lambs and a ram of an English breed' were brought to Dunrobin. The lambs came from Goodtrees in Lanarkshire and the arrangements were made by the family's legal agent, John Mackenzie of Delvine, and Major Hugh Mackay of Bighouse, one of the pioneers of sheep farming in Sutherland.[17]

Mackenzie also advised the Earl about developments on the estate as a whole. With the Earl looking to increase his income from the estate, Mackenzie and the other advisers were apparently prepared to consider the introduction of sheep farming. The undated and unsigned fragments of a letter throw a gleam of light on their thinking. The letter appears to date from 1765 when a number of farms on the estate were about to be let for entry the following year and may have been written by Robert Gray of Creich to Mackenzie. Gray was an extensive dealer in cattle, a former factor, and a ready proposer of schemes. The author of the letter had been asked to suggest what improvements might be made to the estate, and at a meeting in London, had hinted that 'a great number of sheep might be kept on some parts of the estate by which the rents might be considerably advanced'. The recipient had observed that 'the ground

[13] NLS, Dep. 313/642, Rental of the Earl of Sutherlands Estate ... Sept. 1738.

[14] National Archives of Scotland [hereafter NAS], Gilchrist of Ospisdale Papers, GD153, box 50/2, folder with claims, 1746.

[15] In November 1746, one Donald Fuchadar in Mellaig was paid £1 for 'libbing' or castrating eleven of the Earl's 'English Swine': NLS, Dep. 313/655, account of small deboursements. Hugh Munro, tacksman of Clayside and Inverboll, and John Gordon, surgeon and possessor of the house of Golspietower, entered claims for losses of 'English swine' by the rebels in 1746: NAS, GD153, box 50/2, folder with claims 1746. James MacLean of Capernoch, later claimed that the Earl of Sutherland owed him 'for maintaining English swine in ... 1745 and 1746': NLS, Dep. 313/54/292, account 19 Oct. 1750.

[16] NLS, Dep. 313/698, pp. 28–29.

[17] NLS, Dep. 313/1095, Mackenzie to Gilchrist, 15 July 1761; Dep. 313/2916, Hugh Mackay to [ ] 10 July 1761; Lauriston Castle Collection, MS 1484, fo. 25. Mackay arranged for Donald MacLeod, a soldier in the Earl's regiment, 'a very careful honest fellow, and knows the road well' to take the lambs north. MacLeod had 'a caddie to attend him to Queensferry'.

was generally wet for sheep pastures, and I own that many parts are so but their is also plenty of dry grounds on the same farms'. Sheep farmers from the south were prepared to pay one shilling and more per head. Even if land in Sutherland was only let for 6*d.* per head, the Earl would still receive more rent. Moreover, if a sheep farm was created, there was room enough for the existing inhabitants elsewhere on the estate.

The interior farms of Lairg and Shinness, in the parish of Lairg, extended to about 18 by 8 miles, and contained 300 inhabitants. However, the current stocking was not worth more than £1200, and the farms did not even produce £100 rent. Under sheep, the Earl might get twice or even three times as much rent, even with the sheep farmer only paying half the level of rent current in the south of Scotland. The income of the 300 inhabitants of the farms owning a cattle stock worth £1200 was contrasted with the 20 inhabitants who would be required to look after a flock of sheep valued at £2400.

The author suggested that 'a sensible Farmer from Tweeddale or Tividale should be brought to the country to view the whole estate in order to give his opinion about keeping sheep, if it turns out favourable, any expense of £15 or £20 sterling is well laid out'. Although the analysis may have been crude, the paper provided a clear contrast between the economic returns from cattle rearing and commercial sheep farming. The impact on the existing inhabitants was also obvious, even though the author considered that they could be resettled elsewhere on the estate.[18] There is no evidence that the advice was followed. The set of Assynt, on the west coast of Sutherland, brought a significant increase of rent, but it was to be achieved by extracting more of the profits the existing tacksmen and small tenants would make from their cattle.

The Earl died in 1766 and was succeeded by his infant daughter, Countess Elizabeth. The management of the estate was placed under the care of her tutors, several of whom had served earlier as her father's commissioners.[19] An immediate stop was put to expenditure on improvements to the Mains and the local managers were faced with the problem of what to do with the English sheep. In April 1767, Dugald Gilchrist, one of the estate factors, reported to the estate commissioner, Captain James Sutherland, that

> I do not think the sheep can be disposed of in this country or Ross as the Highlanders will take none of them as they have not proper wint[erin]g and, as they are destructive to planting, such as have inclosures will avoid them on that acc[oun]t. It is necessary that this place be rid of them as there is no couping them without the dikes are not built purposely for them as none of our inclosures is at present constructed in a suff[icien]t fence for confining them.[20]

Sutherland apparently distributed the sheep as he had proposed, in 'half dozens to the gentlemen and tacksmen in the county to improve the breed of sheep in this country'. However, some may have been retained on the Mains.[21]

While the tutors were to exercise a careful approach to expenditure, they were prepared to explore ways of developing the estate. No doubt aware of earlier discussions about sheep farming, in December 1767 they proposed that an enquiry should be made 'into the most proper

[18] NAS, GD153/50.

[19] The tutors who were most active were Sir Adam Fergusson of Kilkerran, James Wemyss of Wemyss, Sir David Dalrymple of Hailes, Alexander Boswell of Auchinleck and the family lawyer, John Mackenzie of Delvine: NLS, Dep. 313/725.

[20] NAS, GD153, box 11, bundle 8/35.

[21] NLS, MS 1485, fos. 73, 131–32.

method of introducing the rearing of sheep in Sutherland'. In March 1768, they agreed to the suggestion of one of their number, Alexander Boswell of Auchinleck, that John Campbell of Lagwine, then a tenant of Sir James Colquhoun of Luss who was related by marriage to the Sutherland family, should be sent to Sutherland and 'report how far it was fit' for rearing sheep.[22] Campbell was one of the trailblazers of sheep farming in the Highlands.[23] Sutherland was initially sceptical and told Mackenzie that, 'When Lord Auchinlecks' man comes here I will order proper people to attend him all over the back settlements but I have no idea if this scheme tunring [*sic*] better then William's at Brora' – a reference to the attempt to exploit the small coalfield at Brora which was proving to be an expensive failure.[24]

Campbell visited Sutherland that summer and evidently considered that sheep could thrive in the north.[25] He was not slow, however, to take advantage of the opportunity and expressed an interest in taking a farm himself. Sutherland found Campbell 'a schemer, but I assure you he has a great deal of address', and invited him to submit written proposals.[26] Campbell first applied for a lease of Shinness, but then proposed taking the Reay Forest (a traditional hunting forest on the Reay estate) in addition, and entered into preliminary discussions with one of the tutors of Lord Reay. Sutherland considered the offer for Shinness rather low, but Campbell complained of the distance from southern markets. To overcome this he proposed slaughtering the sheep in Sutherland and shipping the salted carcasses to Leith.

Shinness was occupied by an old tacksman farmer who had been given a right to the farm for life by the late Earl. Sutherland, however, was confident that if the tacksman died, his grandson would match Campbell's offer for the farm. Moreover, there were over 20 families on the farm 'who must go to America for they cannot live in Shinness if it is turned into a sheep farm'. On the other hand, Sutherland could see advantages in bringing Campbell north. Local farmers did not 'dislike projects'. Indeed, there were 'many very judicious people' in Sutherland who thought that 'many parts of this country is better adapted for sheep than black cattle and you cannot imagine how happy the people are that the large sheep thrive so well which you gave to L[or]d Sutherland and which I distributed among the tacksman last year'. If, as Campbell suggested, sheep could flourish in the north, Sutherland predicted that there would be 'many thousands in a few years'.[27]

In the event, the tutors decided not to pursue Campbell's proposals and laid aside the idea of sheep farming altogether. In the early 1770s they were faced with a serious subsistence crisis and a real, if exaggerated, threat of mass emigration. The tutors took steps to retain the population on the estate and large tacksman holdings were out of favour. Instead the tutors adopted a policy encouraging the tacksmen to farm on their own account without the aid of subtenants.[28]

However, Sutherland pressed ahead with his own agricultural improvements. Although he had initially embarked upon a military career, he had become a close associate of the late Earl and had been appointed commissioner by the Countess' tutors with overall charge, not only of political matters, but also of the policies about Dunrobin, estate improvements and

[22] NLS, Dep. 313/725, 2 Dec. 1767, 18 Mar. 1768.

[23] Richards, *History of the Highland Clearances*, I, pp. 187–88.

[24] NLS, MS 1485, fo. 126.

[25] NLS, Dep. 313/2922, Receipts of John Campbell. He received 15 guineas for his 'trouble and charges in going to Sutherland'; 313/724, Mackenzie's account 27 June 1768.

[26] NLS, MS 1485, fo. 129.

[27] ibid., fos. 131–32.

[28] Adam (ed.), *Home's Survey of Assynt*, pp. xxx–xxxvi.

plantations.[29] For this he received a handsome salary of £200. In 1767, while on a brief visit to his regiment in Ireland, he took time to take a close interest in agricultural methods around Dublin which he considered much suited to the northern climate. As Sutherland said, 'I begin to think I shall make a farmer ... The greatest farmer in this country is within nine miles of this place, I intend to visit him regularly once every week while I am here'.[30]

In 1768 James Sutherland made a proposal to the tutors to take a tack of the farm of Killin, in the parish of Clyne. Although described as a 'highland' farm, Killin was situated between the coastal fringe and the more upland interior. Sutherland initially proposed to use it for his 'yeal' or barren cattle, and also for rearing and fattening his young cattle.[31] The following year he put revised proposals to the tutors, suggesting that he would build a new house, enclose the farm, and make it 'a comfortable residence for the factors of the family'. He was given a 15-year lease and a loan to build a new farmhouse.[32] This was in addition to his possession of the Mains of Dunrobin which he continued, albeit in a more limited way, to improve, buying ploughs from England, and sowing turnips, clover and rye grass.

Not long after taking possession of Killin, Sutherland established a small sheep flock there. In 1771, he invested £50 in enclosing his sheep farm, and also sent a lad to be instructed by Ross of Balnagown's shepherd. The following year he reported that he had sent some cheeses south produced from his sheep. He admitted that his

> sheep farm is in its infancy, but this year I shall make a better figure, as I shall have above three score of lambs, and I propose to augment the number of my sheep to three hundred this season (I mean ewes) my flock at present amounts to eight score, that is ewes, last years lambs and wedders, and notwithstanding the long and severe winter we have had I have not lost but one sheep, this I hope will convince the people that sheep will thrive better, their not being housed.

These were, apparently, native sheep. However, Sutherland was improving his stock by crossing them with some of the 'English' sheep brought north in 1761.[33]

In 1775 Sutherland told Mackenzie of his intention to buy 100 Linton or Black Faced ewes at Dunkeld. This experiment or 'trial', was undertaken 'with a view to introduce that useful animal among the Countess' tenants, more than any profit I can make'.[34] He continued to build up the flock and by 1781 had about 700 ewes. His operations clearly impressed the agricultural writer, Andrew Wight, who regarded Sutherland as a farmer 'who may be ranked with the very best improvers'. A fall in the price of wool apparently convinced Sutherland to 'get quit of his sheep with all convenient speed'.[35] In the event he did not dispense of his flock. However, the coming of age of the Countess of Sutherland and her marriage to Earl Gower in 1785, brought a change to his situation. Sutherland had already bought the small neighbouring estate of Uppat. In 1786 he gave up the management of the Sutherland estate and renounced both his farms.[36]

[29] He had been with the Earl and his Countess when they were ill in Bath and referred to the Earl as his 'patron', NLS, MS 1485, fo. 142. It has been suggested that Sutherland was an illegitimate son of William 17th Earl of Sutherland: M. Sutherland, *A fighting clan: Sutherland Officers, 1250–1850* (1996), pp. 172–73.

[30] NLS, MS 1485, fos. 107–108.

[31] ibid., fos. 123, 126, 129.

[32] NLS, Dep. 313/725, 29 July, 1 Dec 1769.

[33] NLS, MS 1485, fos. 229–30.

[34] ibid., fo. 248.

[35] A. Wight, *Present state of husbandry in Scotland* (4 vols, 1784), IV (i), pp. 297, 301–302.

[36] NLS, Dep. 313/984/1.

The new Sutherland factor was a lawyer and small laird from Easter Ross, Hugh Rose of Aitnach. Rose has gained a certain renown for his decided opinions against sheep farming which he first expressed in 1787. Although he advocated the improvement of the native sheep and their wool by the use of introduced rams, he was scathing in his condemnation of the 'kind of rage for sheep farming' which had 'of late years prevailed in many parts of the Highlands of Scotland' and which was but 'a mode for stretching and increasing rents; for the depopulation of a country can with no degree of propriety be term'd the improvement of it'. He warned of the precariousness of sheep farming, the problem of disease and the large amounts of capital required to establish a sheep farm. According to Rose, it was nothing but 'mischief that may arise from this kind of speculation'.[37]

It is thus not surprising that Rose presided over a conservative set which did little to alter the pattern of tenancies on the estate. The farms in some parishes were not set at all: the existing tenants were allowed to possess at will.[38] His factory was terminated by his death in 1791. He was replaced by John Fraser, a local lawyer but with estate management experience. With Lord Gower as British Ambassador in Paris from 1790 until the family's escape from France in August 1792, control largely lay with Fraser and the Edinburgh legal agent, Alexander Mackenzie who had taken over from Mackenzie. Many farms, particularly in the highland parts of the estate, fell out of lease in 1793 and Fraser was given a general charge to set lands 'at such rent (but not under the present) and under such conditions of improvement by the tenants as shall be stipulated between him and them'.[39] When he had taken over, Fraser had believed that many tenants would be prepared to give up their cattle and take to sheep farming, provided they could be shown how. But knowing little of sheep management, they were not prepared to take the risk.[40]

In April 1792 Fraser had reported that Donald MacLeod of Geanies had made an offer for the small farm of Layne in Assynt which he intended to stock with sheep. MacLeod, a Ross-shire landlord and the sheriff-depute, was the tenant of a very large sheep farm on the neighbouring Balnagown estate, and Fraser felt that it was unwise to allow the same man to hold land on either side of the estate boundary, '[a]s thereby the Marches might come to be disputed and a litigation be the consequence'. Moreover MacLeod's offer of £24 only represented a 36 per cent increase over the existing rent.[41]

In June, after visiting the whole of the estate, Fraser wrote a short report to Mackenzie. He had paid particular attention to the lands intended to be set, and had obtained advice enabling him to judge 'what additional rents could be looked for'. There had been a rumour in the country for some months that Earl Gower had received 'a very large offer from south country graziers for the whole estate of Assynt for sheep farms'. The local tacksmen and small tenants hoped that they would be given 'preference at such rents as they could afford'. The present rent of Assynt amounted to £830 but Fraser estimated that an additional rent of £350 or £400

[37] NLS, Dep. 313/979, memorial respecting the Earldom of Sutherland. Another version of this paper may be found in J. Sinclair, *General View of the Agriculture of the Northern Counties and Islands of Scotland* (1795), pp. 162–64.

[38] NLS, Dep. 313/1114/13.

[39] NAS, Dornoch Sheriff Court Records, SC9/28/1, pp. 8–9.

[40] A. Ker, *Report to Sir John Sinclair of Ulbster ... of the state of sheep farming along the eastern coast of Scotland, and the interior parts of the Highlands* (1791), pp. 22–23.

[41] NLS, Dep. 313/1114/13.

[42] NLS, Dep. 313/1114/14.

could be obtained from the present possessors, 'and few or no families turned off the estate'. Parts of Strathnaver, Kildonan, Rogart and Lairg were under unexpired leases or wadsets. However, augmentations of rent could be made on some farms and Fraser concluded that the lands now out of lease in the highland parts of the estate could be let to the present possessors for an additional yearly rent of £700. On the other hand, parts of the estate, especially Assynt, could produce a greater rise of rent if put under sheep and the present possessors removed.[42]

This lack of enthusiasm for sheep farming can only have been reinforced by events at the end of July and beginning of August when an attempt was made by people from parts of Ross-shire and Sutherland to drive the sheep from the northern Highlands, an event which became known as *Bliadhna nan Caorach*, 'The Year of the Sheep'. Although it was also referred to as the 'Ross-shire Insurrection', the uprising was not confined to Ross-shire, but affected farms on the Balnagown and Rosehall estates in Sutherland.[43] The uprising came at a critical juncture for the letting arrangements on the Sutherland estate.

The cautious approach of the Sutherland estate management may be gauged by its handling of offers by two Ross-shire sheep farmers, Duncan Munro of Culcairn and Walter Ross of Cromarty, acting for John Rose (son of the former factor), for the farm of Wester Lairg. In Fraser's view, 'a tenant in possession ought to have the preference on equal terms': the farm should be set on the same day as all the others on the estate and the highest offer preferred. Fraser warned that, as the farm bordered a forest, care should be taken to ensure that encroachments did not take place. Moreover, Ross was 'at this hour advertising parts of the Cromarty estate for sheep farms, and Culcairn has already set the highlands of his own estate for sheep also at an increase of rent. These gentlemen would reside only for two or three months yearly in Lairg, bad neighbourhood would ensure twixt them and the poor people, and incroachments on forests would become cause of complaint'. Fraser suggested that Rose should accommodate himself on his wadset lands in Strathbrora.[44]

In the event, at the set of 1793, the estate management chose to favour the present possessors and to extract only a moderate increase of rent.[45] It would be a mistake, however, to assume that the estate ignored sheep farming completely. One spur to this was the existence of Colonel Sutherland's sheep farm of Killin, now in the landlord's possession. In 1790, a shepherd from the south of Scotland, had judged that the farm could carry 600 sheep, including 200 breeding ewes. The wool should produce an annual income of £60 and sheep sales would produce a further £105. After deducting an assumed rent of £12 10*s*., interest on the purchase of stock, expenses of management and any losses, he estimated that the farm could bring an annual profit of £80.[46]

Nor was the Sutherland estate immune from the proselytising zeal of Sir John Sinclair of Ulbster who had been experimenting with new breeds of sheep since about 1785. Three years later he had bought the estate of Langwell in Caithness where he had introduced a flock of 500 Cheviot ewes. In 1791 he had founded the Society for the Improvement of British Wool.[47] That

[43] This episode is noted below. For a general account of the 'insurrection' see E. Richards, *The Highland Clearances* (2000), pp. 86–104.

[44] NLS, Dep. 313/1114/18.

[45] NLS, Dep. 313/1114/24.

[46] NLS, Dep. 313/983/59; 984/1.

[47] Sinclair, *General View*, pp. 181–91; R. Mitchison, *Agricultural Sir John: the life of Sir John Sinclair of Ulbster* (1962), pp. 101–19; *Caledonian Mercury*, 29 Oct. 1792.

year the Society sent 50 rams and 100 Cheviot ewes to the northern Highlands where they were distributed to 40 or 50 landlords and farmers. Most of the sheep went to Caithness but it appears that a ram and two ewes were retained at Dunrobin. According to Sir John, the trial 'answered remarkably well. The first year they were kept in the inclosures of Dunrobin, where each ewe brought two fine lambs; but this was not accounted a fair trial, at least of their hardiness'. The following year the sheep were sent to a farm 'in the upper part of the country, where they fared in common with a very hardy breed. Upon examining them in the spring following, they were found perfectly strong and healthy'.[48] The upland farm was almost certainly Killin.

In November 1793, two shepherds from Tweeddale reported on various grounds in east Sutherland.[49] The west side of Dunrobin Glen, the Forest of Ben Horn, and the adjoining hill pastures would be 'a very poor, and unprofitable sheep walk'. It lacked good grass pasture, the heathland was of poor quality, and there was no wintering ground. A number of adjoining possessions should be added and the arable land put down to grass. This would create a farm capable of supporting a flock of 400 sheep, but it would only bring a rent of £20. Killin, the associated lands of Sallachie, and the Forest of Sletdale in the parish of Loth would support 1100 sheep including 400 ewes and produce a rent of £60. John Bookless, overseer of the Mains and adviser on farming matters in general,[50] agreed that the first sheep walk was not worth creating. But he suggested that Killin could in fact could carry 900 sheep which would produce an income of £225 and an annual profit of £111.

Fraser considered that neither valuation had come up to expectation, and suggested that an advert might tempt higher offers. The alternative was to bring in some proper shepherds and try Bookless' plan to build up the landlord's flock.[51] In 1794, the estate advertised Killin and the Forest of Sletdale as 'very extensive, and well adapted for a sheep run'. Two Ross-shire farmers, Alexander Cameron at Dalmore by Novar and George Munro of Culrain, made an offer of 60 guineas, including public burdens, for a nineteen-year lease. Munro warned, though, that some of the tenants of the farms adjoining the forest might be 'inclined to circumscribe its boundaries from their cattle of late years being allowed to range free'.[52] It was an accurate prediction of the difficulties which sheep farmers could experience when their lands adjoined the grazings of small tenants. The interest of Cameron, who was originally from Fort William and was farming on an extensive scale, was significant. However, the Sutherland estate may have been put off by his being a principal victim of the 1792 insurrection.[53]

In the event Killin remained in the hands of the landlord. Between 1797 and 1800 the stock was increased from 267 to 600 sheep. In the latter year it was estimated that, valuing the stock on the ground at 12*s.* per head, the farm had shown an average profit of about £52 per year. The

[48] Society for the Improvement of British Wool, *Observations on the different breeds of Sheep* (1792), pp. xv–xvi; Sinclair, *General View*, pp. 145–6.

[49] Both Ben Horn and Sletdale were ancient hunting forests.

[50] NLS, Dep. 313/982/34.

[51] NLS, Dep. 313/983/59.

[52] NLS, Dep. 313/1114/8, 28; *Caledonian Mercury*, 24 Feb. 1794.

[53] Alexander and his brother, Captain Allan Cameron, were amongst the earliest sheep farmers to come to Ross-shire and were principal victims of the 1792 insurrection. Captain Cameron was sequestrated in 1795. Not only was he an extensive sheep farmer, but he was also a drover and dealer in cattle: NAS, Court of Session papers, CS17/1/14, p. 95; *Caledonian Mercury*, 2 Apr, 27 July 1795; G. S. Mackenzie, *A General Survey of the Counties of Ross and Cromarty* (1810), p. 130.

wool had produced over £34 per year. But the major item of income had come from 124 wedders and 15 lambs sold at the raising of the Sutherland Highlanders Regiment. Moreover, the winter feed was also cheap; 150 stone of hay had come from Dunrobin each year. As Fraser pointed out, the profit calculation was based on an assumed rent of £10 per year when a rent of £40 would have been more realistic. Indeed the factor advised putting as much of the farm as possible under arable and selling off half of the sheep; two good crops of oats 'would return more than the sheep for seven years'.[54]

The estate management's continuing interest in sheep farming was more than matched by some of the tacksmen farmers. In the 1790s, several of Assynt tacksmen introduced sheepflocks. John Herd is on record in 1794 and 1799 as being employed as a shepherd by Alexander Mackenzie, tacksman of Eddrachalda. (Herd was also a subtenant of land in Strath Oykel.[55]) Captain Kenneth Mackenzie, tacksman of Ledbeg, was listed in 1798 as a member of the Sheep Farm Association which had been founded three years previously.[56] Two years later he joined with Murdoch Mackenzie in Stronchrubie in turning the farms of Dubh Clais and Druim Suardalain over to sheep.[57] The Scobie family were also involved. Elsewhere on the Sutherland estate, tacksmen such as William Munro of Achany and Captain Donald Matheson of Shinness also entered sheep farming of their own accord, without any stimulus from the estate management. Others experimented on a smaller scale. Colonel George Sutherland was a tacksman at Rearquhar in the parish of Dornoch with a mixed stock, including a small flock of sheep on an upland possession. Although elderly, from 1795 he slowly changed his over from native breeds to the new 'large sheep'. His little flock of large sheep continued to grow even though the meat and wool were only used for household or local consumption.[58]

This involvement shows that there was a willingness on the part of tacksmen to engage in commercial sheep farming, even though a lack of capital and the relatively small size of their holdings tended to limit the scale of their operations.

II

We now turn to the Reay and the northern estates of Bighouse and Strathy or Armadale. Together these made up the major part of the ancient province of Strathnaver which reached from the border of Caithness to Kylesku on the west coast of Sutherland. The Reay estate, which for most of the eighteenth century included the modern parishes of Tongue, Durness and Eddrachillis, was second only to the Sutherland estate in extent.[59] It was, though, a purely highland estate, with none of the richer arable land found in eastern Sutherland. George Mackay, Lord Reay had been educated on the continent, and when he came of age in 1699, took possession of an estate with a heavy burden of debt. It was not until the 1720s that he was able

[54] NLS, Dep. 313/984/1.

[55] NAS, SC9/7/44, summons of removing Hugh Ross and John Herd; NAS, SC9/7 (1799) summons of removing Mackenzie v Heard.

[56] NAS, Fraser Mackintosh Collection, GD128/36/8/5–8; GD128/47/4/18.

[57] NAS, SC9/7 (1802) summons of removing Mackenzie v Tenants of Stronchruby and others.

[58] E. R. Mackay, *George Sutherland of Riarchar* (nd); NAS, Sutherland of Rearquhar Papers, GD347/33/46, 78; GD347/49 pp. 175, 187.

[59] For further detail on the Reay estate during the 18th century, see M. Bangor-Jones, 'From Clanship to Crofting: landownership, economy and the church in the province of Strathnaver', in J. R. Baldwin (ed.), *The Province of Strathnaver* (2000), pp. 49–51.

to invest in improvements. Despite living on the north coast of Sutherland, he developed an active interest in agricultural matters. He was a leading member and correspondent of the premier agricultural society in Scotland, the Society of Improvers, and was latterly its President.[60] His agricultural experiments were conducted either on the Mains of Tongue, or on the Mains of Balnakeil, in the parish of Durness. The latter included particularly fine grazings on the peninsula of Faraid Head, and were also not far from the 'sheep rooms' of the Parph on the largely uninhabited expanse between the Kyle of Durness and Cape Wrath.

Documents relating to the sale of Lord Reay's livestock after his death in 1748 suggest that this experiments had included the introduction of new breeds of sheep. The stocking included 1075 sheep which were sold for £153 to two of the sons of his second marriage, including Hugh Mackay of Bighouse. In addition, 'six large sheep and Twelve Rams young and old' were included free.[61] Mackay had been effectively the manager of the Reay estate since 1743. When Lord Reay had died, his eldest son, Donald, had been subjected to a restrictive trust, controlled by his younger half-brothers. Mackay was also given possession of Tongue House, the Mains, and had received a tack of the remainder of the estate, including the Balnakeil pastures.

Mackay was heavily involved in the cattle trade, but it is evident from his correspondence with his son-in-law, Colin Campbell of Glenure, in Argyllshire, that his interests extended to sheep.[62] In September 1749, Mackay wrote,

> Do as you please, with respect to the sheep, you can for a trial, command one hundred of them, of any kind you incline most for, either wedders, sheep with or without lambs, year olds etcetra, of one or different kinds, as suits you best. I sold lately of my wedders at 6*s.* each, to the Inverness butchers, and a parcel at 5*s.* not a bad price, considering my distance from the mercats.[63]

The following year, Mackay reported that he had sold his sheep for 7*s.* a head. He proposed sending a selection from Durness to Glenure, including 'some old wedders for eating, some young ones, to improve on your grounds, some yeel sheep, 3 and 4 year olds, some year old she ones, and some lambs'. In July, almost 130 sheep, great and small, were sent south. In May 1751, Mackay informed Glenure that he would have very few of the large wedders for sale. There had 'been a great death amongst the neighbouring Sheep, q[ui]ch will rise ye demand about. You may write what price, you could fetch me for both kinds, I could not sell [torn] 6*s.* 6*d.* to 7*s.* each, ye Tweddale brood, and five shillings ye c[ountry?] wedders, about 3 years old'.[64] These transactions suggest that George Lord Reay had introduced some Black Face or Tweeddale sheep onto the Parph and that, while the stock may have been small in number initially, it had continued to increase.

Although in 1756 Mackay was given a new 15-year tack of the estate, two years later he

[60] R. Maxwell, *Select Transactions of the Honourable The Society of Improvers in the knowledge of agriculture in Scotland* (1743), pp. 130–134, 137–138, 233.

[61] NAS, Reay Papers, GD84/2/15A, Memorial and Queries for Lord Reay, 1766.

[62] Colin Campbell married Hugh Mackay's eldest daughter in 1749. He was none other than the Colin Campbell who was murdered in 1752 and who has become known to posterity as the Red Fox in Robert Louis Stevenson's *Kidnapped.*

[63] NAS, Campbell of Barcaldine Muniments, GD170/972, fo. 41.

[64] NAS, GD170/972, fos. 54–55, 58, 67. Yeel sheep are yeld or barren sheep.

relinquished possession, and went to live on his own estate of Bighouse. This appears to mark the point when Donald Lord Reay was able to take possession of the two Mains farms which he held until his death in 1761.[65] While initially circumscribed by the family trust, his son George was able to take possession of the estate, including the Mains farms in 1764. George Lord Reay appears to have inherited his grandfather's interest in estate improvements.[66] In 1767, the naturalist James Robertson, noted that, while there were few sheep in the north, 2500 were kept by Lord Reay and they 'had succeeded so well, that he intended to bring from the south 5000 more'. Part of Faraid Head was enclosed 'for the purpose of receiving my Lord Rae's newly weaned lambs'.[67] In April, Lord Reay's grieve at Balnakeil warned that the shepherd on the Parph had been ill and the sheep may have suffered, especially with the storms. Provender was short and many sheep had died in the second half of March, especially the hogs.[68] When taking possession of the estate, Lord Reay had entered into a 10-year contract with the estate factor for the disposal of the estate produce, including wedders, sheep, hoggs, lamb and wool, and also goat and sheep cheese.[69]

Lord Reay eventually managed to overturn the trust in 1767, but died the following year. The inventory of his moveable effects, taken in August 1768, is particularly revealing.[70] As well as £1000 worth of cattle, his stocking included over £600 of sheep:

1725 'ewes wedders and rams all at Durnes of different ages valued one with another 6 shillings sterling each'	£517 10*s.* 0*d.*
380 'Lambs in the Farr head valued one with another 3 shillings Sterling each'	£57 0*s.* 0*d.*
300 'Lambs reckoned unfit for keeping disposed of at the Torresdale tryst for which there was received after defraying charges'	£36 10*s.* 0*d.*
[Total]	£611 0*s.* 0*d.*

Lord Reay was succeeded by his mentally incapable younger brother Hugh and the estate was managed by various tutors and factors until his death in 1797.[71] As will be recalled, Campbell of Lagwine entered into discussions with the tutors in 1768 over the possibility of including the Reay Forest in a sheep farm. These came to nothing but the tutors, particularly General Alexander Mackay, certainly saw the future of the Highlands as a 'grazing country'.[72] But the General did not wish to destabilise Highland society and proposed similar measures to the Sutherland estate in protecting the subtenants from the tacksmen. The latter were to be given

[65] His possessions included the Mains of Tongue, with a rental value of £267, and nearby Braetongue, £54, the Mains of Balnakeil with 'Idin, Mid Park, Farret and Graseings thereto belonging' valued at £1000, Craggievullin worth £146 and three sheep rooms £40 (all values are in pounds Scots). NAS, GD84/2/50/5.

[66] NAS, Register House Papers, RH15/182/3, 4, 6.

[67] D. M. Henderson and J. H. Dickson (eds), *A Naturalist in the Highlands. James Robertson: his life and travels in Scotland, 1767–1771* (1994), pp. 53–4.

[68] NAS, RH15/182/14.

[69] NAS, GD84/2/52. In April 1767 10 stone of sheep cheese was brought to Tongue House. NAS, RH15/182/14.

[70] NAS, RH15/182/8.

[71] Lord Hugh's paternal uncles, Hugh of Bighouse, George of Skibo and Alexander were appointed as tutors and curators. Skibo had the day-to-day management of the estate from 1768 until his death in 1782. The sole surviving tutor and curator, General Alexander Mackay, took over the management of the estate until his own death in 1789. From 1789 until 1797, the estate was managed by George Mackay of Bighouse in the capacity of factor *loco tutoris* to his Lordship.

[72] W. Macgill, *Old Ross-shire and Scotland* (1909), p. 158.

what lands they could farm themselves, without the aid of subtenants.[73] There were to be removals of subtenants, but these were, as far as can be ascertained, for cattle rather than sheep.[74]

Both the Mains farms were put into the hands of tenants. Balnakeil, including its sheep flock, was let in 1770 to Colonel Hugh Mackay. He was the eldest son of an estate factor and tacksman, had prospered in Jamaica, and had returned to become a substantial farmer.[75] In 1779, with the Colonel's lease near to expiry, Balnakeil was advertised for letting. Particular attention was drawn to the quality of the black cattle reared on the grazings attached to the farm. However, mention was also made of 'a large tract of very good pasture grounds for sheep in the neighbourhood ... fit for stocking of two thousand sheep and upwards', which was available for letting, either separately or with the Mains. 'The stocking of sheep on these grounds were originally from Tweeddale; and, from the superior quality of the pasture, are now raised to a size superior to the run of Tweeddale sheep.'[76]

The Mains of Balnakeil was let to Roderick MacLeod from Skye. His possessions included various grazings and also the Faraid Head, but not the Parph.[77] MacLeod's son-in-law, Donald Forbes, tacksman of Ribigill, near Tongue, succeeded after his death.[78] Their stock may have included sheep: certainly Forbes was to become a substantial sheep farmer. The Parph, now a separate possession, continued to be devoted to sheep.[79] In 1789 the Sheep Rooms at Cape Wrath were recorded as being let from year to year to James Anderson, manager for the merchant partnership at the fishing station of Rispond, and tacksman of Keoldale. It is possible that Anderson was mainly interested in providing meat for the crews of herring busses.[80] By 1797 the Parph was held by Colonel Mackay of Bighouse.[81]

A new sheep farm was created at Glendhu in the parish of Eddrachillis in the late 1780s. The initiator was Colin MacDiarmid from Argyllshire who had a family connection with Mackay and became his subtenant in 1787. MacDiarmid brought a substantial sheep stock to the farm, although he was also to deal in cattle and horses and his activities extended to herring fishing.[82] In 1793 MacDiarmid took on a steelbow tack of the cattle and sheep on the lands of Laudale in Morvern.[83] But later that year he went bankrupt. In Mackay's view, MacDiarmid's failure was 'partly from inadvertancy, and from the times being bad, been unfortunate ... the money laid out at Glendow, has been too much'.[84] MacDiarmid had estimated that the farm was capable of keeping 3000 or 4000 sheep.[85] His stock though extended to no more than about 600 breeding ewes.[86] According to his trustee, the 'stocking of every description and grass are in the highest

[73] NAS, GD84/2/15a, Alexander Mackay to Donald Forbes, 7 May 1788.

[74] Withrington and Grant (gen. eds), *Statistical Account of Scotland*, XVIII, pp. 385–86.

[75] A. Mackay, *The Book of Mackay* (1906), p. 315; I. Grimble, *The World of Rob Donn* (1979), pp. 191, 195.

[76] *Caledonian Mercury*, 5 Apr. 1779.

[77] NAS, GD84/section 2/84, pp. 197–98; NLS, Dep. 313/3328, summons John Dunlop v Lord Reay. MacLeod was in possession by 1785, if not earlier.

[78] NLS, Dep. 313/3326.

[79] H. Morrison (ed.), *Parish Register of Durness, 1764–1814* (Scottish Record Society, 38, 1911).

[80] NAS, GD84/section 2/84, pp. 197–8.

[81] NLS, Dep. 313/3326. The rent was only £8 as compared with over £130 for Balnakeil.

[82] It was later claimed that 'he dealt largely in sheep and cattle; and as is very common in that part of the Country, he was a drover as well as a farmer'. Advocates Library, Session Papers, Campbell Collection, Vol. 109, no. 99, p. 6. He was described as drover and cattle dealer when sequestrated: NAS, CS235/Seqns/M/1/30.

[83] NAS, GD170/488/2/26.

[84] NAS, GD170/540, MacDiarmid to Campbell, 17 July 1795.

[85] NAS, GD170/1855/1.

[86] NAS, GD170/540, list of stocking in Glendow, 1794.

order, and I find he has this season about 500 lambs'.[87] The farm was taken over by Alexander Campbell of Barcaldine who obtained a sub-lease of Glendhu and Ardaloch from Mackay for 16 years from 1794. Barcaldine was tenant of extensive farms in Argyllshire and Perthshire and his total stock was estimated to be worth £7000.[88]

The involvement of Hugh Mackay of Bighouse with sheep farming on the Reay estate in the 1740s and 1750s has already been mentioned. Mackay may have taken some sheep with him when he moved to his own estate which bordered with Caithness. However, all his stock was disposed of after his death in 1771.[89]

Through inheritance and purchase, Mackay's granddaughter Louisa, one of the heiresses, and her husband, George Mackay of Island Handa, a tacksman on the Reay estate, acquired the whole of the property. The new Bighouse also took an active interest in agricultural matters. In 1791 it was reported that he kept 'some hundred head of sheep of a mixed breed, between the white faced and black faced kinds'. He sold very few, 'intending to increase his flock considerably, and proposes to try such experiments as are the most likely to improve the quality of his sheep and of his wool'.[90] A similar report made a year later confirmed that, 'some years ago' he had stocked a part of his estate with Black Faced sheep from Argyllshire (his wife had been brought up in Argyllshire). He then became associated with Sir John Sinclair's experiments with the Cheviot breed. In 1791 Mackay took two of the Cheviot rams supplied by the British Wool Society and put them amongst his flock of the 'true Argyleshire' or Black Faces. The resultant cross lambs, it was reported, were 1*s.* 6*d.* to 2*s.* more valuable than the Black Faced lambs.[91] He continued to be associated with the spread of the Cheviot breed.[92] As already noted, he took over the sheep stock on the Parph peninsula at Cape Wrath until his death in 1798.[93]

The estate of Strathy on the north coast of Sutherland was held by one of the Mackay's cadet lines. In 1783, however, the estate passed by marriage to William Honeyman, the son of a prominent Orkney landowner who had entered upon a legal career in Edinburgh and eventually rose to become a Court of Session judge. Honeyman also bought lands in the central Lowlands which he developed. He does not appear to have ever resided in Sutherland.

The Mains of Strathy was advertised in 1788 as a 'sheep and grazing farm' for letting the following year. It contained a considerable extent of arable and there is no evidence that, when let, it was stocked with sheep.[94] In 1790 a more enticing advert appeared for the extended lands of Armadale. 'Every reasonable encouragement' was offered and the proprietor promised to pay the expenses of whoever took the lease in coming to Sutherland.[95] Armadale was let in 1792 on a nineteen-year lease as a sheep farm to Andrew Kerr who had undertaken a tour the

[87] NAS, GD170/2019/1.

[88] Advocates Library, Session Papers, Campbell Collection, Vol. 109, no. 100, pp. 18–19. MacDiarmid continued to have an involvement in the management of the farm until his death in 1799.

[89] *Caledonian Mercury*, 22 Apr. 1771.

[90] A. Ker, *Report to Sir John Sinclair of Ulbster ... of the state of sheep farming along the eastern coast of Scotland, and the interior parts of the Highlands* (1791), p. 24.

[91] K. Richardson, 'Remarks, made in the course of a tour, through the Highlands of Scotland', in *Observations on the different breeds of sheep* (1792), pp. 54–56.

[92] NAS, Sinclair of Freswick Papers, GD136/478/1.

[93] *Caledonian Mercury*, 20 Apr. 1799.

[94] *Caledonian Mercury*, 11 Aug. 1788; 17 Aug. 1799.

[95] *Caledonian Mercury*, 23 Oct. 1790; 18 Mar. 1791.

previous year of many of the sheep farming districts in the east of Scotland and the Highlands for Sir John Sinclair and the British Wool Society. It appears that Kerr was the principal of a partnership from the Borders.[96]

The Armadale flock thrived and indeed some were sold to Caithness 'improvers' such as Innes of Sandside. In 1796 Mrs Innes wrote 'of the true breed come from Cheviot in their infancy to Armadale are seasoned to our climate, thriving to excess and free of all mixtures'.[97] Kerr, however, was already in financial difficulties.[98] His trustees made over the stock to Gabriel Reid who took possession the following year. He was the son of Ellerington Reid, formerly of Prenwick, Alnham in Northumberland, who had been one of the original partners. He came to reside in Sutherland and in time became one of the foremost sheep farmers in the northern Highlands.[99]

III

The final district to be considered comprised a number of properties of varying size in the parishes of Creich and Lairg in the south east of Sutherland. The Balnagown lands of Strath Oykel were part of a much larger estate which included both lowland and highland properties in the adjoining county of Ross and Cromarty. The estate had passed by marriage to Captain John Lockhart who took the additional surname of Ross (by which name he was known to contemporaries) after he succeeded in 1761. A distinguished naval commander, after the Peace of 1763 he settled in the north where, over the next 25 years or so, he was to spend enormous sums on improving his estates, particularly his lowland properties in Ross and Cromarty.[100]

According to Sir George Mackenzie, author of the Board of Agriculture report for Ross and Cromarty, Ross had observed that, while the highland part of his estate was very extensive, it yielded little revenue and was of limited use to the occupiers. When travelling through Perthshire, he had noticed that the Black Faced sheep there could not only survive the severest winters, but were more profitable than black cattle. In 1774 or 1775, Ross had taken one of his farms into own hands and established a flock of sheep. In the light of this account, it has been generally assumed that this farm was on the southern bank of the Oykel, in the county of Ross and Cromarty.[101]

Estate records which might verify this are unfortunately sparse. However, it is clear that Ross already had an interest in sheep by 1771.[102] Indeed, it is probable that he had begun experimenting with sheep in the 1760s. These experiments may well have taken place on the mains farm of Braelangwell in Strathcarron in Ross and Cromarty which Ross had improved considerably.[103] On the other hand it was not until the late 1770s that Ross established

[96] Richardson, 'Remarks', p. 56; Sinclair, *General View*, p. 151; *Caledonian Mercury*, 11 June 1796; J. Henderson, *General View of the Agriculture of the County of Sutherland* (1812), p. 27.

[97] Henderson, *General View*, p. 27; NAS, GD136/478/1.

[98] *Caledonian Mercury*, 11 June 1796.

[99] NAS, GD170/540, petition for Duncan McMillan 1800; Henderson, *General View*, p. 27; J. Loch, *An account of the improvements on the estates of the Marquess of Stafford* (1820) App. II, pp. 32–33. I am very grateful to Grace Lord of Scarborough, Ontario for providing details of the Reid family.

[100] NAS, Teind Commissioners Records, TE19/159; Wight, *Present state of husbandry*, IV, pp. 259–265.

[101] Mackenzie, *General Survey*, pp. 126–30; I. R. M. Mowat, *Easter Ross, 1750–1850: The Double Frontier* (1981), p. 35.

[102] NLS, MS 1485, fo. 229.

a sheep farm in Sutherland. As Sir George Mackenzie pointed out, a check was provided by the existing leases.[104]

In 1777 Ross had returned to active service. He succeeded to a baronetcy the following year and in 1779 was promoted to Admiral. However, he continued to make arrangements for purchasing sheep though his factor.[105] In 1777 the lands of Sallachie in the upper reaches of Strath Oykel were taken into Ross's own hands as a sheep farm.[106] The following year he tried to gain possession of Gleann na Muic in upper Glen Cassley but, the lease had still many years to run, and it appears that the tenant's terms were too high.[107] However, in 1779 he obtained possession of Kinlochalsh which adjoined Sallachie.[108]

Ross introduced Black Faced sheep from Crawford Moor, bought at Linton market. He had tried to 'mend' or improve the Black Faced breed with rams from Bakewell, Culley of Northumberland and Chaplin of Lincolnshire, but the experiment was not a success. The crosses were probably not sufficiently hardy. Rams from Tweeddale, on the other hand, produced better offspring and by 1781 Ross apparently had a flock of 3000 sheep, including 1500 breeding ewes.[109] However, the market was oversupplied and prices were depressed. Wight considered that the only remedy lay in reducing sheep numbers and returning to the 'true product of the Highlands', horned cattle, for which there was always a demand.[110] According to Sir George Mackenzie, Ross also suffered greatly from losses by theft – no doubt following the disastrous winter of 1782–83 – and his shepherds were treated as intruders.

In 1784 Sir John handed over Kinlochalsh and Sallachie to William Geddes from Tummel Bridge in Perthshire, tenant of a sheep farm on the estate of Stuart of Garth.[111] According to Sir George, Geddes was 'a very sensible sagacious man, who understood the business thoroughly'.[112] He was the first of the southern graziers to come to Sutherland. Geddes took a nineteen-year lease of Kinlochalsh, Sallachie and part of the hill grass of Tuscarry, paying 6*d.* per head for 2000 sheep for the first three years and 9*d.* per head for the remaining 16 years.[113] The following year he expanded by gaining possession of Inchbea, and Baddaroch, where the family was to live, and the arable lands of Tuscarry. The former tenants were heavily in arrears for rents and meal supplied by Ross and were also continuing to steal sheep.[114] When Geddes died in 1790, his wife, Margaret MacGregor, took over the farm.

[103] NAS, TE19/159; NAS, GD129, Balnagown Papers, section 1/81/21.

[104] Mackenzie, *General View*, p. 127.

[105] NAS, GD129/section 1/81/correspondence, 1778–79.

[106] NAS, SC9/7 (1777), lybelled summons of removing Capt Ross v Rosses; NAS, GD129/31/118/18 and GD129, box 4, bundle 10.

[107] NAS, GD129/section 1/81/14.

[108] NAS, SC9/7 (1799) lybelled summons of removing Sir John Ross of Balnagown and Factor v Ross etc.

[109] Wight, *Present state of husbandry*, IV, p. 262. Wight states 'Cowley' and Chaplin; NAS, GD129/ section 1/81/22; *Caledonian Mercury*, 16 Sept. 1778 records the sale of cross bred rams cross bred from Bakewell and Cowley's rams. Sir John also tried Bakewell and Cowley's bulls on west Highland cattle.

[110] Wight, *Present state of husbandry*, IV, p. 262. Wight states that the stock lay on Sir John's farms in Assynt. The sheep farm included the mountain of Ben Mor Assynt but not the district of Assynt.

[111] NAS, SC9/7 (1792), warrants against sheep rioters; Mackenzie, *General View*, p. 129. Sir George's statement that Geddes took over in 1781 or 1782 appears to be slightly out.

[112] Mackenzie, *General View*, p. 129.

[113] NAS, GD129/box 31/bundle 120, rental Marts, 1784.

[114] NAS, SC9/7 (1784), petition Admiral Sir John Ross and Factor; NAS, SC9/7 (1785), summonds of removing Sir John of Balnagown and Factor v Alex. Ross and others; NAS, TE19/159, pp. 70–71.

By 1792 her flock consisted of about 4000 sheep.[115] Four years later she got possession of Gleann na Muic.[116]

After Sir John died in 1790, his son Sir Charles Ross, set about increasing the number of sheep farms. In 1792 William and James MacGregor took the west side of Glen Cassley and Duncan MacGregor became tenant of the lands of Tutimtarvach. He was also to become tenant of the farm of Pulrossie on the Skibo estate. The MacGregors may well have come from Perthshire.[117] James MacGregor also engaged in cattle droving but got into financial trouble and gave up his share.[118] In 1796, Thomas Ross, tenant of Wester Turnaig, was also put in possession of Easter Turnaig. This may well have been a sheep farm, as Ross later farmed sheep on large scale in the neighbouring parish of Kincardine.[119] By 1800 Knockan, which was used to graze the landlord's cattle, and the low ground of Invercasley appear to have been the only lands in Strath Oykel not under sheep.

The small Rosehall estate, which included the east side of Glen Cassley, was one of the properties owned by William Baillie, who also acted as factor on the Balnagown estate for many years. Baillie dealt in grain, but does not appear to have been attracted to sheep farming. Rosehall eventually passed to Major Mackay Hugh Baillie, an army careerist and absentee landowner.

In 1788 Glen Cassley was let on a thirty eight year lease as a sheep farm to none other than John Campbell of Lagwine, without, as he later claimed, ever seeing the lands. As there was some uncertainty over the exact area, the tack contained a clause varying the rent if the farm was found to be less than 25 square miles or more than 30 square miles. Campbell took up residence at Badintagairt, and in 1791 it was reported that the farm 'seems to answer very well'.[120] Campbell, however, eventually brought an action before the Court of Session to have the farm measured as he particularly wanted the lands of Achness at the lower end of the glen, presumably for wintering. The farm was found to contain just over 19 square miles, and the rent was reduced from £130 to £100 2*s.* 6*d.* Baillie and Campbell bickered over payment of the rents and various actions were brought to sequestrate Campbell's stocking and remove him from the farm. In 1797 it was claimed that 'every thing upon the farm seems to be going to confusion, and the corns, sheep and cattle, liable to be carried off by any person who pleases to do so'. However Campbell survived as tenant until his death when the lease was assigned to Duncan MacGregor, sheepfarmer on the neighbouring Balnagown estate.[121]

[115] NAS, SC9/7 (1792), warrants against sheep rioters.

[116] NAS, SC9/7/45, summons of removing Sir Charles Ross against John Ross; SC9/7/45, summons of removing Mrs Geddess a Tenants of Glenmuick. The previous tacksman of Gleann na Muic, Hugh Ross, appears to have been involved in cattle dealings but had sublet the upper grazings to a shepherd employed in Assynt: SC9/29/3, 1790–1792, protested bills: Montgomery a Ross and Sutherland; SC9/7/44, summons of removing Hugh Ross a John Herd.

[117] NAS, SC9/7 (1791), summons of removing Sir Charles Ross and Factor a Hugh McLeod and others; SC9/7 (1792), warrants against sheep rioters; GD129/section 2/52, inventory of the current leases, 1808; *Caledonian Mercury*, 5 Jan. 1798, 8 June 1807.

[118] NAS, SC9/7/43, copy notorial copy bill of suspension, MacGrigor against Sutherland, 1794.

[119] NAS, SC9/7 (1788), summonds of removing Admiral Sir John Ross of Balnagoun and Factor v Ross and others; SC9/7/45, summons of removing Sir Charles Ross and Factor a Alex. Ross Doune; GD129/section 2/234/draft tack [to] Thomas Ross, present tenant in Turnack; *Caledonian Mercury*, 5 Jan. 1798, 8 June 1807.

[120] Ker, *Report to Sir John Sinclair*, p. 24.

[121] *Caledonian Mercury*, 21 Feb. 1788; Rural History Centre, University of Reading, SUT1/1/1, pp. 4–5; NAS, SC9/7/44, summons of irritancy and removing Coll: Baillie Agt. John Campbell 1794 [and petitions for sequestration].

The modest estate of Gruids in the parish of Lairg belonged to Sir George Gunn Munro of Poyntzield who also owned properties in Caithness and Ross-shire. His nephew and heir, George Gunn Munro, had failed as a merchant in London and to protect the estate, Sir George had executed a trust deed of entail which came into operation on his death in 1785. However, the trustees allowed Munro possession and management of the estate. This, though, was against a background of financial pressure.

Gruids had been set for seven years in 1789 and, while most of the possessors were small tenants, some farms with extensive grazings were held by absentee tacksmen, mainly for cattle.[122] As early as 1791, Munro was writing to his uncle and factor about having a 'serious meeting with my Gruids folks myself'.[123] Preparations were thus made well in advance of when the leases expired and, from 1794 onwards, the estate was advertised for letting as suitable for either cattle or sheep.[124] By August 1795 Munro had had many offers from sheep farmers. This left him in a quandary:

> I know not what to do – there is such as prodigious number of people upon the property – I lean towards the people but my interest pulls me forcibly the other way, – I ... am now master of every circumstance respecting the property – which I think will yield another *sort* of rent at any rate rather different from that it now pays – and I do not wish to see a tenant in it but who I shall be convinced can well pay and afford to pay what he engages for.[125]

In the event, Munro resisted the temptation to convert the whole of Gruids to sheep farming. But although the former pattern of tenancies was largely retained, the set achieved 'a considerable augmentation' of rent. This was especially true of the farms held by tacksmen. Braemore and Little Brae were set to John Ross with the rent rising from £28 to £65. Sallachy and Carnich were set to one Angus Kennedy, 'for sheep', with the rent rising from less than £15 to £57. In 1797 the 'lands and grassings of Crinich' were in the possession of Evan and Donald Rankin, evidently also sheep farmers.[126]

The more substantial estates of Pulrossie and Skibo, in the parishes of Creich and Dornoch, were for the most part fringed by low-lying hills to the north. At the eastern end, there were several large, mainly arable farms. The grazings were either commonty, shared by more than one estate, or common to several townships.

In the 1790s a good deal of publicity was given to the efforts of George Dempster of Dunnichen to develop these estates. (Although Pulrossie had been made over to his brother, a sea captain in the East India Company, Dempster retained the management of both estates).[127] Dempster himself had acquired wealth through the East India Company, and had a great interest in the development of the Highlands.[128] His plans for the estates, prepared in the early 1790s, centred

[122] NAS, GD347/49, pp. 157–58; GD347/81, George Gunn Munro to William Taylor, 21 Mar. 1796.

[123] NAS, GD347/73, George Gunn Munro to [GS] 2 Sept. 1791.

[124] *Caledonian Mercury*, 15 May 1794 to 7 Sept. 1795.

[125] NAS, GD347/81, George Gunn Munro to William Taylor, 20 Aug. 1795.

[126] NAS, GD347/12, fo. 64; SC9/7/45, summons of removing Evan and Dond. Rankin a Angus Ross Subtenant; SC9/7 (1808), summons of removing Munro of Poyntzfield v Tenants of Crinich Arskaig Auldskerry and Sallachy etc.

[127] NAS, SC9/28/1, pp. 48–49; *Statistical Account*, XVIII, p. 344.

[128] A. M. Lang, *A Life of George Dempster, Scottish MP of Dunnichen (1732–1818)* (1998).

on the establishment of manufacturing – most notably the establishment of a cotton mill at Spinningdale – villages, muir settlers, and plantations. At this stage, Dempster was not an enthusiast of sheep farming, and indeed wrote of the superior value of 'an estate inhabited by mankind, to one occupied by sheep'.[129]

However, extensive agricultural improvements were also put in train, particularly to the Mains of Pulrossie. These included the establishment in 1796 of a small sheep farm at Prontenach, a detached grazing or shieling which had belonged to the Mains. The farm was laid out by Andrew Thomson from Berwickshire who had been appointed grieve or farm manager of Skibo and Pulrossie the previous year.[130] It was stocked with 100 Cheviot ewes and lambs bought from Donald MacLeod of Geanies.[131] Geanies had apparently bought these in the summer of 1793, some from the Quickingcoat Farm on the English side of Cheviot Hills and others at the Fair of Yetholm.[132] According to Geanies it was 'extremely difficult to get them to purchase in the Cheviot country, as they are jealous of allowing the breed being transferred from there to our hills'. Geanies had a large farm stocked with Black Faced and realised it would take many years to change over to Cheviots.[133] In 1802 Prontenach was said to be stocked with 300 Cheviots in a 'thriving condition'.[134]

IV

The earliest phase of the history of sheep farming in Sutherland, apparently beginning in the 1730s and 1740s, was characterized by aristocratic experiments with non-native breeds. These experiments were not entirely ephemeral and may have improved the native sheep in some localities. It was in the last quarter of the century, however, that commercial sheep farming became firmly established in Sutherland. Sheep farming took off in the 1790s and by the end of the century there were about ten major sheep flocks in Sutherland, a handful of smaller flocks, and a number of small scale experiments. The interest shown by local tacksmen, albeit sometimes on a limited scale, is of particular significance. The spread of sheep farming in the northern Highlands may have lagged behind the Southern Uplands of Scotland, but it would be wrong to associate the introduction of sheep farming in Sutherland solely with the Clearances of the early nineteenth century.[135]

The transformation of clan chiefs into landlords was a drawn out process which began long before 1745 and had not been completed by 1800.[136] Chiefs and landlords, however, had always been interested in ways to increase their income. But if sheep farming was to get beyond the experimental stage, the economics of the enterprise had to be addressed. To be successful,

[129] Withrington and Grant (gen. eds), *Statistical Account of Scotland*, XVIII, p. 350.

[130] Thomson claimed to have 'acquired a thorough knowledge of modern husbandry, under some of the most skilful improvers in the counties of Northumberland and Berwick'. *Caledonian Mercury*, 26 Jan. 1807; NAS, CS235/g/30/1.

[131] NAS, GD136/468/181.

[132] *Caledonian Mercury*, 18 Feb. 1796.

[133] NAS, GD136/468/432.

[134] *Caledonian Mercury*, 11 Dec. 1802.

[135] R. A. Dodgshon, 'Agricultural change and its social consequences in the southern uplands of Scotland, 1600–1780' in T. M. Devine and D. Dickson (eds), *Ireland and Scotland, 1600–1850* (1983), pp. 46–59.

[136] A. I. Macinnes, *Clanship, Commerce and the House of Stuart, 1603–1788* (1996); R. A. Dodgshon, *From Chiefs to Landlords. Social and economic change in the Western Highlands and Islands*, c. *1493–1820* (1998).

sheep farms needed to be large and capable of being divided into separate hirsels, as different ages and kinds of sheep required different kinds of pasture.[137] Tenants with the necessary capital, commercial sense and technical knowledge were in short supply. With sheep farming moving slowly northwards from the southern fringes of the Highlands from about the 1760s, Sutherland landowners had the hard task of attracting tenants to come further north to where the distances from markets were that much greater. Many landlords and their advisers perceived sheep farming as a speculative enterprise. The level of risk did decline as the new breeds of sheep were improved and as prices rose. But it is noticeable that even some of the incoming sheep farmers maintained an interest in cattle farming and/or the cattle trade.

Market opportunities were of considerable importance. The native sheep were not only kept for domestic use: there was a limited regional trade. This trade survived the introduction of non-native breeds. However, the development of more distant markets provided better prospects. There is, as yet, no long-run series of price data for sheep and wool in the Highlands during the eighteenth century. Although it appears that the depression around 1780 was not without its impact, even in Sutherland, there was a steady rise in prices from the mid-1780s.[138]

If landlords were tempted by the prospects of increased rents from sheep, they had to face the fact that the native inhabitants would have to be removed. Sheep and people were incompatible. The sheep could make more efficient use of the hill pastures than cattle, but they required good wintering ground which was most conveniently provided by laying the arable and lower pastures of farms down to grass. In an age which regarded population as a source of national greatness and security, many landlords were reluctant to engage in the wholesale removal of the native tenantry. The move to put landlord-tenant relations on a completely commercial footing was gradual: as Gray states, the 'regard for a numerous tenantry lingered on'.[139] This is the context for the concern at the emigration from Sutherland in the early 1770s, and for the measures taken to protect the subtenants from overbearing tacksmen. There was also the desire by some landlords to gain prestige and to reap the economic benefits by raising regiments from their estates.[140] The development of a philosophy for estate reorganization which encompassed the provision of alternative employment, particularly through the fishing and kelp industries, in tandem with the clearance of the interior for sheep, came only slowly. The growth of population did not as yet feature in landlords' consideration of sheep farming, as it undoubtedly was to after 1815. For the moment, excess population was largely absorbed by the expanding small tenant economy, the growth of seasonal migration, and military recruitment.

It was easier for displaced people from the south-west Highlands to move to the developing centres of industry in the Lowlands, than it was for the people of Sutherland. As Richards has

[137] Gray, *Highland economy*, p. 89; T. M. Devine, *The transformation of rural Scotland: social change and the agrarian economy, 1660–1815* (1994), pp. 85–86.

[138] Richards, *Highland Clearances*, I, pp. 173–4; R. A. Dodgshon, 'The economics of sheep farming in the southern uplands during the age of improvement, 1750–1833', *EcHR* 29 (1976), pp. 551–69.

[139] Gray, *Highland economy*, p. 12. See also Dodgshon, *From Chiefs to Landlords*, pp. 241–42.

[140] A. Mackillop *'More fruitful than the soil'. Army, empire and the Scottish Highlands, 1715–1815* (2000). Mackillop's assertion that recruiting delayed the introduction of sheep farming on the Sutherland estate from 1775 to 1800 is not entirely persuasive.

pointed out, the further a district was from central Scotland, the 'greater was the problem of adjustment'.[141] In the short term, landlords were satisfied with a gradual rise in rental income from their existing tenants. As the vision of an alternative economic base for the small tenantry became more compelling and as prices of sheep continued to rise, landlords were more easily convinced of the case for sheep farming having established its practicality and potential profitability in the last decades of the eighteenth century.

[141] Richards, *Highland Clearances* (2000), p. 70.

Parish typology and the operation of the Poor Laws in early nineteenth-century Oxfordshire*

by Byung Khun Song

Abstract

This article investigates a number of parliamentary reports published during the first half of the nineteenth century to demonstrate that the distinction between open and close parishes was a crucial determinant of the ways in which the poor laws and the laws of settlement were implemented in English rural society. Focusing on Oxfordshire, it shows that three seemingly separate issues – whether parishes in different economic circumstances adopted different policies on poor relief, whether the parishes responding to *Rural Queries* of 1832 were representative of parishes in general, and whether the mid-nineteenth-century parliamentary returns properly reflected the real condition of the rural localities – are closely inter-related and that parish typology provides an important clue to understanding that inter-relationship.

Historians of nineteenth-century rural England have generally agreed that there were considerable, and often contrasting, differences between neighbouring villages in terms of their economic, social and demographic features. A great deal of scholarly energy has been devoted to establishing the nature and causes of the differences. As an effective analytical tool for such research, the notion of 'open' and 'close' (or 'closed') parishes has attracted considerable attention. For its economic livelihood, a close parish, where typically one or two elite individuals exercised tight control over the activities of parishioners, depended on the labour supply of the neighbouring open parish, where a diversified power structure prevented monopolistic or oligarchal control over parish affairs. The existence of a close parish is thus conditioned by the existence of a nearby open parish, the latter being closely interconnected with the former through labour mobility and the transfer of the maintenance costs for the labouring population.[1] A substantial body of research has explored various aspects of this distinction between open and close parishes, including demographic features, the timing of the introduction of agricultural machinery, and patterns of rural disturbances.[2] Of particular interest has been the question

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[1] For the definition of open and close parishes, B. A. Holderness, '"Open" and "close" parishes in England in the eighteenth and nineteenth centuries', *AgHR* 20 (1972), pp. 126–39; D. R. Mills, *Lord and peasant in nineteenth century Britain* (1980); Sarah Banks, 'Nineteenth-century scandal or twentieth-century model? A new look at "open" and "close" parishes', *EcHR* 41 (1988), pp. 51–73.

[2] To name a few of such works, John Broad, 'Parish economies of welfare, 1650–1834', *Historical J.* 42 (1999), pp. 985–1006; E. J. T. Collins, 'The rationality of "surplus" agricultural labour: mechanization in English agriculture in the nineteenth century', *AgHR* 35 (1987), pp. 36–46; J. R. Walton, 'Aspects of agrarian change in Oxfordshire' (unpublished D.Phil thesis, University of Oxford, 1976), p. 406; Eric J. Hobsbawm, and George Rudé, *Captain Swing* (1968); Andrew Charlesworth, 'The development of the English rural proletariat and social protest, 1700–1850: a comment', in Mick Reed and Roger Wells (eds), *Class, conflict and protest in the English countryside, 1700–1880* (1990), pp. 54–64.

of whether and to what extent poor relief and settlement business was differently administered in parishes across the contrasting typology.[3] Although some historians have expressed reservations on the utility of the open/close parish distinction, the typology has been so widely accepted as a meaningful conceptual framework that it now features in much research into the history of agriculture and the labour market.[4]

This is not to say, however, that the way the open/close parish distinction is used is uniform across the research. A large number of works employ the terms as a way of describing the socio-economic characteristics of the parishes which they discuss.[5] They classify individual parishes in terms of openness and closeness principally to depict their basic nature, but they do not use the distinction to investigate the relationship which any one parish bears to neighbouring parishes or to parishes within a moderate distance. Other works employ the terms to evaluate, explicitly or implicitly, the degree of 'openness or closeness'. For example, some research has traced the evolution of certain parishes showing characteristically open or close features. By examining the economic and social changes experienced by individual parishes, and thereby explaining the changing process of parochial characteristics over time, this research has made an important contribution to the study of the social structure of early modern and modern rural England.[6] However, this kind of work is possible only for those parishes which have ample surviving data on their social and economic conditions, and is therefore restricted to a small number of parishes, usually located at some distance from each other. It thus makes inter-parochial comparison almost impossible.[7]

Given that comparison between parishes of varying natures located within short distances of each other is essential if the open/close parish distinction is to be fruitfully employed, close attention should be paid to the spatial distribution of parishes of different types. Such efforts were already made by mid-nineteenth-century commentators of the open and close parishes, the first generation to discuss the distinctions between parishes. They were eager to count the numbers of open and close parishes in different regions in order to establish regional patterns.[8]

[3] W. Apfel, and P. Dunkley, 'English rural society and the new poor law: Bedfordshire, 1834–47', *Social History* 10 (1985), pp. 37–68; Anne Digby, *Pauper palaces* (1978); B. K. Song, 'Landed interest, local government, and the labour market in England, 1750–1850', *EcHR* 51 (1998), pp. 465–88.

[4] For example, J. V. Beckett, *The aristocracy in England, 1660–1914* (1986), p. 370; Alan Armstrong, *Farmworkers: a social and economic history, 1770–1980* (1988), pp. 61–87; G. E. Mingay (ed.), *The agrarian history of England and Wales*, VI, *1750–1850* (1989), pp. 769, 823; Ian D. Whyte, *Migration and society in Britain, 1550–1830* (2000), pp. 38–39. For the reservations, Banks, 'Nineteenth-century scandal'; James S. Taylor, *Poverty, migration, and settlement in the Industrial Revolution: sojourners' narratives* (1989), p. 175; Roger Wells, 'Social conflict and protest in the English countryside in the early nineteenth century: a rejoinder', in Reed and Wells (eds), *Class, conflict and protest*, pp. 65–81.

[5] For example, D. H. Morgan, *Harvesters and harvesting, 1840–1900: a study of rural proletariat* (1982).

[6] A good example is the work on an Oxfordshire parish. Raphael Samuel, '"Quarry roughs": life and labour in Headington Quarry, 1860–1920', in Samuel (ed.), *Village life and labour* (1975), pp. 99, 139–264; E. Mason, "Headington Quarry *c.* 1820–1860: a study of a nineteenth-century open village', *Oxoniensia* 54 (1989), pp. 363–78.

[7] David Spencer's recent article emphasizes that for the proper understanding of the formation of parish distinction the focus should be shifted from structure (e.g. landownership) to power and interests. Spencer, 'Reformulating the "closed" parish thesis: associations, interests, and interaction', *J. Hist. Geography* 26 (2000), pp. 83–98. Although theoretically valuable, his approach is, in practice, applicable only to those parishes with particularly rich data.

[8] BPP, 1850, XXVII, *Reports on settlement and removal of the poor.* For a similar effort by later historians, Holderness, '"Open" and "close" parishes'.

This approach is however not without a weakness. Some historians have stressed that the parish distinction should be viewed not in terms of a clear-cut dichotomy but in terms of a continuum on which parishes with different degrees of openness/closeness are located side by side.[9] This implies that the emphasis should be on the *relative* differentials between parishes. For example, if an extremely close parish (a parish with a large labour deficit) is surrounded by parishes of various kinds, the former may well attract workforce not only from extremely open parishes (with a large labour surplus) but also from parishes of an intermediate nature (with only a limited or temporary labour surplus). From this viewpoint, counting the numbers of what contemporaries regarded as open and close parishes, which were likely to be parishes showing extreme degrees of openness and closeness, does not seem to be a productive approach. However, it is also true that the present lack of research based on the comparative approach calls for a fresh investigation in this area.

This article is an attempt to illustrate the merits of what the contemporary commentators tried to achieve. In other words, it will take a comparative approach to the composition of parishes in English rural areas for the purpose of establishing whether or not there were systematic differences in the administration of the poor laws and the laws of settlement. Using the quantitative data for the early 1830s, this article will employ the statistical technique of cluster analysis to measure the relative openness/closeness of the great majority of the parishes within a sizeable geographical boundary. The region under discussion is Oxfordshire, one of the counties for which there are abundant data, both in terms of contemporary comments about open and close parishes and in terms of relevant statistics on population, landownership, and poor relief. This article will demonstrate the validity of these measurements by comparing the results of the cluster analysis with contemporary observations on the open/close parish distinction. It will then use the results to provide answers to three issues raised by earlier debates about the poor laws. First, using the parish-level data derived from two early nineteenth-century parliamentary reports, this article will explore the ways in which parishes with different resources reacted to the economic and social conditions they faced. How much relief was given to how large a proportion of the population across parishes with different economic and demographic circumstances is undoubtedly an important but insufficiently explored question. An investigation of these under-explored sources will clarify the role that the inter-relationship between parishes of different characteristics played in determining the patterns of local labour migration (or commutation) and scales of poor relief expenditure. Secondly, this article will examine the representativeness or otherwise of one of the sources most widely utilized by poor law historians, the *Rural Queries* of 1832. Two possible causes of bias will be discussed. Thirdly, it will investigate the question of whether or not the mid-nineteenth-century parliamentary returns were tainted by political motives, as has often been argued.[10] Focusing on the Parliamentary Reports of 1847 and 1850, it will examine the degree to which these reflect the real situation.

This article examines the three kinds of historical documents in a chronological order. It will show that a common link between the three seemingly unrelated issues raised by the debates about the poor laws can be found in the open/close parish distinction.

[9] Song, 'Landed interest'.

[10] Banks, 'Nineteenth-century scandal'; cf., M. Caplan, 'The new poor law and the struggle for union chargeability', *International Rev. of Social History* 23 (1978).

I

The terminology of the open and close parishes began to be widely adopted in the 1840s. A good example can be found in the 1843 Parliamentary Report, one of the earliest to use the terminology. According to the Report:

> [an open parish is one which is] in the hands of a considerable number of proprietors, while the neighbouring parishes are each owned by one or two (or very few) proprietors. These last, partly in order to prevent an increase of ... settlement, and to keep down the rates ... while in the adjoining parishes there are not hands enough left to cultivate the soil, ... [an open parish] is overstocked with inhabitants that do not properly belong to it, and who are, generally speaking, the worst characters in the parishes from whence they come. The competition caused by these new comers raises the house-rent throughout the parish; and as they are at the mercy of those who have land ..., they are forced to pay exorbitant rents for very wretched dwellings.[11]

This extract depicts several aspects of the situation: a stark contrast in the landholding pattern in the two different types of parish; separation of the place of work from that of residence; dismal living conditions and undeservedly high rents in open parishes; and the prevention of settlement in close parishes to keep down expenditure on poor relief. The terminology gained currency in the following decades as reform of the laws of settlement emerged as a key political issue. The aim of the reforming bills was twofold. One was to make irremovable those who had resided for more than a certain period in a parish where they had no settlement, and eventually to extend the unit of settlement from the parish to the poor law union. The other was to replace the parish with the poor law union for the purpose of raising money for poor relief. These aims were gradually accomplished by a series of acts from 1845 onwards and eventually completed by the Union Chargeability Act of 1865.[12] The main opposition to the reform bills came from the landed classes. One of the most prominent figures in the opposition camp was J. W. Henley, Member of Parliament for Oxfordshire. At every stage of the parliamentary debate, this 'very model of a country gentleman' indefatigably advocated the parochial rating and relieving system and warned that if the parliamentary bill currently under consideration were passed it would inevitably lead to the total destruction of the parochial system and thereby to the prevalence of carelessness and extravagance.[13]

Even before the 1840s, however, when the terms of open and close parishes first gained currency, a body of literature was already in existence which referred to the same phenomenon for earlier periods.[14] A good example of this literature is *Rural Queries*, an extensive survey prepared for

[11] BPP, 1843, XII, *Reports on employment of women and children in agriculture*, p. 237.

[12] 28 & 29 Vict., c. 79. For the legislative history, M. E. Rose, 'Settlement, removal and the new poor law', in Derek Fraser (ed.), *The new poor law in the nineteenth century* (1976), pp. 25–44.

[13] Caplan, 'Union chargeability', pp. 269, 278–79, 293. For his activities during the formation of the poor law unions in Oxfordshire, Song, 'Continuity and change in English rural society: the formation of poor law unions in Oxfordshire', *English Historical Rev.* 114 (1999), pp. 333–34.

[14] The legislation of the new poor law was unlikely to bring any notable change to the open/close parish structure, as the parish, not the union, remained a basic unit for rating and relieving until 1865. The lack of effective remedies even after 1865 allowed parish distinctions to continue virtually unchanged. BPP, 1868–9, XIII, *Second report on the employment of children, young persons and women in agriculture*, pp. 170–71.

the famous *Poor Law Report* of 1834. Question 16 of the *Queries* asked, 'What class of Persons are generally the Owners of Cottages?'.[15] Responses from Oxfordshire are suggestive enough for this matter. From Duns Tew, W. Gorden, vicar and Justice of the Peace, responded: 'In places where property is more divided tradesmen often erect cottages, but they are generally let at a higher rate'. The response from Ipsden was that the owners of lands were 'Gentlemen, who let them at low rents, and petty Tradesmen, who exact high rents'. In Oddington cottages were reported to be owned by the 'principal landed proprietor', whereas 'In the adjoining parishes they are usually farmers and small tradesmen'. According to W. H. Ashhurst, chairman of Oxfordshire Quarter Sessions, owners were principally 'retired tradesmen and small builders in towns and large villages; in smaller villages, the owners of land'.[16] Question 51 sought suggestions for an amendment of the laws of settlement. J. Jordan, curate of Handborough, expressed the opinion that 'Labour, not residence, should confer settlement, otherwise a man might reside upon but not benefit the soil which is afterwards to support him'. The vicar of Duns Tew said more explicitly that 'The bringing an aged and sickly person to his parish, whose youth and strength have been spent elsewhere' was one of the main 'evils' resulting from the laws of settlement.[17] These statements testify that the respondents of the *Rural Queries* were well aware of the contrasting parish types. These, along with other works referring to similar parish differentials, suggest that the open/close parish approach can be applied to the pre-1840s period.[18]

II

Unlike most research on the open/close parish distinction, which focuses largely on the mid- and late-nineteenth century, the present discussion concentrates on the early 1830s. Employing the statistical method of cluster analysis, 262 parishes with relevant data out of a total of 272 Oxfordshire parishes were categorized in terms of their openness or closeness on the basis of four characteristic aspects: landownership structure, measured in terms of the percentage of land tax paid by the largest proprietor in each parish in 1831; average poor relief expenditure for 1830 and 1831, measured per pound of annual property value of each parish; parish differentials in economic activities, measured in terms of the percentage of families engaged in agriculture in 1831; and population pressure on the parish economy, measured in terms of population density.[19] The results can be seen in Table 1. Based on the average figures for the

[15] Some of the respondents understood the question as not being confined to their own parishes and thus offered a general observation based upon relatively large areas.

[16] BPP, 1834, XXX, *Report from His Majesty's Commissioners for inquiring into the administration and practical operation of the Poor Laws*, Appendix (B)1, *Answers to Rural Queries* (hereafter *Rural Queries*), pp. 371b, 376b, 378b, 381b.

[17] Ibid., pp. 371e, 374e.

[18] For the earlier works, many of which come from the eighteenth century, BPP, 1850, XXVII, *Reports on settlement and removal*, pp. 408–09.

[19] Land Tax Assessments, Oxfordshire RO, QSR Series (for landownership); BPP, 1835, XLVII, *Reports on the poor*, pp. 337–41 (for poor relief expenditure); BPP, 1833, XXXVI, *Abstract returns of population*, pp. 490–501 (for proportion of agricultural families and population); BPP, 1883, LXXIX, *Abstract returns of population*, pp. 130–39 (for parish acreage). There are similarities between the variables that Banks selected for her cluster analysis of Norfolk parishes and my variables presented here. However, she reached a significantly different conclusion by denying that parish typology was intentionally constructed and maintained, although she admitted the co-existence of different types of parishes within short distances. Song, 'Landed interest', pp. 476–77, 485–86.

TABLE 1. Cluster analysis of Oxfordshire parishes, c. 1831

(1) *Cluster*	(2) *No. of cases*	(3) *Poor relief expenditure in £* (£)	(4) *Largest landownership* (%)	(5) *Population density*	(6) *Agricultural family* (%)	(7) *Classification*
1	1	0.69	3	1661.5	4.0	strong open
2	1	0.53	6	4613.6	3.8	strong open
3	1	0.42	29	316.6	2.0	strong open
4	2	0.42	5	210.9	13.3	strong open
5	1	0.37	18	225.8	3.7	strong open
6	30	0.28	26	56.0	39.1	weak open
7	98	0.18	25	22.9	71.9	intermediate
8	63	0.15	54	22.5	69.9	weak close
9	65	0.11	88	14.0	85.4	strong close
Oxon.	262	0.18	47	59.1	69.5	

Source: Song, 'Landed interest', pp. 477–79.

four variables (columns (3) to (6)), the degree of openness/closeness for each parish is evaluated and classified into five categories (column (7)). The spatial distribution of parishes of different types is shown in Figure 1. Throughout Oxfordshire parishes in different clusters were rather evenly scattered, with strong open parishes functioning as local foci for parishes with closed characteristics.[20]

The validity of the parish classification derived from the cluster analysis can be tested by setting the result against some contemporary observations. Censuses are undoubtedly the most important data source for population change. One advantage of the census records is that it can be assumed that they were reasonably independent of the political atmosphere of the time. The censuses from 1831 to 1851 occasionally included notes on unexpected changes in the population of parishes. The 1831 census noted that the decrease of population in Stoke Talmage was 'occasioned by the non-residence of pauper parishioners'. Middleton Stoney saw a population decrease caused by 'the want of cottages, which has compelled many families to resort to adjoining parishes'.[21] The census delineated the situation of South Leigh at length:

> The return of South Leigh states that 11 Families, consisting of 60 persons, belonging to and supported by that parish, are, for the want of houses, residing in adjoining parishes; on which it may be remarked, that in the year 1811, the houses being 48 in this parish, the population

[20] The relatively small numbers of strong open and weak open parishes may raise the question as to why contemporary commentators were so anxious about the 'evil' effect of open parishes. Though small in absolute numbers, open parishes had significantly greater population than close parishes. Their respective populations were: strong open parishes 15,381 (12%); weak open parishes 32,454 (25%); intermediate parishes 45,168 (35%); weak close parishes 21,880 (17%); and strong close parishes 13,663 (11%). It should also be noted that the present analysis does not include parishes of City of Oxford, which were generally of open characteristic.

[21] BPP, 1833, XXXVI, *Abstract returns of population*, pp. 498–99.

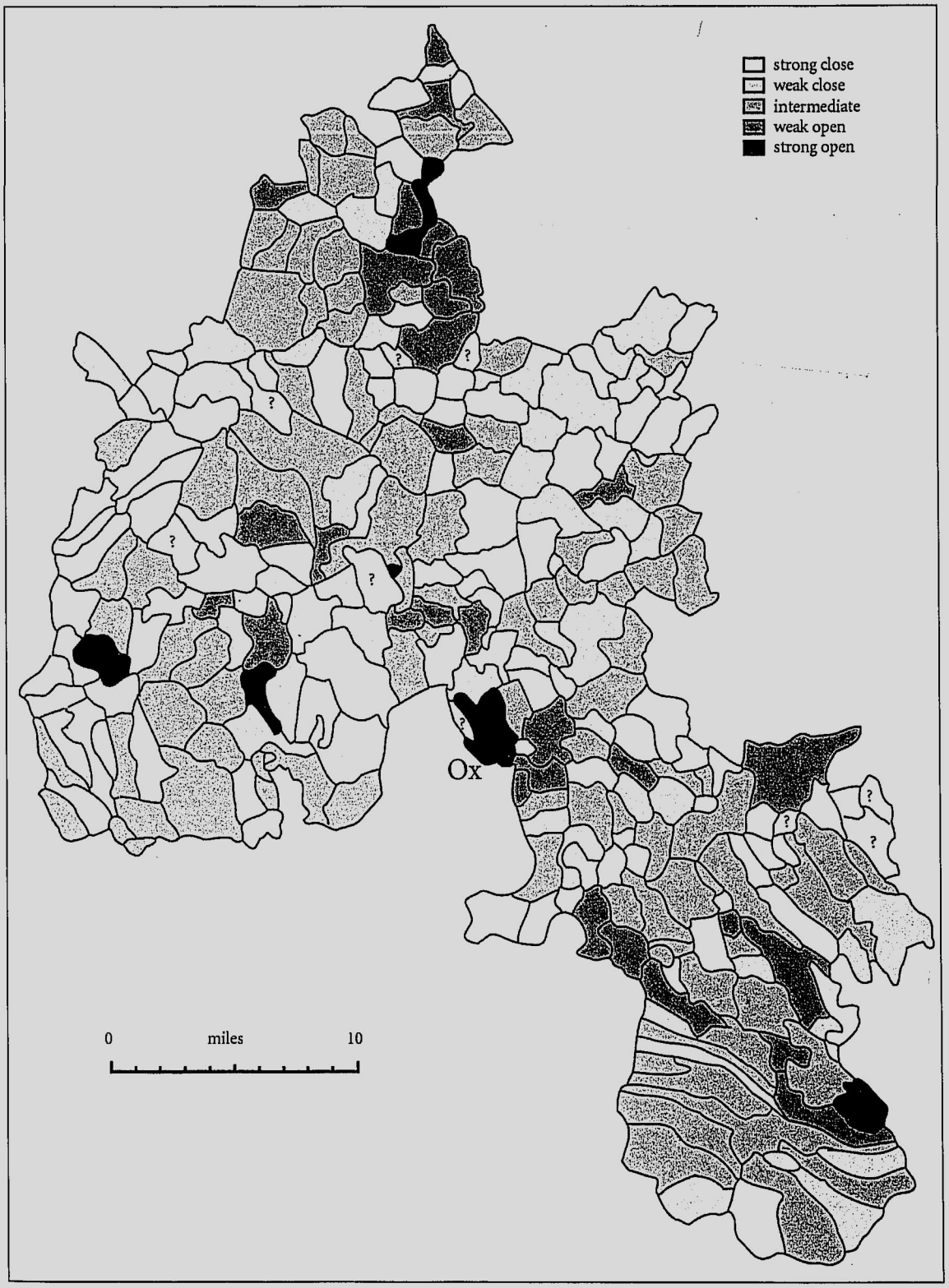


FIGURE 1. Geographical distribution of open and close parishes in Oxfordshire, *c.* 1831

> was 248, or 5 persons to a house; in 1821, 6 persons to a house; and in 1831, nearly 7 persons to a house or cottage, while the entire Hundred of Wootton (subtracting South Leigh) still affords a cottage to 5 persons; among whom are the 60 persons thrust out of South Leigh, to the eventual detriment of adjoining parishes; *an irregularity attributed to the operation of the Poor Laws.*[22]

Other comments noticed population growth. The return for Watlington in 1831, for example, stated: 'The increased population is attributed to the number of paupers in the parish'. In the town of Thame for 1821 and 1831, it was recorded that 'the increase of population consists chiefly of paupers'. The return for St. Clements attributed the population increase in 1831 to the building of 250 houses.[23]

Interpreted in terms of open and close parishes, these census notes are summarized in Table 2. They turn out to correspond closely to the result of the cluster analysis. All three parishes for which the censuses noted features typical of close parishes are categorized as either strong close or weak close parishes in the cluster analysis. Similarly, all the parishes noted as showing the characteristics of open parishes fall into the strong open and weak open parishes. This correspondence confirms the validity of the cluster analysis results.

III

We can now use the result of the cluster analysis to analyze three sources: first, the Parliamentary Returns of 1803–4 and 1818 on the poor relief of most parishes (Section IV); second, *Rural Queries* of 1834, which refer to selected parishes but do not focus primarily on their openness or closeness (Section V); and third, the Parliamentary Returns of 1847 and 1850, which were produced in connection with settlement reform, and which by their very nature focused selectively on the extreme cases (Section VI). Given that the three documents were produced, respectively, in the early nineteenth century, on the eve of the new poor law, and in the mid-nineteenth century, and given that the cluster analysis is based on data from around 1831, all the documents are reasonably valid for the purpose of the current study.

It is noteworthy that, in spite of the existence of some exceptional parishes, the overall geographical structure of open/close parishes did not undergo significant changes during the first half of the nineteenth century. The distinctions between parishes were primarily formed in the eighteenth century (and possibly earlier): the nineteenth century only saw the consolidation of the system.[24] To illustrate this point, it is useful to look at the history of enclosure, which was arguably the single most important vehicle for the changes in rural economy and society. The spatial and temporal patterns of enclosure were closely related to the four variables that were used in the present study.

The first variable used in defining open and close parishes was the proportion of agricultural population. Other things being equal, solely agricultural parishes were more likely to be subjected to early and unopposed enclosure. Landowners' expectation of rent increases and,

[22] Ibid., p. 501, my emphasis.

[23] BPP, 1852–3, LXXXV, *Abstract returns of population*, pp. 28–39.

[24] For a long-term development of the parish distinction, B. Short, 'The evolution of contrasting communities within rural England', in Short (ed.), *The English rural community: image and analysis* (1992), pp. 21–28.

TABLE 2. Open and close parishes in Oxfordshire as documented in censuses, 1831–51

(1) *Parish*	(2) *Contemporary observation*	(3) *Classification*
Stoke Talmage	close	strong close
Middleton Stoney	close	weak close
South Leigh	close	strong close
Watlington	open	weak open
Thame	open	weak open
St. Clements	open	strong open

Sources: BPP, 1833, XXXVI, *Abstract returns of population*, pp. 498–99; BPP, 1852–3, LXXXV, *Abstract returns of population*, pp. 28–39.

perhaps to a lesser extent, productivity growth could have been a strong incentive for early enclosures. As J. M. Neeson found for Northamptonshire, parishes resisting enclosure were disproportionately of mixed agricultural and manufacturing character.[25] Enclosure, in turn, could affect the percentage of families engaged in agriculture. In Warwickshire, for example, enclosure is reported to have turned many small tradesmen and craftsmen into labourers by reducing their holdings and impoverishing their customers.[26] Secondly, consolidated landownership may well have facilitated early enclosure, whereas in parishes where landownership was more diffuse small owners and tradesmen could resist enclosure. This correlation, which is also reflected in the fact that large farms tended to be enclosed comparatively earlier, has been observed in many places.[27] In densely populated parishes, commoners were likely to be in a better position to resist attempts at enclosure which was regarded as reducing their common rights. In contrast, low population density could be associated with early and unopposed parliamentary enclosure.[28] Once enclosure was carried out, diminished mid- and long-term employment opportunities often led to out-migration of the labouring poor, and hence further reduced population density.[29] Finally, many economic historians have agreed that enclosure tended to increase poor relief expenditure.[30] The diminution of common rights and the reduction in women's employment may have rendered more people dependent on the parish fund. Further, the consolidation of farms at enclosure may have increased the potential for cost transfer from labour-hiring farmers to other ratepayers who employed fewer labourers and,

[25] J. M. Neeson, *Commoners: common right, enclosure and social change in England, 1700–1820* (1993), pp. 281–82.

[26] J. M. Martin, 'Village traders and the emergence of a proletariat in south Warwickshire', *AgHR* 32 (1984), pp. 179–88.

[27] M. E. Turner, 'Enclosures in Britain, 1750–1830' in L. A. Clarkson (ed.), *The industrial revolution: a compendium*; J. M. Martin, 'Parliamentary enclosure movement and rural society in Warwickshire', *AgHR* 15 (1967). For Oxfordshire, Walton, 'Aspects', p. 64; D. Eastwood, 'Communities, protest and police in early nineteenth-century Oxfordshire', *AgHR* 44 (1996).

[28] Neeson, *Commoners*, pp. 221–58.

[29] J. D. Chambers' revisionist view that enclosure increased employment opportunity may be valid to some extent in the immediate aftermath of enclosure. A longer-term view indicates the contrary. Chambers, 'Enclosure and labour supply in the Industrial Revolution', *EcHR* 5 (1935). Cf. N. F. R. Crafts, 'Enclosure and labour supply revisited', *Explorations in Economic History* 15 (1978); K. D. M. Snell, *Annals of the labouring poor* (1985), pp. 138–227.

[30] As a logical consequence, Chambers' conclusion suggests the opposite tendency.

therefore, may have resulted in heavy dependence on poor relief.[31] The discussion so far thus suggests that, in spite of possible individual exceptions, there may have been a close relationship between parliamentary enclosure and the open and close parish system. Close parishes, with a high proportion of agricultural population, consolidated landownership, low population density, and a low poor relief burden, could achieve early and uninterrupted enclosure. Enclosure, in turn, could accentuate the features of close parishes. In contrast, enclosure was more prone to be delayed or even completely thwarted in open parishes. It is very likely that the basic geographical composition of parishes of different nature was already in existence at least in the late eighteenth century and the parish distinction became more acute during the first half of the nineteenth century as the progress of enclosure tended to accelerate the trend.

IV

The first sources to be discussed in the light of parish typology are the Parliamentary Returns of 1803–4 and 1818.[32] These returns provide comprehensive data on poor relief expenditure and the composition of relief recipients at parish level and thus offer a unique opportunity to look closely at the ways in which the old poor law was implemented. There have been some studies utilizing the returns, but none have approached the data to ask questions of open and close parishes.[33]

The returns of 1803–4 contain not only the financial data concerning poor relief but also the number of recipients under various headings. Table 3 gives the amount of money rated for and spent on poor relief as measured per pound of parochial property values. As the model of open and close parishes has predicted, open parishes, particularly strong open parishes, appear to have shouldered notably heavier poor rates than close parishes. Outdoor relief was by far the most popular way of relieving the poor and the level of outdoor relief expenditure appears to have increased with the openness of parishes. Strong open parishes were also more likely to give indoor relief, and to incur higher legal expenses. Total relief expenditure therefore tends to run parallel to poor rates. Some parishes had a policy of providing work for both indoor and outdoor relief recipients. Taking into account the expense of purchasing the raw materials and paying for the finished product, amended figures for total expenditure are given in the last column. It appears that strong open parishes, which tended to spend more on poor relief, and therefore had the greater need to economize, made the greatest use of the practice, although the amount of money they saved was not substantial.

Table 4 gives the composition of those relieved under various headings. It shows that the number of those permanently receiving outdoor relief as measured per 1,000 population was relatively higher in close and intermediate parishes. On the other hand, permanent recipients of indoor relief made up the greater proportion in open parishes. In total, the proportion of

[31] J. Humphries, 'Enclosure, common rights, and women: the proletarianization of families in the late eighteenth and early nineteenth centuries', *JEcH* 50 (1990); G. R. Boyer, *An economic history of the English poor law, 1750–1850* (1990), pp. 85–149.

[32] BPP, 1803–4, XIII, *Abstract of the poor*; BPP, 1818, XIX, *Abstract of the poor.*

[33] J. D. Marshall, *The old poor law, 1795–1834* (1968), pp. 30–37; Karel Williams, *From pauperism to poverty* (1981), pp. 35–43, 147–55; David Eastwood, *Governing rural England* (1994), pp. 142–46.

TABLE 3. Average poor relief expenditure in Oxfordshire parishes, 1803

(1) *Classification*	(2) *Poor rate*	(3) *Outdoor relief*	(4) *Indoor relief*	(5) *Legal expense*	(6) *Total expense*	(7) *Amended total expense*
strong open	7*s.* 11*d.*	4*s.* 4*d.*	2*s.* 8*d.*	0*s.* 3*d.*	7*s.* 1*d.*	6*s.* 9*d.*
weak open	3*s.* 8*d.*	2*s.* 10*d.*	0*s.* 3*d.*	0*s.* 2*d.*	3*s.* 3*d.*	3*s.* 2*d.*
intermediate	2*s.* 10*d.*	2*s.* 3*d.*	0*s.* 1*d.*	0*s.* 1*d.*	2*s.* 5*d.*	2*s.* 5*d.*
weak close	2*s.* 6*d.*	2*s.* 0*d.*	0*s.* 1*d.*	0*s.* 1*d.*	2*s.* 2*d.*	2*s.* 1*d.*
strong close	1*s.* 10*d.*	1*s.* 4*d.*	0*s.* 1*d.*	0*s.* 0*d.*	1*s.* 6*d.*	1*s.* 5*d.*
Avg.	2*s.* 9*d.*	2*s.* 2*d.*	0*s.* 2*d.*	0*s.* 1*d.*	2*s.* 4*d.*	2*s.* 4*d.*

Note: (6)=(3)+(4)+(5); (7)=(6) + (expense of purchasing goods for the poor's work) – (earning out of the poor's work).
Source: BPP, 1803–4, XIII, *Abstract of the Poor*, pp. 397–408.

TABLE 4. Number of recipients of poor relief expenditure per 1,000 population in Oxfordshire parishes, 1803

(1) *Classification*	(2) *Permanent outdoor*	(3) *Permanent indoor*	(4) *Sum*	(5) *Children*	(6) *Occasional*	(7) *Aged and ill*
Strong open	44.6	21.4	66.0	38.8	71.4	25.9
Weak open	53.3	7.5	60.8	71.9	53.2	23.1
Intermediate	73.5	3.4	76.8	97.9	71.2	31.0
Weak close	84.0	3.7	87.7	100.2	43.4	28.5
Strong close	75.7	1.0	76.7	80.3	78.5	42.1
Avg.	73.6	3.8	77.4	89.5	64.5	32.2

Note: (4)=(2)+(3).
Source: BPP, 1803–4, XIII, *Abstract of the Poor*, pp. 397–408.

permanent recipients were greater in close parishes than in open ones. The proportions of relieved children, aged fourteen and under, were also relatively higher in close parishes. The numbers of those occasionally relieved should be treated with care, because parishes may have returned either an average or a total of those so relieved. In the latter case, parishes may or may not have multiple-counted those relieved more than once in the year. The proportion of those relieved for reasons of old age or infirmity was also higher to some extent in close parishes.

The overall high percentage of recipients in close parishes sheds light on one of the controversies regarding the poor law system. The 1834 Royal Commissioners claimed that lax administration of poor laws took away labourers' incentive to work.[34] Against this claim, some historians have argued that small size of parishes allowed parish administrators to keep a close eye on individual parishioners, thus giving the poor only a slim chance of obtaining an

[34] BPP, 1834, XXVII, *Reports of the Royal Commissioners on the administration ... of the poor laws*, pp. 44–55.

undeservingly large amount of relief.[35] Following this line of argument, one would expect a higher level of poor relief expenditure per recipient in larger parishes. However, the model of open and close parishes presents a different, more complicated picture. On the one hand, the burden of poor relief was felt most heavily in open parishes hit by heavy economic pressure. Given the overpopulation and the shortage of employment opportunities in these parishes, one could expect greater poor relief expenditure per recipient. On the other hand, it was open parishes which commonly established select vestries in the last fifteen years of the old poor law administration. This suggests that these parishes felt more keenly the demand for economy, so it can be expected that parish officers in open parishes were parsimonious in poor relief. The actual level of poor relief spending in open parishes was determined where the two countervailing tendencies struck a balance. It is in this context that Mills and Short point out that 'it is likely that the few labourers who were in need of poor relief [in close villages] got more generous individual treatment than those in hard-pressed open villages'.[36]

However, the present result that close parishes had more recipients than open parishes runs counter to the argument of Mills and Short. A clue for this puzzling outcome can be found in column (7). Other things being equal, the proportion of non-able-bodied can be assumed to have been constant across parishes. Among the potential factors which may upset this assumption, age structure is probably the most important. Parishes in different groups may have had marked differences in nuptiality, fertility and other determinants of natural population growth.[37] Perhaps more importantly, population mobility between parishes may have caused differences in age structure. What merits special attention is return migration by those who, after spending many years in parishes where work was available, were forced to move to their parishes of settlement when too old or infirm to work any more. It is therefore likely that the proportion of the non-able-bodied was higher in open parishes than in close ones. Column (7), however, shows the contrary: open parishes have a smaller proportion of the non-able-bodied. This suggests that the threshold of eligibility for relief was higher in open parishes than in their close counterparts. Hardship deemed deep enough to qualify for relief in close parishes may not have qualified for relief in open parishes. The proportion of relieved children corroborates the threshold differentials (column (5)). Although Mills and Short are right in emphasizing the differences in levels of generosity, they should perhaps not assume that such generosity was reflected only in the amount of poor relief. The chances are that close parishes provided relief to as large a proportion of their parishioners as open parishes did. Close parishes may even have had a greater proportion of parishioners subject to poor relief. An equal level of poor relief expenditure per head of parish population, an equal

[35] For example, J. S. Taylor, 'The mythology of the old poor law', *JEcH* 24 (1969), pp. 292–97; D. A. Baugh, 'The cost of poor relief in south-east England, 1790–1834', *EcHR* 28 (1975), pp. 50–68. Blaug estimated the mean population of parishes in England and Wales at 898 and median at 368. Figures only for countryside, excluding metropolitan parishes, were considerably smaller. M. Blaug, 'The poor law report re-examined', *JEcH* 24 (1964), pp. 243–45.

[36] D. R. Mills and B. M. Short, 'Social change and social conflict in nineteenth-century England: the use of the open-close village model', in Reed and Wells (eds), *Class, conflict and protest*, p. 92.

[37] E. A. Wrigley and R. S. Schofield, *The population history of England, 1541–1871* (1989), p. 38; Broad, 'Parish economies of welfare'; cf. B. J. Taylor, 'The economic and demographic context of enclosure: a case study from Oxfordshire, *c.* 1550 to 1850 (unpublished D.Phil thesis, University of Oxford, 1988).

Table 5. Average poor relief expenditure in Oxfordshire parishes, 1813–5

(1) *Classification*	(2) *Poor rate*	(3) *Relief expenditure*	(4) *Legal expense*	(5) *Total expense*
strong open	10*s.* 10*d.*	9*s.* 1*d.*	0*s.* 5*d.*	9*s.* 6*d.*
weak open	5*s.* 9*d.*	4*s.* 8*d.*	0*s.* 2*d.*	4*s.* 10*d.*
intermediate	4*s.* 3*d.*	3*s.* 4*d.*	0*s.* 1*d.*	3*s.* 5*d.*
weak close	4*s.* 1*d.*	3*s.* 4*d.*	0*s.* 1*d.*	3*s.* 5*d.*
strong close	2*s.* 10*d.*	2*s.* 1*d.*	0*s.* 1*d.*	2*s.* 2*d.*
Avg.	4*s.* 2*d.*	3*s.* 4*d.*	0*s.* 1*d.*	3*s.* 5*d.*

Note: (5)=(3)+(4).
Source: BPP, 1818, XI, *Abstract of the Poor*, pp. 352–62.

proportion of recipients to parish population and, thus, an equal level of poor relief expenditure per recipient does not imply that parishes of various types had similar poor relief policies.

This point can be pursued further by looking at the expenditure on indoor and outdoor relief. The Parliamentary Returns reported that indoor relief for the total of 1,131 inmates cost £11,124, equivalent to £10 14*s.* 4¾*d.* per recipient, while outdoor relief for 20,394 persons cost £76,565, or £3 14*s.* 9¾*d.* per recipient, about three times less per recipient than indoor relief. This discrepancy may be attributed partly to the overhead costs of running workhouses. But the overhead costs were unlikely to be high, because otherwise the parishes would have abandoned indoor relief. In addition, there also may have been compensating factors resulting from the economies of scale in managing indoor relief.[38] These effects may have more or less offset each other. Much of the discrepancy can be explained by the fact that workhouse inmates were on average in need of greater relief than outdoor recipients. It follows that the large proportion of indoor recipients in open parishes indicates that the costly recipients were more numerous in open parishes than in close ones. What Table 4 suggests is not that close parishes assumed as heavy a poor relief burden as open parishes did, but that as we suggested earlier, open parishes tended to operate tougher guidelines for relief eligibility.

The 1818 Parliamentary Returns show that there had been a noticeable increase in the overall amount of relief expenditure during the preceding decade. However, the distribution of the amount across different groups had hardly changed. All the figures – poor rates, poor relief expenditure and legal expenses – correspond closely to the openness of the parishes (Table 5). The returns also show that the proportion of those receiving indoor relief on a permanent basis fell between 1803 and 1813–5. Again, the composition of paupers, shown in Table 6, also confirms that permanent outdoor and indoor relief continued to be predominant in close and open parishes respectively. The overall number of permanent recipients turns out to have been greater in close parishes, and so does the number of the occasionally relieved poor. Provided that the

[38] G. W. Oxley, *Poor relief in England and Wales 1601–1834* (1974), p. 90, points to the economy of using inmates for nursing the sick in the workhouse rather than in their own homes, of saving the cost of providing alternative housing for the solitaries and small families, and of having the inmates make a work contribution. Attempts were made in Oxfordshire to make the workhouse a self-supporting unit by teaching the inmates crafts and trades. VCH *Oxfordshire*, II, p. 204.

TABLE 6. Number of recipients of poor relief expenditure per 1,000 population in Oxfordshire parishes, 1813–5

(1) *Classification*	(2) *Permanent outdoor*	(3) *Permanent indoor*	(4) *Permanent total*	(5) *Occasional*
strong open	31.0	14.1	45.1	43.7
weak open	68.3	5.8	74.1	48.4
intermediate	66.0	1.5	67.5	72.8
weak close	70.8	0.7	71.5	53.5
strong close	93.1	1.2	94.3	88.2
Avg.	73.1	2.0	75.0	68.0

Notes: (4)=(2)+(3).
Source: BPP, 1818, XI, *Abstract of the Poor*, pp. 352–62.

higher proportion of indoor recipients indicates the higher number of those for whom a large amount of relief was required, the figures lead to the same conclusion: that close parishes implemented a significantly more generous poor relief policy.

V

The next document under discussion is *Rural Queries*.[39] As the most extensive survey ever undertaken of the old poor laws and related issues, *Rural Queries* has provided many historians with a huge amount of data to explore. Not all historians are agreed on the representativeness of the parishes responding to the questionnaire.[40] On the whole, insufficient attention has been paid to the possibility that the material is biased.[41] Two works utilizing *Rural Queries* are particularly worth noting because their arguments bear very closely on the issue of open and close parishes. James Taylor assumes that the parishes are representative and advances the view that the high percentage of parish officers amongst the respondents may say something about the limited role of magistrates in the administration of poor relief. By contrast, Peter Dunkley finds that a large percentage of the responses reported magisterial control over poor relief administration and regards this as a significant indication of the subordination of parish officers to magistrates.[42] This raises the question as to how these two works, which are based on the same data, can offer such opposed conclusions.

In order to find an answer to this question, it is necessary to consider two possible sources of bias in *Rural Queries*. The first possible source of bias involves the social and economic status

[39] BPP, 1834, XXXI, *Rural Queries*.

[40] Blaug, 'The poor law report re-examined', pp. 229, 231, 235; Williams, *From pauperism to poverty*, pp. 45–51; Marshall, *The old poor law*, p. 20; Boyer, *Economic history*, pp. 128–29, 143–44.

[41] Snell rightly points out that '[o]ne needs to know whether replying parishes had higher than average per caput relief, how they were ranged in open/close terms, how their relief expenditure and demographic growth compared with other parishes, whether they had been involved in recent disorder'. K. D. M. Snell, review of Boyer, *Economic History*, in *EcHR* 45 (1992) p. 192. His notion of open/close parishes here seems to focus on landholding patterns.

[42] J. S. Taylor, 'The unreformed workhouse, 1776–1834', in E. W. Martin (ed.), *Comparative development in social welfare* (1972), pp. 66–67; P. Dunkley, *The crisis of the old poor law in England, 1795–1834: an interpretative essay* (1982).

of the respondents. In some parishes the respondents were parish officers, and in other parishes they were magistrates. It was not uncommon for parish officers and magistrates to have different interests in relation to poor law administration. Indeed, the power relation between the two classes before and after the 1834 poor law reform has been at the centre of the fierce debate among poor law historians.[43] It is reasonable to surmise that the two groups had good reasons to respond to the *Queries* in different ways. The second possible source of bias is that the attitudes of parishes towards poor law reform might vary according to their social and economic conditions. The open/close parish distinction can shed useful light on this possibility.

In Table 7, the responses to the *Queries* from 26 Oxfordshire parishes are analyzed according to a number of criteria. As many as 9 parishes out of the total of 26, or 35 per cent, appear to have had select vestries. Given that the main reason for establishing select vestries in southern England was to introduce economy and efficiency into poor law administration, it is reasonable to assume that parishes under heavy economic and demographic pressure were more likely to have been enthusiastic about adopting the measure. The total number of select vestries in Oxfordshire was reported to be 42 in 1832.[44] As approximately ten per cent of the parishes in the county responded to the *Queries*, the over-representation of the parishes with select vestries is unmistakable. This over-representation suggests the presence of the second source of bias, relating to the socio-economic condition of the responding parishes. The likelihood of this bias can be further illustrated by the result of the cluster analysis (column (3)). As summarized in Table 8, the number of responding parishes in each classification is compared with that of the total number of Oxfordshire parishes. In spite of the relatively small size of sample, it is clear that strong open and weak open parishes are over-represented and the rest, particularly strong close parishes, are under-represented in *Rural Queries*.

By collating the columns (2) and (4) in Table 7, it is possible to demonstrate that the overwhelming majority of the responses from the parishes with select vestries were made by parish officers. Not a single parish with a select vestry appears to have had its return made by a magistrate. Column (3) suggests that two out of three responding magistrates were from close parishes, whereas parish officers responded not only from open parishes but also from other parish types. There appears, therefore, to be some degree of correspondence between the status of the respondents and the socio-economic condition of their parishes. This correspondence implies that, as open parishes were over-represented in *Rural Queries*, so were parish officers.

Given this over-representation of open parishes and parish officers, Taylor's argument that the large proportion of parish officers among the respondents to the *Queries* can be attributed to the limited influence of magistrates on poor law administration perhaps needs to be reconsidered. Had the responses come evenly from a wider range of parishes, the proportion of parish officers could have been substantially smaller. Equally, Dunkley's interpretation of the large percentage of responses referring to tight control by magistrates as an indication of a high degree of intervention may also need to be reconsidered, since the high proportion reporting control

[43] Dunkley, *Crisis*; Anthony Brundage, *The making of the new poor law* (1978); Anthony Brundage, David Eastwood and Peter Mandler, 'Debate: the making of the new poor law *redivivus*', *Past and Present* 127 (1990), pp. 83–201; Boyer, *Economic history*, pp. 51–84; Song, 'Continuity and change'.

[44] BPP, 1833, XXXII, *Abstract returns of relief*, pp. 350–51.

TABLE 7. Responses to *Rural Queries* and open and close parishes in Oxfordshire

	(1) *Parish*	(2) *Select vestry*	(3) *Classification*	(4) *Respondent*
1	Aston Steeple		weak open	Justice of the Peace
2	Baldwin Britwell		strong close	–
3	Banbury[a]	Yes	strong open	–
4	Chadlington	Yes	intermediate	Assistant overseer
5	Chinnor	Yes	–	Assistant overseer
6	Deddington		weak open	Solicitor & clerk to the magistrates
7	Ducklington		weak close	–
8	Duns Tew		weak close	Vicar & Justice of the Peace
9	Ensham	Yes	intermediate	Vicar
10	Enstone	Yes	intermediate	–
11	Epwell		intermediate	Churchwarden & overseer
12	Goring		intermediate	Churchwardens, overseer
13	Handborough		weak close	Curate
14	Harpsden		weak close	Principal rate-payer & minister
15	Headington	Yes	weak open	–
16	Holton		strong close	Churchwarden
17	Ipsden		intermediate	–
18	Kidlington		weak open	Curate
19	Great Milton	Yes	weak close	Vicar
20	Mollington		strong close	Occupier
21	Hook Norton		intermediate	–
22	Pyrton	Yes	intermediate	Overseer
23	Shutford West[b]		weak close	–
24	Waterstock		strong close	Justice of the Peace
25	Watlington	Yes	weak open	Schoolmaster & overseer
26	Wootton		intermediate	Rector

Notes: [a] For reasons of data availability, the hamlet of Neithrop, part of Banbury parish, is not included in the cluster analysis.
[b] Data of Shutford East are added to the data of Shutford West.
Source: BPP, 1834, XXXII, *Rural Queries*, QQ. 32–34, pp. 367c–82c.

by magistrates may well be the result of the high proportion of parish officer respondents. Complaints about magisterial control were likely to be particularly high in open parishes and in the parishes with select vestries, from which disproportionately large number of parish officers responded to the *Rural Queries*.

TABLE 8. Representation of Oxfordshire parishes in *Rural Queries*

(1) *Classification*	(2) *No. of Oxon parishes*	(3) *No. of parishes in* Rural Queries	(4) *Representation rate (%)*
strong open	6	1	16.7
weak open	30	5	16.7
intermediate	98	9	9.2
weak close	63	6	9.5
strong close	65	4	6.2
Total/avg.	262	25	9.5

Source: Table 7 above.

VI

Finally, we consider the Parliamentary Reports of 1847 and 1850, published when the issue of open and close parishes had begun to be highly contentious. The 1847 returns provided a body of information gathered from various parts of the country, of which the most detailed was a memorial from the ratepayers of Wheatley, Oxfordshire.[45] The ratepayers of this open parish stated that a fifth of the people residing in the parish were out-parishioners obliged to seek accommodation outside their parishes of settlement. The memorial included a list of these out-parishioners, amounting to 212 persons or 48 families. Table 9 gives the list of parishes in which the non-parishioners were legally settled (column (1)), their family composition (columns (2) to (7)), parish classification (column (8)), and the distance from the parish of settlement to Wheatley (column (9)). The great majority of the non-parishioners residing in Wheatley were married with children. Given that they were likely to be more valuable as farm-workers than others, such as women-led families and single parents with children, their predominance suggests the possibility that the productive workforce tended to reside in the vicinity of their parishes of settlement.[46] Many of these parishes of settlement were categorized as strong close, weak close and intermediate parishes. The predominance of the close parishes is more apparent when the number of families is set against the parish classification. Of a total of 48 families, only two turn out to have belonged to either a weak open (Stokenchurch) or a strong open parish (Burford). Unlike the remaining parishes, these two parishes were 9 and 18 miles away from Wheatley respectively, distances which apparently made it out of the question for labourers to commute to work. Even more convincingly, the three parishes to which 32 families out of the total 48 belonged – Holton, Shotover and Waterperry – are all classified as strong close parishes and are all adjacent to Wheatley. The high level of consistency between the Wheatley memorial and the cluster analysis classification suggests that the document was largely untainted by the alleged political motive of making a scandal out of the existing settlement practices.

[45] BPP, 1847, XI, *Report on settlement and poor removal*, pp. 71–72.

[46] Song, 'Agrarian policies on pauper settlement and migration, Oxfordshire, 1750–1834' *Continuity and Change* 13 (1998), pp. 370–83.

TABLE 9. Families residing in Wheatley but belonging to other parishes, January 1847

(1) *Parish of Settlement*	(2) *MW*	(3) *MWCh*	(4) *MCh*	(5) *WCh*	(6) *MO*	(7) *Total*	(8) *Classification*	(9) *Distance (miles)*
Burford	–	1	–	–	–	1	strong open	18
Forest Hill	–	1	–	–	–	1	weak close	1
Garsington	1	–	–	–	–	1	intermediate	2
Great Milton	–	1	–	–	–	1	weak close	1
Holton	1	7	–	–	1	9	strong close	1
Islip	–	–	–	1	–	1	intermediate	3
Little Milton	–	–	–	–	1	1	intermediate	2
Shotover	1	11	1	3	–	16	strong close	1
Stanton St. John	–	1	–	–	–	1	intermediate	2
Stokenchurch	–	–	1	–	–	1	weak open	9
Sunninghill	–	–	1	–	–	1	–	15
Upper Heyford	–	1	–	–	–	1	intermediate	13
Waterperry	1	5	–	–	1	7	strong close	1
Newport (Bucks)	–	1	–	–	–	1	–	29
Oakley (Bucks)	–	2	–	–	1	3	–	3
Unknown	–	2	–	–	–	2	–	
Total	4	33	3	4	4	48		

Notes: MW: married couples without children; MWCh: married couples with children; MCh: adult males with children; WCh: adults females with children; MO: adult males only.
Source: BPP, 1847, XI, *Report on Settlement and Removal*, p. 72.

In the 1850 Parliamentary Report, G. A. à Becket wrote of the situation of Oxfordshire:

> In almost every union where the course of my inquiry has taken me, I have found some one or more densely populated parishes in the neighbourhood of others thinly populated, all in some cases having scarcely any cottages at all. In the former the dwellings are, for the most part wretched, damp, unwholesome, inconvenient, excessively high rented, and crowded with inmates to such an extent as to render it impossible that health and comfort should be enjoyed.[47]

Amongst the local data that the report collected were data from several poor law unions of Oxfordshire. Covering a considerably wider area than the 1843 Returns, this report derived data from the relieving officers of each union, supplementing it with the official returns to the Poor Law Office.[48] A total of 40 parishes were classified as either open or close parishes, as summarized in Table 10. For the purpose of comparison, we compare the contemporary observation (column (3)) against the result of the cluster analysis (column (4)). The final column measures the

[47] BPP, 1850, XXVII, *Reports of settlement and removal*, pp. xxvii.

[48] Ibid., p. 403.

TABLE 10. Parish Typology of Oxfordshire from the 1850 parliamentary report

(1) *Union*	(2) *Parish*	(3) *Contemporary observation*	(4) *Cluster analysis*	(5) *Distance (miles)*
Abingdon (Berks.)	Burcott	close	weak close	1
	Chislehampton	close	strong close	2
	Clifton	close	strong close	1
	Drayton	close	Intermediate	1
	Nuneham Courtenay	close	Intermediate	3
Bicester	Bletchington	open	weak close	1
	Fritwell	open	weak close	3
	Hardwick	close	strong close	0.5
	Hethe	open	weak close	1.5
	Islip	open	Intermediate	3
	Launton	open	Intermediate	2
	Lower Heyford	open	Intermediate	1
	Newton Purcell	close	strong close	1
	Souldern	open	Intermediate	3
	Stoke Lyne	open	weak close	3.5
	Weston on the Green	close	strong close	1
Headington	Beckley	close	weak close	1
	Cowley	open	weak open	0.25
	Cuddesden	close	weak close	1
	Headington	open	weak open	1
	Holton	close	strong close	1
	Iffley	open	weak open	1
	Marston	open	Intermediate	1
	St. Clement's	open	strong open	1
	Stanton St. John	open	Intermediate	1.5
	Wheatley	open	weak open	1.5
	Woodeaton	close	strong close	2
Thame	Albury	close	strong close	1
	Aston Rowant	open	Intermediate	1
	Charlgrove	close	Intermediate	1
	Chilworth	open	Intermediate	1
	Crowell	open	Intermediate	1
	Emmington	close	strong close	0.5
	Great Milton	open	weak close	2
	Lewknor	close	Intermediate	1

(1) *Union*	(2) *Parish*	(3) *Contemporary observation*	(4) *Cluster analysis*	(5) *Distance (miles)*
	Little Milton	open	Intermediate	1
	Shirburn	close	strong close	2
	Sydenham	close	strong close	1
	Tetsworth	open	weak open	1
	Thame	open	weak open	1

Sources: (1), (2), (3) and (5): BPP, 1850, XXVII, *Reports on Settlement and Removal*, pp. 403–22; (4): see text.

distance from the parish of residence to place of work, which shows that in all cases the dwelling places were located within a short distance, mostly two miles, of the workplaces.

The degree of correspondence between the contemporary observations and the cluster analysis appears to differ between the unions. In Abingdon Union, what were reported as close parishes are grouped in the range from intermediate to strong close parishes. In Bicester Union, by contrast, the so-called open parishes appear to correspond to what the cluster analysis classified as intermediate and even weak close parishes, while all the close parishes turn out to be classified as strong close ones in the analysis. In Headington Union, what were called open parishes appear to range from strong open to intermediate parishes in the cluster analysis, while close parishes are associated with strong and weak close ones in the analysis. Finally, in Thame Union, what the cluster analysis grouped as intermediate parishes appear to have been considered by contemporaries as either open or close parishes, and the rest tend to match well.

Figure 2 illustrates the relation between contemporary categorizations and the result of the cluster analysis. Different unions appear to have different dividing lines between open and close parishes. How can this diversity be explained? The first possibility relates the time gap between 1850, when the parliamentary return was made, and 1831, when the data on which the cluster analysis is based were produced. The demographic and economic situations of the unions may have changed in the two intervening decades, and regional variation in the degree of change may have resulted in these various lines of demarcation. A problem with this explanation is the lack of evidence that such a regional variation had developed between the two dates.[49] Another conjecture is that the relieving officers in individual unions may have had their own criteria of open and close parishes. What an officer in one union regarded as open parishes may not have been taken as such by another in a different union. Perhaps this was due to the ambiguity of the concept of open and close parishes; some officers may have paid attention to the labour surplus and deficit, whilst others laid emphasis on the dwelling conditions, or landholding patterns, or the level of poor relief spending.[50] Despite the various positions of the dividing lines, it is clear from Figure 2 that the result of the cluster analysis is consistent with

[49] The existing evidence, if anything, seems to point in the opposite way. For instance, the 1850 returns show virtually no difference in wage level across the unions discussed above, attesting to similar degrees of population pressure. BPP, 1850, XXVII, *Reports of settlement and removal*, pp. 411–21.

[50] Or, the diverse criteria may be related to different attitudes on the part of the relieving officers towards the necessity for reform in the laws of settlement, although there is no strong evidence for this.

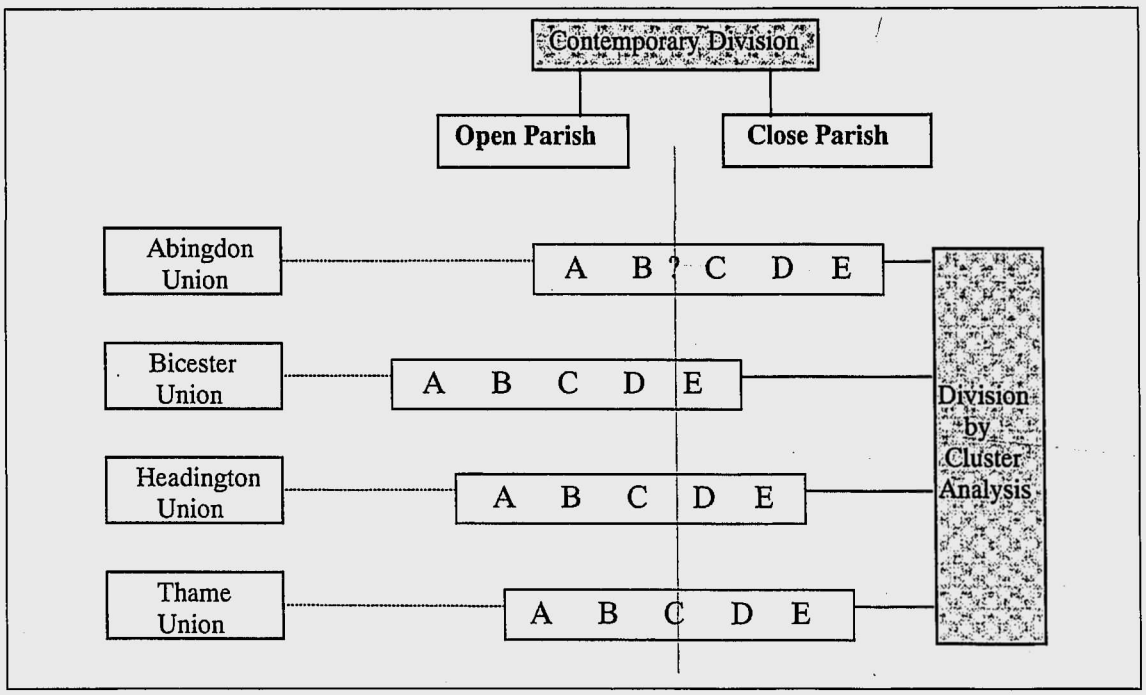


FIGURE 2. Classification of Oxfordshire parishes in 1850 and the result of cluster analysis.

Note: A: strong open; B: weak open; C: intermediate; D: weak close; E: strong close.

contemporary observations to the extent that the *relative* openness of the parishes *in each union* appears to conform to the analytical result. It may be right to say that the overall tone of the 1850 returns was strongly pro-reform, but it seems ill-founded to claim that local returns comprising the 1850 returns were unreliable materials, coloured by the political motive of scandalising the existing settlement system.

VII

The issue of open and close parishes has been touched on by a large number of historians, but in-depth research into the ways in which the system operated has been rare. In particular, little research has been undertaken into the comparative analysis of parishes with different typologies. This article has demonstrated that the open/close parish distinction was an important feature of rural England not only during the mid-nineteenth century, when the issue of open and close parishes was vehemently debated on the stage of national politics, but also during the early nineteenth century, when the terminology had yet to be widely employed. Applying cluster analysis to the data from the early 1830s has shown the real existence of parishes with different degrees of openness or closeness.

The results of the analysis have been used to explore the mode of operation of the open-close parish system. First, the two parish-level poor law returns for the early nineteenth century were investigated. Both have borne out the prediction of the open/close parish model, by showing that open parishes shouldered a substantially higher burden of poor relief in terms of money

rated and spent. The fact that the overall proportion of relief recipients was greater in close parishes than in open ones has been attributed to the significantly more generous poor relief policies of close parishes. This interpretation is supported by the high proportion of those classified as non-able-bodied poor in close parishes, together with the low proportion of recipients of indoor relief. Secondly, two possible sources of bias in *Rural Queries* – the status of the respondents and the socio-economic condition of the responding parishes – have been explored and shown to be significant. This finding suggests that research which neglects this bias may reach misleading conclusions. The focus of the analysis finally moved to the 1847 and 1850 Parliamentary Returns, whose data has been shown to be consistent with the cluster analysis result. This suggests that the claim that these returns were biased by the political discourse of the time is not tenable.

Three seemingly separate issues – whether parishes in different economic circumstances adopted different policies on poor relief in the early nineteenth century, whether the parishes responding to *Rural Queries* of 1832 were representative of parishes in general, and whether the mid-nineteenth-century parliamentary returns properly reflected the real condition of the rural localities – have a common thread: the answer to these questions can be found in the open/close parish distinction. The inter-relationship between parishes with different typologies was a crucial element for determining the ways in which the poor laws and the laws of settlement were implemented in the early nineteenth-century English rural society.

Responding to agricultural depression, 1873–96: managerial success, entrepreneurial failure?*

by E. H. Hunt and S. J. Pam

Abstract

Following publication of the *Agrarian History of England and Wales*, VII, *1850–1914*, this article examines responses to the late nineteenth-century agricultural depression in one of the worst affected counties, Essex, and considers these responses within the broader debate on British economic performance at that time. Responses to depression, especially farmers', were fairly impressive: agriculture did not 'fail'. The landlords' entrepreneurial performance was less impressive, although their shortcomings are unlikely to have affected either output growth or total factor productivity significantly. There were similarities in agricultural and industrial performances although, overall, that of agriculture was arguably the more impressive.

Concluding Volume VII of the *Agrarian History of England and Wales*, E. J. T. Collins highlighted several aspects of the depression requiring further investigation, particularly at regional and local levels.[1] That contemporaries inclined to exaggerate its severity, that it was mainly a cereal crisis of the arable south and east, has long been accepted.[2] Debate has recently focussed on agriculturalists' responses to new challenges. 'By and large', wrote Cormac O'Grada, 'the farmer and the landlord have been given low marks for adaptability and initiative'.[3] O'Grada himself questioned this consensus and so has F. M. L. Thompson, although even now alleged failures in rural enterprise have been far less investigated than the analogous industrial shortcomings enumerated by Derek Aldcroft.[4] There are too the associated questions of whether opportunities were so under-exploited that agriculture may be said to have 'failed', indeed of how failure should be defined and measured. [5] Some accounts discern evidence of failure in low, or negative, rates of output increase as farmers retreated into low farming: others might question the value of a measure that reflects only the productivity of land. If failure did occur, to whatever degree,

* We are grateful for comments on an earlier version of this article from E. J. T. Collins, N. F. R. Crafts, G. R. Hawke and participants in seminars at Victoria University, Wellington, and Jawaharlal Nehru University, New Delhi.

[1] E. J. T. Collins (ed.), *Agrarian history of England and Wales*, VII, *1850–1914* (2000) (hereafter *Agrarian History*, VII), p. 2152.

[2] There are still different views, even within the *Agrarian History*, VII (for instance, pp. 204, 320, 959, 1504–5) on the extent of depression and on whether landlords or farmers were hardest hit.

[3] C. O'Grada, 'British agriculture, 1860–1914', in R. Floud and D. McCloskey (eds.), *The economic history of Britain since 1700* (3 vols, 1994), II, p. 147; Collins, *Agrarian History*, VII, p. 167.

[4] D. Aldcroft ,'The entrepreneur and the British economy, 1870–1914', *EcHR* 17 (1964–5).

[5] Collins, *Agrarian History*, VII, pp. 166, 2148, 2152. An earlier article by Collins, in *Refresh* 21 (1995), was entitled 'Did mid-Victorian agriculture fail?'.

how is blame to be apportioned: were landlords or farmers the more culpable? Some have claimed that landlords innovated too little. Others have drawn attention to the supposedly restrictive effects of traditional leases. Avner Offer, in a vehement interpretation that more contributors to Volume VII might have addressed directly, maintains that failure occurred because agriculture was handicapped by incompetent, risk adverse, and rapacious landlords, and by the pernicious effects of the English estate system.[6] The supposed consequences of the system of large estates, large rented farms, and hired labour are particularly in need of further investigation because they are linked with the surrender of the poultry, eggs, bacon, fruit, and vegetable markets to the Danes and Dutch. One of these consequences, the near absence of co-operation in rural England, is highlighted in several accounts, although treated dismissively by one contributor to Volume VII.[7]

This article attempts a reassessment of the response to agricultural depression in the south-east and to place it more explicitly within the broader debate on British economic performance at this time. It draws upon recently-published work, particularly that contained in Volume VII of the *Agrarian History*, utilizes analytical concepts deployed in the debate on industrial performance, and incorporates also some of our earlier findings on price signals and changing land use. The performances of farmers and landlords are assessed separately and in terms of both managerial and entrepreneurial competence. Their responsibilities overlapped of course, but sections I and II below consider mainly the responses of farmers, while sections III, IV and V discuss the landlords' performance. To facilitate a more detailed analysis than would be practicable for the south-east as a whole, this survey, like our earlier work, focuses upon Essex, the 'proudest' and 'worst-hit' of the corn counties, the 'typical example of agricultural depression', a county where, according to F. M. L. Thompson, output performance was significantly below the English average.[8]

I

Proximity to London presented Essex agriculturalists with obvious opportunities that make their activities particularly appropriate when testing claims that market responses were inadequate. Perry writes reproachfully of a continuing commitment to 'unprofitable' wheat, of the 'slow pace' of necessary adjustment, of 'reluctance to change'.[9] Others have claimed that opportunities to expand milk and meat output were taken-up half-heartedly, that too many hard-pressed cereal growers resorted to low farming rather than turning to eggs, bacon, fruit or vegetables.[10]

[6] C. P. Kindleberger, *Economic growth in France and Britain, 1851–1950* (1964), p. 246; A. Offer, *The First World War: an agrarian interpretation* (1989), chs 7, 8; id., 'Farm tenure and land values in England, *c.* 1750–1950', *EcHR* 44 (1991).

[7] R. Perren in *Agrarian History*, VII, p. 979.

[8] E. H. Hunt and S. J. Pam, 'Prices and structural response in English agriculture, 1873–96', *EcHR* 50 (1997); id., 'Managerial failure in late-Victorian Britain? Land-use and English agriculture', *EcHR* 54 (2001); P. Mathias, *The first industrial nation* (sec. edn, 1983), p. 218; T. W. Fletcher, 'The Great Depression of English agriculture, 1873–96', *EcHR* 13 (1960–1), p. 429; Collins in *Agrarian History*, VII, p. 162; F. M. L. Thompson, 'An anatomy of English agriculture, 1870–1914', in B. A. Holderness and M. Turner (eds), *Land, labour and agriculture, 1700–1920* (1991), pp. 232–7.

[9] P. J. Perry, *British farming in the Great Depression, 1870–1914* (1974), pp. 65, 123.

[10] See, for example, Offer, *Agrarian interpretation*, pp. 93–4; Kindleberger, *Economic growth*, p. 209; Collins in *Agrarian History*, VII, p. 148.

As the most formidable challenge to agriculture arose from cereal imports, and the most promising new opportunities open to it were in supplying produce that enjoyed both protection from imports and growing demand, the obvious starting point is to assess what farmers produced and what changes they introduced. Wheat was unquestionably the most important Essex farm product in 1870–2, accounting for about a quarter of farmland, and over half of the cereal acreage.[11] Cereal prices soon fell. Continued wheat cultivation features prominently in claims that farmers failed to respond appropriately, 'an obstinate traditionary role requires that under any and every circumstance such and such farms shall grow nothing but corn'.[12] But such robust claims are unfounded: between 1870–2 and 1894–6 the Essex wheat acreage fell by two-fifths. Critics might lament that abandoned wheat acreage was not more extensively devoted to high-value alternatives, but readiness to curb output in response to falling prices is surely one valid measure of market adaptability and in this regard, as Michael Thompson and others have noted, the wheat acreage, on its own, offers no clear evidence of inertia.[13] It remains, of course, that a great deal of wheat was still cultivated, and the failure hypothesis might be sustainable if it was produced at a loss or for substantially less than the returns available to dairy and livestock farmers. Fletcher, like Perry, took this view, emphasising not the reallocation of farmland but the million-and-a-half acres still devoted to 'unprofitable' wheat.[14]

More detailed insights into producer-responsiveness are evident in the relationship between short-term price movements and wheat supply. Figure 1 plots Essex wheat acreage linked to its price in the preceding year, and it is clear that a broad correlation between price and acreage change persisted throughout the depression. It is clear too that claims that farmers were slow to react to falling prices underestimate their responsiveness: the wheat acreage was falling fast in 1874–6.[15] At the end of the depression wheat prices and acreage, after falling steeply in the early nineties, recovered together. Given the multiplicity of other variables that rational farmers ought to have taken into account, and given that one of the variables in figure 1 is the average of numerous market reports while the other depends upon the accuracy of respondents in each Essex parish, the considerable correlation between them is not easily reconciled with the more forthright accounts of farmer-inertia: the Pearson correlation coefficient of the variables plotted is 0.93.[16]

In 1870–2 Barley, the second cereal crop in Essex, occupied a little more than half of the acreage down to wheat. Subsequently the barley acreage was broadly sustained while wheat acreage fell to a similar level. Barley prices fell during the depression, of course, and so their

[11] Statistics of acreage and animal numbers, here and below, are from the annual *Agricultural Returns*.

[12] Lancashire farmer visiting Essex in 1896 cited in P. J. Perry (ed.), *British agriculture, 1875–1914* (1973), p. 53; id., 'An agricultural journalist on the "Great Depression", Richard Jefferies', *J. British Studies* 9 (1969–70), p. 131.

[13] Thompson, 'Anatomy of English agriculture', p. 220; M. Olsen and C. C. Harris, in Perry (ed.), *British agriculture*, pp. 152, 172. Responsiveness of wheat output to price changes in various regions of the United States, and in Hungary, was less than the British response. British farmers, of course, were assisted by market proximity and climate. C. O'Grada, 'Agricultural decline, 1860–1914', in R. Floud and D. N. McCloskey (2 vols, 1981), II, p. 182; Offer, *Agrarian interpretation*, p. 96.

[14] Perry, *British farming*, p. 123; Fletcher, 'Great depression', p. 431.

[15] 'Farmers lay stunned ... and simply bided their time until conditions, rather than their system, should change'. R. P. Stearns, 'Agriculture adaptation in England, 1875–1900', II, *Agricultural Hist.* 6 (1932), pp. 130, 143, 148.

[16] That of wheat acreage and the average of wheat prices in *two* preceding harvests was 0.92. On the parish agricultural returns see Hunt and Pam, 'Managerial failure', pp. 244–5.

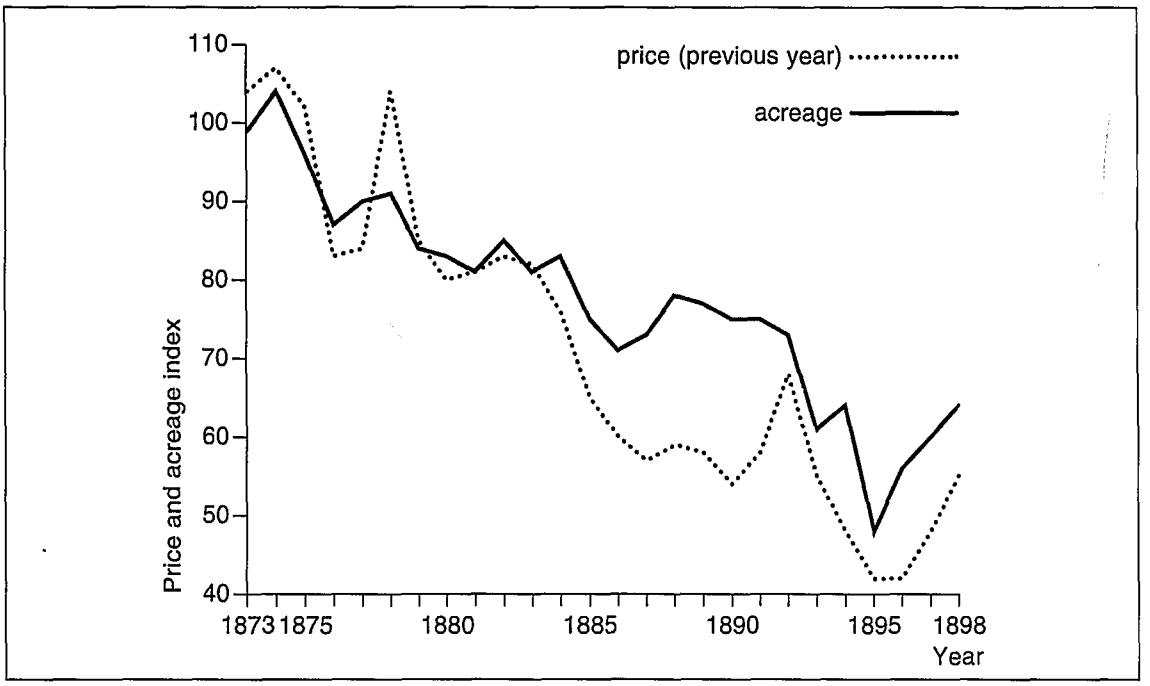


FIGURE 1. Wheat prices and acreage, Essex 1871–98 (1871–75 = 100)

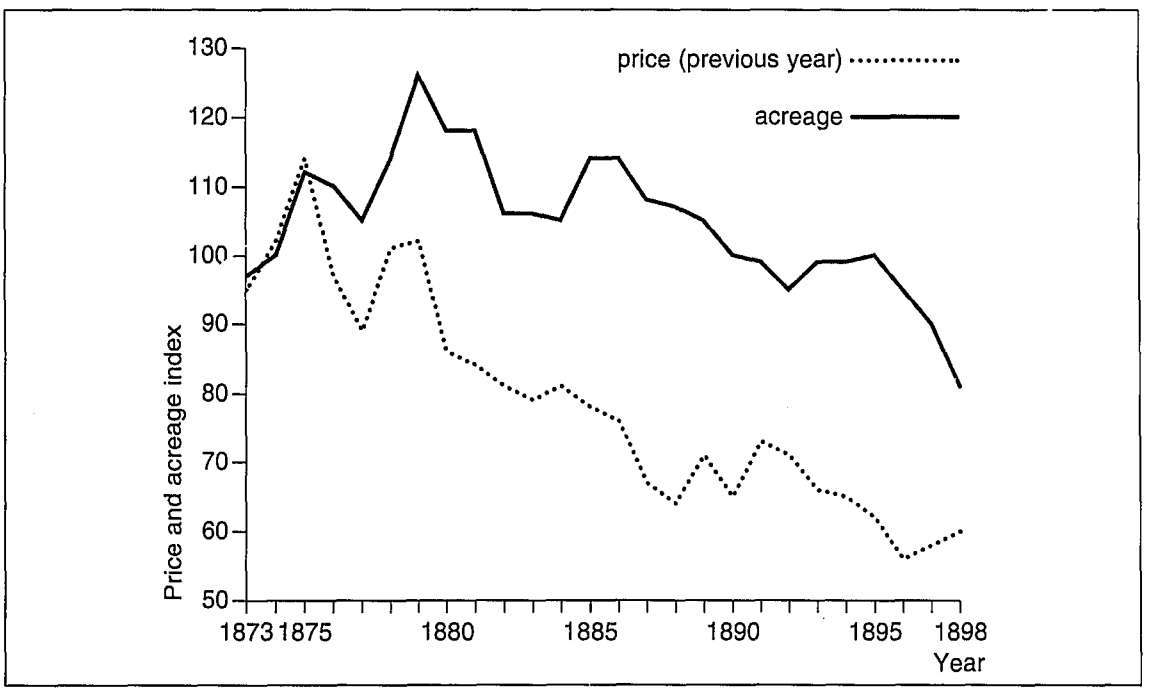


FIGURE 2. Barley prices and acreage, Essex 1871–98 (1871–75 = 100)

Source: (Figures 1–7) acreages taken from *Agricultural Statistics (England and Wales) passim*; prices from Hunt and Pam, 'Prices and structural response', Table 1.

movement was not in long-term harmony with changes in crop-acreage. However, barley prices fell less than wheat prices (Table 1, below) and in real terms changed very little, so an unchanged barley acreage is not necessarily indicative of farmers' inertia.[17] Moreover, the short-term price-acreage relationship, evident in figure 2 where year-by-year barley acreage is plotted against price at the preceding harvest, was fairly close; at most times the two variables moved in the same direction with acreage changes lagging changes in price by more than a year. Because price falls were usually followed by a less-than-proportionate reduction in acreage sown, while rising prices triggered more-than-proportionate increases, the gap between the series gradually widened. The economic activity represented in figure 2, therefore, is entirely compatible with the possibility that barley acreage reflected the decisions of market-sensitive farmers responding to changes in both barley prices (falling in the long-run) and the (rising) price of barley relative to that of wheat. Barley was a cash crop, on most soils easily substituted for wheat. Figure 3, showing the ratio of barley to wheat acreage and that of barley to wheat prices, demonstrates the strength of this relationship (Pearson correlation coefficient 0.83).

Oats were a less important cereal than wheat or barley but repay examination as another cereal crop that farmers are said to have abandoned reluctantly and because, like barley, they were an alternative to wheat. Figure 4 displays a relationship between oat prices and acreage whose implications are similar to those shown in figures 1 and 2. There is a general correlation between short-term movements in the two series but, as with barley and here more emphatically, there is a long-term disparity in price and acreage trends: the area sown to oats rose substantially despite falling prices. Initial appraisal might interpret the latter relationship as indicative of farmer-irrationality, of a 'catch 22' attempt to compensate falling prices by increasing output. But this would be mistaken. All farm prices, even milk prices, fell during the depression: greater output of some products whose prices fell was a necessary part of adjustment and increasing oats output is partly explained by a relative increase in price compared with barley and wheat prices: between 1871–5 and 1891–5 oats fell in price 31 per cent, barley by 36 per cent, and wheat by 49 per cent.[18] Particularly interesting is the steep rise in oats acreage between 1892 and 1895 when its price fell but wheat prices plummeted. In these few years the Essex wheat acreage diminished by a remarkable 34 per cent while that of oats rose 27 per cent. Likewise, the initially surprising juxtaposition of rising acreage and falling prices for barley and oats in 1884–6 (figures 2 and 4) has quite different implications in the context of the simultaneous, and far greater, fall in wheat prices.

Thus far nothing has been found that suggests farmers behaved irrationally in re-allocating their cereal acreage. But the main thrust of arguments alleging managerial failure is that resources were misallocated, not between alternative cereals, but between cereals and livestock. Falling wheat prices may well 'explain' rising barley and oats acreage in the mid-1880s and the remarkable expansion of oats cultivation in the early 1890s, but were they accompanied by a corresponding expansion of the non-cereal sector? Change in the area under grass provides one indication of such adjustment. In figure 5 wheat prices are plotted alongside the acreage devoted to pasture. The distinction between 'permanent' and 'temporary' pasture is tentative, but substantial grassland

[17] Table 1 (below) and B. R. Mitchell and P. Deane, *Abstract of British historical statistics* (1962), pp. 474, 489.

[18] Table 1, below. Comparison with the Sauerbeck – *Statist* price index suggests that real oat prices may have *increased* slightly.

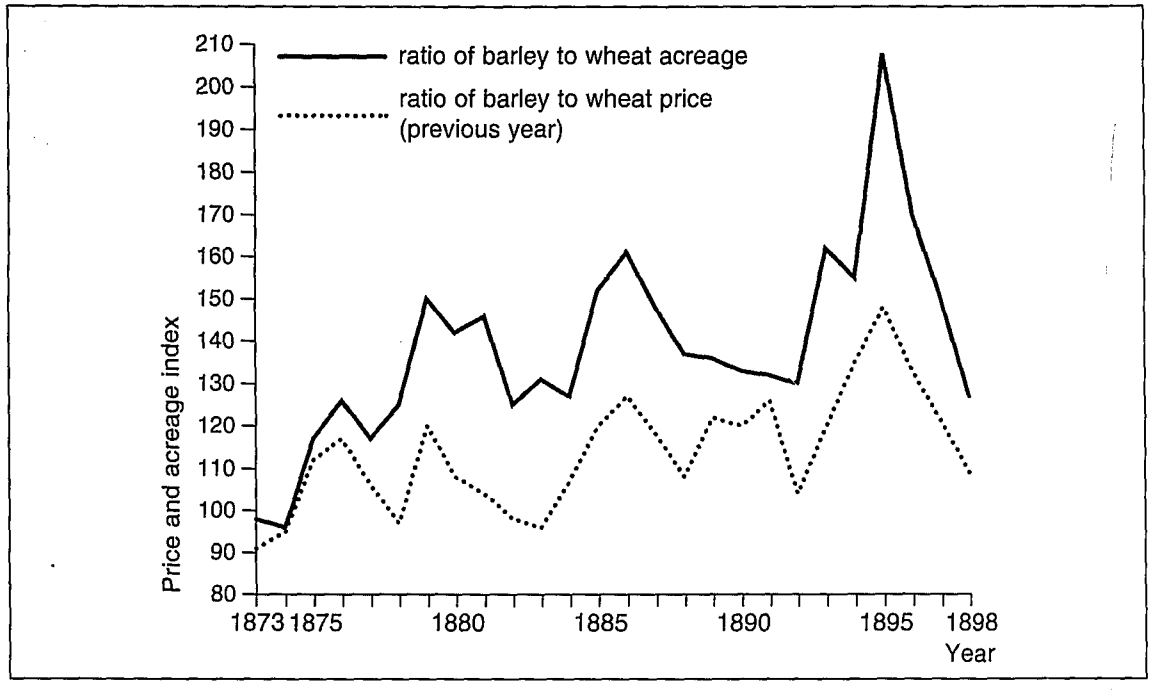


FIGURE 3. Wheat and barley prices and acreage, Essex 1871–98 (1871–75 = 100)

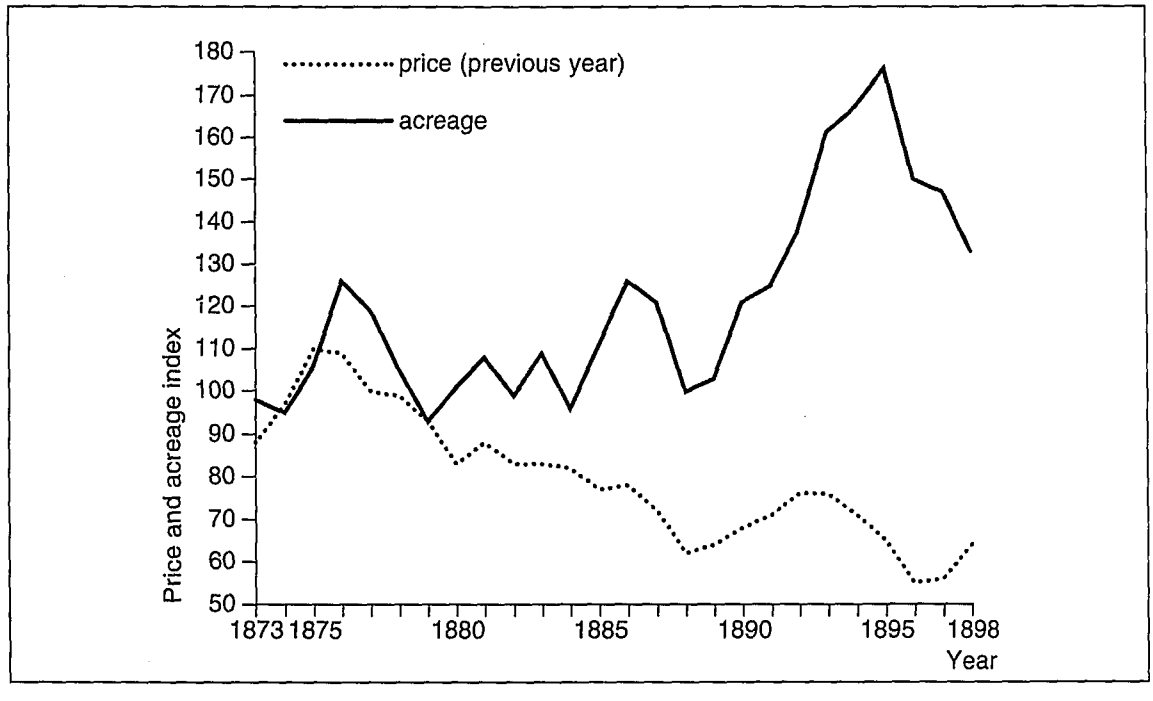


FIGURE 4. Oat prices and acreage, Essex 1871–98 (1871–75 = 100)

expansion – 40 per cent between 1873 and 1896 in Essex – is clearly evident.[19] At first, expansion of temporary grassland outstripped that of permanent pasture, a rational response to the initially modest shift in the cereal-livestock price differential.[20] But even in the 1870s there was more expansion of permanent pasture than is compatible with claims that the response to depression was long-delayed. Another positive development was a 50 per cent increase in the acreage devoted to hay, some consumed on the farm, some to feed London's horses.

Much of this new pasture was for cattle grazing. Figure 6 shows changes in cattle numbers and in the number of dairy and non-dairy cattle. Neither milk nor beef production were of much consequence in Essex when the depression began and subsequent expansion was intermittent and insubstantial.[21] Comparing 1871–5 with 1891–5, cattle numbers increased only 15 per cent, and this modest expansion is sometimes cited in accounts critical of farmers' responses to depression. However, figure 6 also shows that dairy cattle numbers increased considerably. Whereas there were scarcely more non-dairy cattle in 1891–5 than had been recorded twenty years previously, the number of milkers had risen by some 45 per cent; by 1893–5 Essex milk receipts equalled those from wheat.[22] Failure to expand beef output much is certainly amongst the criticisms made of farmers in the south-east, but where beef-raising and dairying were alternatives it made sense to opt for dairying because milk prices were better-maintained. Moreover, meat imports placed particular pressure on the price of poorer-quality beef at a time when rising real wages discouraged labour-intensive production of premium beef, and encouraged labour-saving rough-grazing that sustained fewer cattle, of indifferent quality, on a given acreage.

Pig-raising, although widespread in Essex, as elsewhere, had long been 'regarded rather as a casual adjunct than as a primary, or even secondary, consideration'.[23] Few farmers concentrated upon pig-raising, and although pig-meat prices were comparatively buoyant, pigs featured far less prominently than dairying among the alternatives urged upon cereal growers. What do the price and output series suggest of the market performance of Essex farmers in this branch of agriculture? Figure 7 shows that prices and pig numbers were both volatile, that pig numbers appear at times to have followed prices with a two or three year lag, and that the relationship between price and supply appears less close than those in the price and supply of wheat, barley, and oats.[24] Although pig-meat prices improved relative to cereal prices (Table 1, below), there

[19] Fields devoted to temporary grass would be recorded as 'permanent pasture' after two or three years. Moreover, both categories encompassed a great variety of grazing. Through-going conversion to pasture, and best-practice temporary pasture, required extensive preparation. But some arable became 'pasture' when unploughed and unweeded fallow-land accumulated sufficient self-sown grass ('tumble-down'). Pasture-making and cattle-raising occurred over several years: thus making inappropriate analysis of the kind depicted in Figs 1–4.

[20] Hunt and Pam, 'Prices and structural response', p. 497.

[21] Ibid., pp. 486–7, 490. The categories were not exclusive: milkers produced calves destined for veal or beef, and most milkers were eventually sold as poor quality beef. Beef production, of course, was also linked with cereals in systems of mixed farming. Problems arising from time-lagged responses, and the subtle relationship between prices of bought-in store cattle and those of fat stock, preclude useful year-by-year comparisons between cattle numbers and the prices of meat and milk.

[22] S. J. Pam, 'Essex Agriculture, 1850–1914' (forthcoming Ph.D thesis, University of London), ch. 5.

[23] R. Jefferies, *Field and farm* (1957), p. 189; J. Thirsk, *Alternative agriculture: A history* (1997), p. 196.

[24] Fig. 7 shows pig numbers against pig-meat prices in the previous year. Such comparisons are weakened by considerable short-term fluctuations in pig numbers.

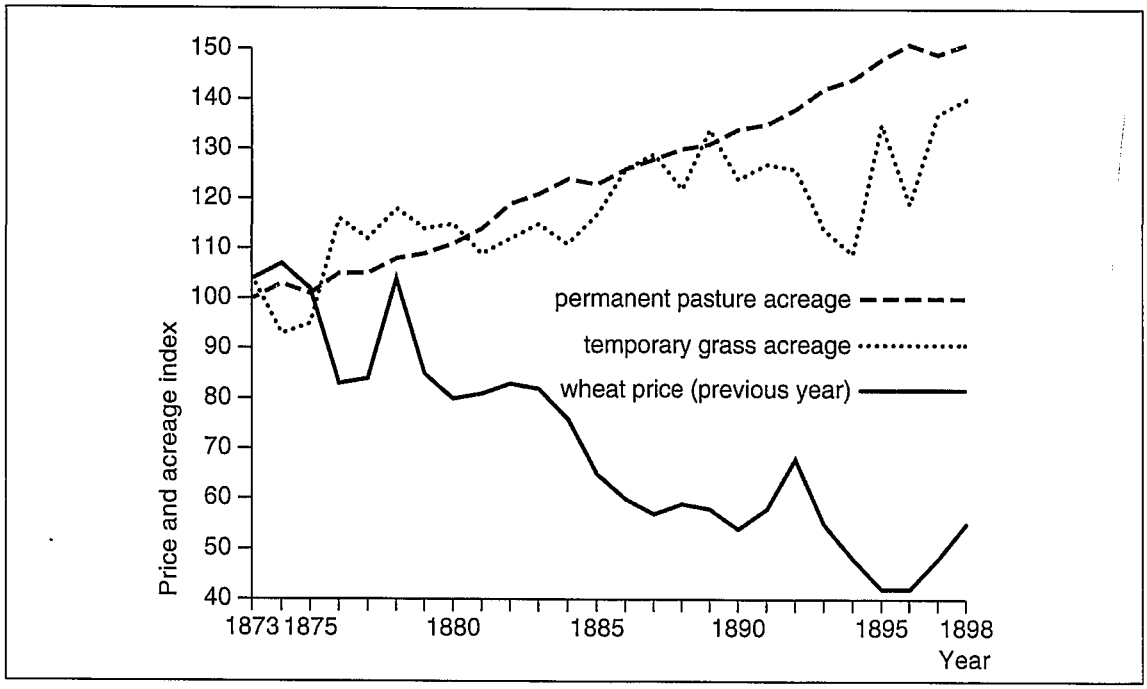


FIGURE 5. Wheat prices and pasture acreage, Essex 1871–98 (1871–75 = 100)

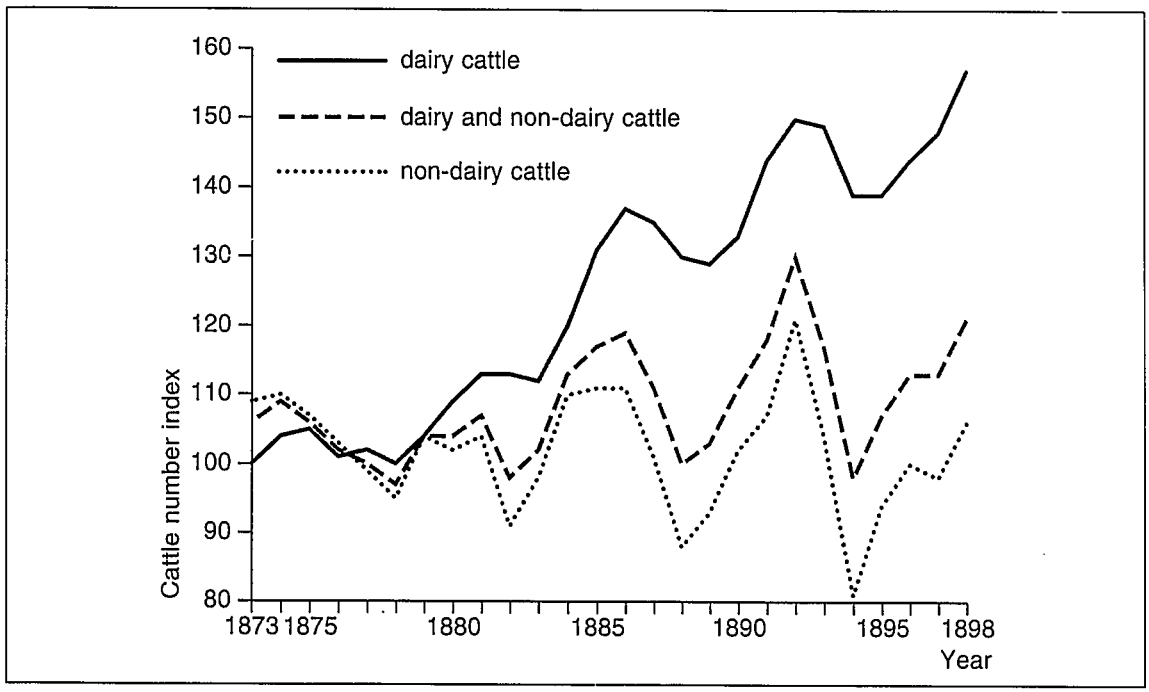


FIGURE 6. Cattle numbers, Essex 1871–98 (1871–75 = 100)

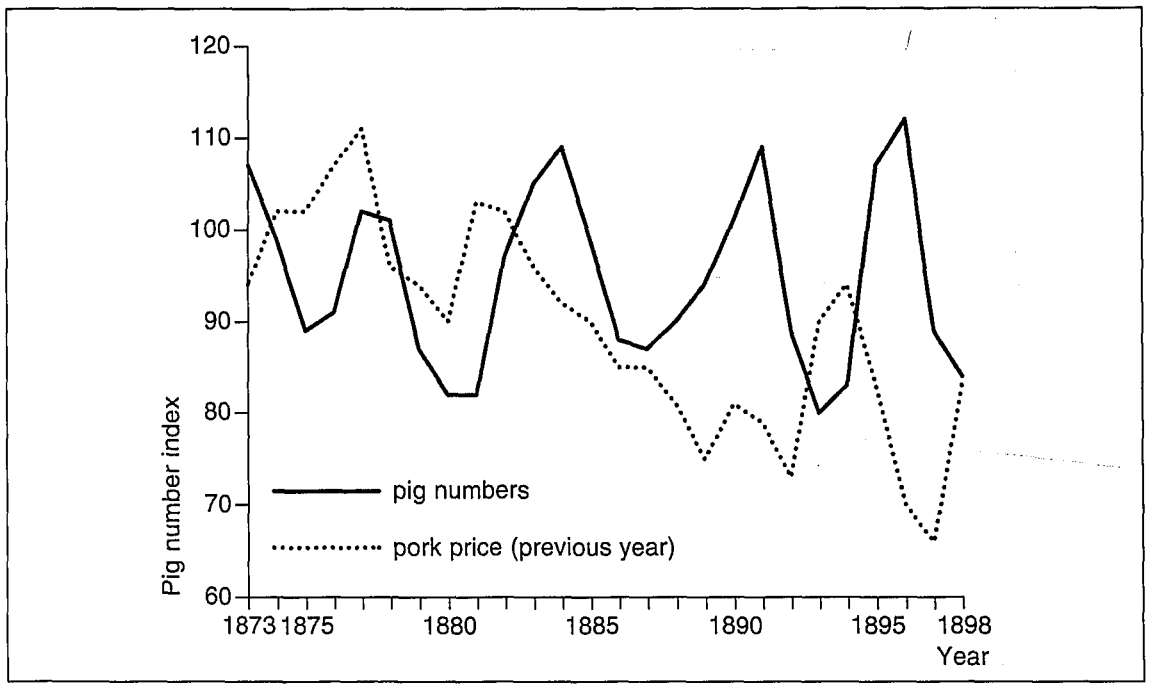


FIGURE 7. Pig numbers and prices, Essex 1871–98 (1871–75 = 100)

was little long-term increase in the Essex (or national) pig population.[25] Possibly the particular volatility of pig-meat prices was discouraging and partially obscured their long-term buoyancy: even so, there is a suggestion that farmers might have turned towards pig-raising with more enthusiasm. Whether there were similar anomalies in the relationship between sheep numbers and prices is difficult to ascertain. Sheep-meat prices fell less than cereal prices in the depression which, taken alone, indicates that sheep numbers perhaps should have increased. Wool prices, however, fell disastrously (Table 1, below) and prices for lowland mutton were particularly affected by imports of frozen meat. Moreover, lowland sheep-raising was associated with cereals, and the retreat from corn was a further disincentive to sheep-keeping. So too, of course, was liver-rot in 1879–81 and enhanced supplies of chemical alternatives to sheep dung. The probable net implication of these market signals was that Essex farmers should keep fewer sheep: they acted accordingly, between 1871–5 and 1891–5 sheep numbers fell 16 per cent.

Taken together this evidence of land-use, animal numbers, and prices indicates significant structural adjustment in Essex agriculture. Considerably less corn and more milk and hay were produced, and the acreages devoted to wheat, barley, and oats responded impressively to short-term price fluctuations. Clearly questions remain concerning whether *sufficient* structural change occurred, especially if wheat was ever cultivated at a loss, and there appears more than a possibility that farmers responded tardily to opportunities to supply pork and bacon. There were quite probably also other missed opportunities beyond the conventional range of cereal and livestock alternatives. Very little cheese and butter were produced in Essex. More remarkable

[25] The returns do not cover holdings of under a quarter of an acre before 1891, nor those less than an acre subsequently. Thus cottagers' pigs are excluded.

perhaps, given proximity to London, is that fruit, garden vegetables, eggs, and poultry did not occupy a more prominent place among alternatives to cereals. Good long-run price evidence for these products is regrettably elusive, but that available indicates price and demand trends compared favourably to those for cereals and one Essex farmer, probably exceptional in keeping poultry on a large scale, claimed it was the most profitable of his activities.[26] Of the ten price series in Table 1 (below) only that for milk records a significantly lesser fall than the fall in egg prices.[27] These activities were of minimal importance in the seventies. Considerable Essex acreage was then devoted to potatoes, cabbages, carrots, peas and other vegetables easily incorporated into arable rotations (some for animal feed), but in 1874 'orchards', 'market gardens' and 'nursery gardens' accounted for fewer than 6000 acres. Poultry was considered too inconsequential for enumeration until the mid-eighties when some 290,000 hens, less than one to two-and-a-half acres, were returned on holdings above a quarter-acre. They were uncounted again after 1886, but circumstantial evidence suggests that poultry and egg output, although growing, remained of minor importance.[28] By this time there was extensive market gardening in some districts close to London, Colchester, Chelmsford, and Southend, including numerous glass-houses along the Lea Valley; seed cultivation had become important in the vicinity of Hatfield Peverel, Kelvedon, and Marks Tey; and soft-fruit was produced around Stanford-le-Hope and close to Wilkin's jam factory at Tiptree.[29] But the total area under orchards and market gardens still occupied barely one per cent of Essex farmland.[30] If this suggests possible missed opportunities, farmers were not the chief culprits because such labour- and land-intensive activities were more usually, and more effectively, pursued on holdings far smaller than most Essex farms, and the initiative and investment necessary to create smallholdings was clearly the responsibility of landlords.

II

Were the adjustments just described significantly less than what was desirable and possible? Whether the traditional image of farmer-inertia requires amendment depends in part on the clarity of price incentives to adapt, and also upon farmers' ability to respond. Price differentials and the constraints imposed by soil-type and market accessibility were examined in two recent publications that suggest good reasons why adjustment fell short of complete transformation.[31]

Critical accounts incline to assume that price signals encouraging farmers to abandon cereals

[26] BPP 1896, XVI, pt i, *Royal Commission on agricultural depression, minutes of evidence*, pp. 418, 420; *Digest of evidence*, pp. 174–5. Lewis Wright made a similar claim in 1911, 'poultry pay best of any branch upon a farm'. At that time imported poultry and eggs accounted for over half of consumption. On these themes see Thirsk, *Alternative agriculture*, pp. 192–5, 212; I. Mead, *The story of an Essex lad* (1923); E. J. T. Collins, *A history of the Orsett estate, 1743–1914* (1978), pp. 66–9; Stearns, 'Agricultural adaptation', p. 138; *Agrarian History*, VII, p. 225; Kindleberger, *Economic growth*, p. 242.

[27] Prices for 1871–5 and 1891–5 compared. See also *Agrarian History*, VII, pp. 2096–7.

[28] Egg and poultry production has been estimated as worth about 6.5% of all livestock production in 1900 (England and Wales), ibid., p. 192.

[29] *Ibid.*, p. 175; Thirsk, *Alternative agriculture*, pp. 179–84, 189; E. H. Rowley, 'Memoirs', *Panorama* 5 (1960), pp. 32–3; A. W. Ashby, 'Some minor farm crops, III: seed growing in Essex', *JRASE* 74 (1913); Collins, *Orsett*, pp. 66–9.

[30] Measurement is beset by changes in definition and in the size of the smallest enumerated holding. In 1896 orchards, market gardens and other land under soft fruit amounted to 7608 acres. Holdings of less than an acre were not enumerated at this date.

[31] Hunt and Pam, 'Prices and structural response'; 'Managerial failure'.

TABLE 1. Agricultural prices, 1871–1895, five-year averages (1871–75 = 100)

Date	*Wheat*	*Barley*	*Oats*	*Pork*	*Mutton*	*Wool*	*Beef*	*Milk*	*Butter*	*Cheese*
1876–80	87	92	93	99	93	69	91	100	97	94
1881–5	73	79	81	93	94	48	91	97	93	95
1886–90	57	68	67	80	79	47	72	88	82	84
1891–5	51	64	69	82	72	46	72	86	80	74
Change 1871–5 to 1891–5 (%)	–49	–36	–31	–18	–28	–54	–28	–14	–20	–26

Source: Hunt and Pam, 'Prices and structural response', p. 481.

for milk and meat were clear and emphatic: in fact they were neither. With hindsight, certain long-term price trends are quite clear. Even so, the disparity between cereal and milk price trends was less than many commentators suppose, while beef, mutton, wool, and cheese prices were not much better-maintained than those of oats and barley. And in the shorter-term these changes were even less clear, as is evident by comparing the long-term price trends of Table 1 with the confusion of short-term fluctuations depicted in figures 1–7. Thus anxious farmers, lacking hindsight and in receipt of a hotch-potch of conflicting advice, were further confused by conflicting short-term price signals.[32] Caird's early optimism regarding London's almost boundless demand for milk, and Kindleberger's more recent assertion that dairy farmers satisfying that demand 'suffered not at all', are equally mistaken: milk markets were frequently glutted.[33] Among other disincentives to abandoning cereals were the ever-present threat of animal disease, and growing overseas competition in the livestock sector. Imports of tinned, powdered, frozen, and even fresh milk had begun and only the very complacent, or prophetic, would have discounted entirely the possibility that milk – like cereals, wool, cheese, and meat – would eventually encounter formidable import competition.[34] With prospects so uncertain it is neither surprising nor reprehensible that farmers hesitated before further commitment to dairying. How prospects appeared at the time is apparent in R. Hunter Pringle's report on Essex for the Royal Commission on Agricultural Depression (1894) in which he warned that dairying, already barely profitable, would be thrown into crisis by further expansion.[35]

Even so, price incentives were sufficient to persuade many Essex farmers to adapt and it might be asked why others did not follow them. Why did cereals and fallow still occupy a third of Essex farm land at the end of the depression? These questions were addressed in an analysis of land-use that demonstrated how incentives and opportunities to abandon cereals were closely linked to soil-type and access to markets. There was a range of constraints and opportunities. On clay or light-soil farms, with access to urban markets, considerable conversion to dairying occurred. Marginal corn-land that was less well-placed to send milk to towns (milk producers needed to

[32] The *Essex Standard* deplored the 'worse than useless' recommendation of city pundits, 'with such a multitude of counsellors one hardly knows which to follow'. Hunt and Pam, 'Prices and structural response', pp. 500–1.

[33] In 1884, for example, supply was reported 'altogether overdone ... milk at the stations can hardly be given away', ibid., pp. 490–3. See also R. Perren in *Agrarian History*, VII, p. 995.

[34] Hunt and Pam, 'Prices and structural response', p. 493. Over 90,000 gallons of frozen milk came from Sweden in 1894. *Cowkeeper and Dairyman's J.* (Mar. 1895).

[35] BPP 1894, XVII, pt i, p. 83.

be within a few miles of a station) was more often converted to pasture for beef or hay. On the better land by contrast, the medium soils and boulder clays, cereal production, including wheat, remained both viable and rational.[36] There, falling prices were sufficiently offset by falling costs, and little conversion to dairying occurred even on land with good access to urban markets. Farmers appear to have responded positively to depression, although not by a gaderene flight to milk and meat. Their tactics were more nuanced, more cognizant of local soils and market opportunities. In some Essex parishes milking-cow numbers doubled over the depression; in others there was no increase at all. Besides milk and meat, hay, potatoes, and other produce were also substituted for cereals. And within the cereal regime, as we have seen, there was constant fine-tuning between wheat, barley and oats in response to shifting prices.

The same analysis suggested that 'low farming' represented a more positive response to depression than is implied in the disparaging interpretations of numerous critics. Low-farming is evident in pasture acreage increasing faster than animal numbers as rough grazing was extended, in cereal yields that failed to rise although marginal land fell out of cultivation, in a much-reduced labour force, and in low, or negative, increases in farm output. But retrenchment along these lines, particularly on the poorer soils where it was concentrated, represented entirely rational responses to depression. Expanding milk production, the urban critics' 'obvious' alternative to cereals, was not practicable where transport was poor and discouraged everywhere by periods of over-supply and low prices, while labour-intensive production of quality meat was unattractive because rising wages more than offset falling feed costs. Thus movements in the cost of farmers' main outlays, wages (rising) and rents (falling), constituted a formidable case for a leaner-meaner regime that maximized output-per-man, rather than output-per-acre, and transformed marginal arable into marginal-pasture, quickly and cheaply. Golden-age fastidiousness – trim landscapes and bumper crops – was replaced by low-cost, low-yield systems with an emphasis on labour-saving. Low-farming possibly reduced labour costs by more than increased use of machines, horses, and fertilizers, and the same quest for labour economies was probably as influential as changing price differentials in encouraging the transition from cereals to rough grazing. In some places of course, particularly close to towns or railways, dairying or other alternatives to cereals were more profitable options, but it is quite wrong to depict rough-grazing, and other low-farming, as everywhere, and self-evidently, the redeployment of last-resort.

Because it violated time-honoured assumptions associating 'good farming' with cereals and high yields, low farming was widely discredited by contemporaries who lamented its aesthetic shortcomings: hedges and ditches neglected, gates and fences unrepaired, twitch and thistle amid growing crops. Rider Haggard, for example, described 'thousands of acres of strong corn lands which have tumbled down to grass'.[37] Rough grazing land was frequently accounted 'abandoned' or 'derelict': it represented 'an admission of failure ... ranches for cattle rather than serious cultivation'.[38] Some such accounts were partly justified: by the nineties the least-viable land was close to reverting to wilderness. But a great deal of entirely rational adaptation was dismissed in

[36] Collins describes the Essex Rodings as 'arguably the best wheat-producing district in Britain', and G. E. Mingay notes the continued viability of arable farming, and constraints on dairying expansion, on the nearby Terling estate. *Agrarian History* VII, pp. 163, 791.

[37] Haggard, *Rural England* (2 vols, 1902), I, pp. 465–6.

[38] *Agricultural Gazette*, 24 April 1882; F. A. Channing, *The truth about the agricultural depression* (1897), pp. 4–5; W. Gavin, *Ninety years of family farming* (1967), p. 87.

similarly apocalyptic terms. One account claimed that approaching half of the land 'between Chelmsford, Maldon and the Blackwater in the north, and the Tilbury-Southend railway in the south' was 'practically waste'.[39] Similar exaggerations were triggered by the infamous black-bespattered map accompanying the second Royal Commission on Agricultural Depression (1894) which depicted not abandoned land, as many supposed, but land converted to rough grazing.[40] It is doubtful, in fact, that as much as one per cent of Essex farmland was ever 'abandoned'.[41] Such criticism of low-farming is implicitly endorsed in some recent accounts. Kindleberger and Offer emphasize low, or negative, output growth at this time and regret that so much high-yielding cereal land became low-yield rough grazing. Labour productivity gains are acknowledged, but low output growth is clearly associated with poor performance, with 'retreat' and 'failure to transform'.[42] Such interpretations are flawed. Even in the high-price, high-rent, low-wage, 'golden age', high-farming had been more remarkable for methodological elegance than economic efficiency. But after 1873 prices and rents fell while wages rose and, *pace* Caird, it was low farming that was to prove the better substitute for protection.[43]

Obviously not all alternatives to high farming entailed lower-output per acre: it was suggested earlier that opportunities to expand output of pigs, fruit, and vegetables were perhaps under-exploited. But the precarious fortunes of those who turned to dairying and quality beef, the most-canvassed alternatives to cereals, indicate that these opportunities were near-fully exploited and that low-pressure farm systems had a crucial role in responding to depression. The consequent relative decline in land productivity is no more indicative of 'failure' than the simultaneous rise in labour productivity. Not surprisingly, therefore, most estimates of total factor productivity (TFP) convey a more favourable impression of performance than those based upon output alone. There is, of course, considerable inconsistency in calculations of TFP and until more robust statistical evidence is available such evidence should be used sparingly.[44] But there appears no

[39] *Victoria County History, Essex,* II (1907), p. 339.

[40] BPP 1894, XVI, pt i, end-paper. Likewise the 'many square miles of wasteland' in the Dengie Hundred that closer inspection reduced to fewer than a thousand acres. Haggard, *Rural England,* I, pp. 466–7.

[41] Pam, 'Essex Agriculture', ch. 5; Collins in *Agrarian History,* VII, p. 162.

[42] Kindleberger, *Economic growth,* pp. 209, 239–47; Offer, *Agrarian interpretation,* pp. 93–5.

[43] J. Caird, *High Farming under liberal covenants: The best substitute for protection* (1849). R. H. Pringle recorded returns to low farming considerably above those available on land 'farmed well', BPP 1894, XVI, pt i, *Report on Essex,* p. 55.

[44] Estimates of TFP in *Agrarian History,* VII, range between 0.19 and 0.56% p.a. The lower figure is half the rate of growth J. L. van Zanden calculates for France and one-eighth of that he calculated for Germany, comparisons that might be considered implausible for a time when the French and German rural exodus was comparatively slow. O'Grada, reviewing *Agrarian History,* VII, indicates shortcomings in van Zanden's TFP estimates, 'Farming high and low, 1850–1914', *AgHR* 49 (2001), p. 216. O'Grada's revised (1994) TFP estimates appear to be significantly higher than the rate he calculated in 1981 (with different terminal dates). Such calculations are much affected by choice of base year and inherent weaknesses in measures of output, labour, and capital. Output figures relate variously to the UK, Britain, or to England and Wales and to gross or net output. The more pessimistic calculations claim output falls of up to 20%, whereas Michael Turner's most recent estimate indicates an increase of about 8% (1867–9 to 1895–7). Labour productivity gains have been calculated at levels between 14 and 66 per cent, and are much influenced by how the work of farmers' female relatives is assessed. Capital estimates are similarly tentative with contributors to the *Agrarian History,* VII, and to different editions of Floud and McCloskey, offering alternative views on whether more or less capital was employed during the depression. *Agrarian History,* VII, pp. 135, 139, 161, 205, 301–2, 313, 316, 319–20, 911, 1889, 1904–9; Floud and McCloskey, *Economic History* (1981), II, pp. 178–9; (1994), II, pp. 148–9.

reason to dispute Collins's generalization that sustaining depression output at approximately the same level as that at the end of the Golden Age, with far less labour and little, if any, more capital, was 'no mean feat'.[45]

III

Whereas monitoring prices, and the annual allocation of land between different crops and livestock was largely the responsibility of farmers, the landlords' role embraced more strategic and more entrepreneurial responsibilities. They dominated rural society and others looked to them for direction and initiatives. One of their responsibilities was the provision of long-term capital and the traditional view of investment during the depression, part of the alleged agricultural 'failure', is that insufficient was invested, that the transition from cereals to milk and meat was impeded by landlord parsimony. With rents falling, retrenchment allegedly became the order of the day: 'expenditure usually followed income downwards' ... 'improvements such as land drainage ... and new buildings ... were stopped at once'.[46] However, there have always been dissenters from this view and it is not readily reconciled with restructuring as extensive as that described above. How was agricultural investment in Essex affected by economic adversity? Which of the conflicting estimates of investment used in total factor productivity analysis (above) is most consistent with the Essex experience?

Not surprisingly, there was a variety of responses: some Essex men curtailed investment, others invested more to maintain rents and keep tenants. But the most typical experience was at odds with textbook generalizations. Although rents fell, investment levels were generally maintained and on several estates they increased. The ledgers of the Land Loan and Enfranchisement Company and the General Land Drainage Company each show substantially greater sums loaned to Essex borrowers between 1875 and 1884 than in the previous ten years: twice as much was loaned by the first company, half as much again by the other.[47] Government loans for farm buildings, nationwide, were considerably higher in 1875–99 than between 1850 and 1874, and although borrowing for drainage in Essex moderated in the eighties it remained at levels incompatible with claims of improvement routinely curtailed.[48] R. Hunter Pringle, in 1894, noted several neglected investment opportunities, but was also impressed by 'liberal expenditure' on cowhouses, milkrooms, sheds, new farmhouses, covered yards, farm roads, gates, and fencing.[49] Further evidence of sustained, or increasing, investment can be found in surviving estate papers. On the Orsett estate (Thurrock), for example, Richard Wingfield-Baker, having stinted investment in the 'golden age', borrowed £2900 for buildings and cottages in 1875.[50] His son, Digby Wingfield, borrowed £1500 for drainage in 1882, and between 1887 and 1892 a further

[45] *Agrarian History*, VII, p. 205.

[46] Lord Ernle, *English farming: Past and present* (1967 edn), pp. 382–4; C. S. Orwin, *A history of English farming* (1949), p. 77; Perry (ed.) *British agriculture*, p. xxix; id., *British farming*, p. 112; F. Crouzet, *The Victorian economy* (1982), p. 173; J. Brown, *Agriculture in England: a survey, 1870–1947* (1987), pp. 15, 29–31.

[47] PRO, Land Loan and Enfranchisement Company ledgers, 1 and 2 (1861–84), MAF 66/4–5; General Land Drainage Company Ledgers 1 and 2 (1851–96), MAF 66/1–2.

[48] A. D. M. Phillips, 'Landlord investment in farm buildings in the second half of the nineteenth century', conference paper summarized in *AgHR* 44 (1996), p. 102; id., *The underdraining of farmland in England during the nineteenth century* (1989), p. 125.

[49] BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, pp. 39, 51, 59.

[50] PRO, MAF 66/4.

£9500 was spent on restoring run-down farms.[51] In the 1890s an expensive re-equipment of their Essex farms by the governors of St Bartholomew's Hospital was accounting for as much as 40 per cent of rents.[52]

Some accounts suggest that while expenditure did not immediately cease, the *eventual* influence of depression was significantly less investment.[53] The evidence from Essex on this point is not consistent because certain landlords, like Lord Ashburton and the governors of the St Bartholomew's estate, invested heavily towards the end of the depression.[54] However, there does appear to have been some falling-off in investment after the mid-eighties. This is the clear implication of evidence on government loans for agricultural improvement in England and Wales as a whole.[55] R. J. Thompson's calculations, published in 1907, estimate landlord investment at equivalent to 27 per cent of rental income in the early 1870s and mid-1880s, and to 22 per cent of the (reduced) income of the later–1880s.[56] It seems that many landlords invested heavily to maintain rents in the seventies and to improve drainage during the wet years around 1880. In time, however, investment came to reflect growing awareness that depression was long-term. Less fortunate landlords had retrenchment thrust upon them as existing mortgages became more onerous, leaving less to spare for maintenance and improvement. Some lenders, moreover, became less willing to make new loans, and some attempted to recall loans arranged when prospects had been more favourable.[57]

Another generalisation that can be tested against Essex evidence is the claim that tenant farmers, and landlords with modest holdings, among the first to discover that lenders could be less accommodating, were the more reluctant investors and particularly inclined to economize after the mid-eighties. The Bonnell family's estate (under 2000 acres), was one where investment was soon restricted to little beyond essential repairs. The post-1880 'liberal expenditure' noted by Hunter Pringle was on 'estates in a position to make improvements'.[58] It is probable too that tenants now shouldered less of the investment burden. When tenants had competed for farms and could raise loans easily, landlords had been able to delegate a greater part of investment expenditure.[59] But with vacant farms becoming plentiful in the depression, and a greater concern to keep tenants, landlords more willingly met the cost of fencing, drainage, and repairs. Farmers, of course, could no longer so easily meet such expenditure: the accounts of Essex land owned by St John's College, Cambridge, record substantial expenditure on repairs, 'as the tenants could

[51] Ibid., Rural History Centre, University of Reading (hereafter RHC), ESS 17/6/27. For a similar account see Collins, *Orsett*, p. 42.

[52] St Bartholomew's Hospital, London, Almoner's Reports, EO 8/7; accounts, 1890–1914. See also Essex RO (hereafter ERO), Petre MSS, Thorndon accounts, D/DP, A series; Berkshire RO, Benyon MSS, Turner's account for Essex, D/E By, A135, A139.

[53] See, for example, F. M. L. Thompson, *English landed society in the nineteenth century* (1963), pp. 315–6.

[54] ERO, Ashburton MSS, D/D An, T17.

[55] BPP, 1899, XVIII, p. 20, *Annual reports of the Board of Agriculture, passim.*

[56] R. J. Thompson, 'An inquiry into the rent of agricultural land', *J. Royal Statistical Society* 70 (1907), p. 603 (table VII).

[57] BPP, 1894, XVI, pt i, *RC on agricultural depression, evidence*, p. 49; D. Cannadine, 'Aristocratic indebtedness in the nineteenth century: the case re-opened', *EcHR* 30 (1977), p. 646; J. V. Beckett in *Agrarian History*, VII, pp. 755–6; Holderness, ibid., pp. 927–9.

[58] ERO, Bonnell MSS, accounts, D/D Hn, A4–7; particulars of money spent, E4; BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, p. 59. A. D. M. Phillips (in the conference paper cited before) discovered that smaller estates (under 1000 acres) were under-represented nationally among those taking up government improvement loans.

[59] E. H. Hunt and S. J. Pam, 'Essex agriculture in the "golden age", 1850–73', *AgHR* 43 (1995), p. 170.

not afford it'.[60] So much had conditions altered that in-coming tenants were frequently able to demand wholesale expenditure, and it was at such junctures that some Essex landlords spent heavily on conversion to dairying. A cow house and improved water-supply were required to entice a suitable tenant into Fanton Hall Farm at North Benfleet, and a new dairy with standing for fifty cows was the entry-price demanded by an in-coming Orsett tenant.[61]

The overall picture is that investment was more restrained after the mid-eighties, particularly on smaller estates. But there was never in Essex anything approaching an investment moratorium of the kind described by Orwin, Perry and others. Whether sufficient was invested, and what proportion of expenditure was as well-tuned to requirements as that at Orsett and Fanton Hall, are questions more difficult to answer. Against the numerous claims that investment was insufficient, Cormac O'Grada, interestingly, has suggested that meagre returns may indicate landlords invested *too* liberally.[62] But it is perhaps unfair to assume that over-investment occurred whenever rent increases fell below the return on consuls. Landlords were aware of wider and more enduring priorities: they invested partly to uphold the value of their estates, to keep the land in order while awaiting better times, partly to enable tenants to make a living, and also, of course, to maintain their social status. Was investment mainly of the kind likely to have assisted agricultural adaptation? Considerable investment served either arable or livestock farming and much is recorded under such vague headings as 'improvements', 'making good', or 'drainage'.[63] But it is reasonably certain that investment in Essex farm building undermines claims that structural adjustment was held-back by landlords' reluctance to invest. Some such expenditure was on renovation, but most was for new construction: between 1875 and 1885 as much as 84 per cent of Essex lending by the Land Loans and Enfranchisement Company, and 73 per cent of that by the General Land Drainage Company, was for new buildings.[64] And where their purpose is recorded it most frequently indicates a greater commitment to livestock. Covered yards, cow stalls, and dairies featured prominently in a substantial building programme at Orsett in the later stages of depression, and considerable investment in dairying is evident also on the Thorndon estate, on the St Bartholomew's Hospital estates, and the Essex holdings of the Ecclesiastical Commissioners.[65] It was liberal spending of this kind, of course, that helped to attract migrant Scottish and west country farmers to Essex, among them the demanding tenants of Fanton Hall and Orsett mentioned earlier. Initially, before there were significant divergences in livestock and cereal prices, investment had been less clearly focussed upon livestock, but the strong impression is that by the mid-1880s a substantial part of investment, almost certainly the greater part, was to facilitate change in land-use, particularly to expand milk production.[66] Conversion to rough grazing, of course, did not require substantial

[60] H. F. Howard, *The finances of the college of St John the Evangelist, Cambridge, 1511–1926* (1935), pp. 230–1. For another example see BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, pp. 51–2.

[61] Church House Millbank, London, Ecclesiastical Commissioners MSS, files 46754, 46758; RHC, ESS 3/1/1, 3/2/1.

[62] O'Grada, 'British agriculture', p. 158; id., 'The landlord and agricultural transformation, 1870–1900: a comment', *AgHR* 27 (1979).

[63] Expenditure on drainage was beneficial to arable or pasture and well-drained arable land was more easily converted to pasture.

[64] PRO, MAF, 66/1–4.

[65] RHC, ESS 17/1, 17/3; Collins, *Orsett*, p. 42. ERO, D/DP A383–4; St Bartholomew's Hospital MSS, almoner's reports, E08/7; Church House, Ecclesiastical Commissioners MSS, files 46754, 50768.

[66] On livestock and cereal price divergence, see Hunt and Pam, 'Prices and structural response', p. 497.

investment, nor did continued cultivation of cereals on good corn land.[67] But substantial investment in cattle-housing, dairies, and water supply was necessary to facilitate the dairying expansion described earlier.

Rent adjustment, the most obvious assistance for hard-pressed tenants, was another traditional landlord responsibility. This aspect of their performance has also been criticized, particularly by Avner Offer: while the farmer's income vanished, he writes, 'rents held firm'.[68] In fact, neither Essex nor national rent evidence supports this interpretation: by and large landlords appear to have recognized their customary obligations.[69] How much tenants were assisted depended on local and individual circumstances, and because Essex tenants had particular need to look to their landlords for protection, their rents fell by more than the average. Between 1876–7 and 1907–8 they approximately halved, an estimate broadly compatible with F. M. L. Thompson's calculation of a 46.6 per cent fall between 1872–3 and 1910–11.[70] These figures indicate both substantial real falls in rent in the corn counties and that landlords bore some of the costs of depression. The more hard-pressed among Essex farmers were helped most: thus the greatest rent falls were on heavy clay-land too distant from transport for dairying. Low rent, of course, was one of the components of low-farming, and there are several reports of Essex farms let at nominal rents or rent-free.[71] Rent of good pasture and prime cereal-land fell by considerably less. On the Petre estate, for example, where heavy-clay rents were reduced by half or more between 1878 and 1906, that on the favoured Mountnessing Hall Farm fell by only 18 per cent.[72]

In the early years of depression contract rents in Essex did hold firm, just as Offer claims, but this is not evidence of landlords neglecting customary responsibilities. For a time both landlords and farmers expected the crisis to be transitory, thus needy tenants were granted short-term assistance in the form of temporary rent abatements and permission to accumulate arrears.[73] Permanent reductions followed, in many cases accompanied by a writing-off of arrears. There was to be a similar lag in rent adjustment when conditions improved: rents were still falling in 1899 and rose little before 1907. Claims that landlords were insensitive or exploitative in setting rents must be considered also within the context of supplementary assistance. Landlords might pay a tenant's tithe or poor rates, or provide help-in-kind such as the cattle-feed and artificial manures dispensed to 'weak but worth keeping' tenants on the Orsett estate.[74] Increased spending on repairs and maintenance, or on capital investment to reduce dependence on cereals, were other alternatives to rent cuts. Many of the Essex farms whose rents came closest to holding firm had been substantially improved. Such alternatives to rent reductions

[67] There is, of course, evidence of expenditure on arable machinery, but it accounted for only a modest part of total investment. Enthusiasm for steam-ploughing, never extensive, failed to outlast the 'golden age' and steam-threshers were commonly hired. Hunt and Pam, 'Essex agriculture', p. 169; BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, p. 57; J. H. Clapham, *An economic history of modern Britain* (3 vols, 1938), III, p. 88.

[68] Offer, *Agrarian interpretation*, p. 117; idem, 'Farm tenure', p. 5.

[69] On rent movements generally see *Agrarian History*, VII, pp. 212, 306–7, 745–8, 771.

[70] Pam, 'Essex agriculture', ch. 4; Thompson, 'Anatomy of English agriculture', p. 226.

[71] Ernle, *English farming*, p. 385; Gavin, *Ninety years*, p. 88; Haggard, *Rural England*, I, p. 441.

[72] ERO, Petre MSS, Thorndon estate accounts, 1878–9, 1906–7; tenant ledgers III, IV; D/DP, A359, 366, 367, 422.

[73] On the Thorndon estate arrears amounted to the equivalent of 14 per cent of gross rentals in 1883, despite earlier abatements. ERO, D/DP, A351–63, 380–425.

[74] ERO, Whitmore MSS, Drivers' report, p. 9. In 1891 landlords became legally liable for tithe payments.

represented not landlord avarice for, as O'Grada noted, safe government stock might have yielded better returns. Rather, they were alternative means of observing the social contract whereby landlords provided a cushion between tenants and hard times. Thus here too criticism of landlords appears to have been overdone. There were, certainly, a minority in Essex – the Ecclesiastical Commissioners, for example, and some small, impecunious landholders – who were tardy in granting rent reductions. But the more typical experience was that abatements and credit were quickly granted, significant reductions followed, assistance was directed towards the most needy, and very few tenants were evicted for rent arrears.[75] When hard times returned in the 1920s a new generation of owner-occupiers regretted they no longer had landlords to assist them and found banks far less accommodating.[76]

Another landlord responsibility was to ensure that the terms of leases did not obstruct agricultural adjustment, and here too their performance has been debated. There were contemporary complaints about the allegedly stultifying effects of restrictive covenants, of leases too short to encourage investment, and of uncertain compensation for improvements when tenants moved on: Kindleberger and Tracy have reiterated such charges more recently.[77] But most commentators suggest that obstructive lease requirements had long been widely ignored, that competent tenants enjoyed a high degree of customary security, and could make improvements with reasonable expectancy of compensation.[78] Increased concern to keep farms tenanted, and greater use of artificial fertilizers that facilitated off-farm sale of oats, hay, and straw, widened the disparity between formal lease-requirements and farming practice.[79] These generalizations certainly hold good for Essex. Covenants in leases were occasionally invoked to discipline or evict bad farmers, but restraints had been sufficiently relaxed for Druce in 1882 and Pringle, more emphatically, in 1893–4 to report that Essex tenants enjoyed 'freedom of cropping and cultivation'.[80] Guy's and St Bartholomew's Hospitals each made clear that cropping covenants were not binding upon tenants, and one Essex land-agent declared 'everybody in Essex is practically allowed to farm as he likes'.[81] Falling prices and falling rents, moreover, encouraged tenants to prefer short leases.[82] The considerable extension of low farming is, of course, further evidence of lease flexibility.

[75] Avner Offer's most robust claim, that rents 'held firm', is contradicted in his own accounts of reductions that were 'sluggish and slow', no greater than the fall in grain prices. Offer, *Agrarian interpretation*, pp. 114–17.

[76] R. Perren, *Agriculture in depression, 1870–1940* (1995), p. 45. Hall noted that owner-occupiers' mortgage payments equalled or exceeded what they would otherwise have paid in rent. D. Hall, *Pilgrimage of British farming, 1910–12* (1914), pp. 148, 434.

[77] W. E. Bear, *The British farmer and his competitors* (1888), p. 14; Kindleberger, *Economic growth*, pp. 246–7; M. Tracy, *Agriculture in western Europe: challenge and response, 1880–1980* (1980), p. 53.

[78] See, for example, O'Grada, 'British agriculture', pp. 157–8; F. M. L. Thompson, 'The second agricultural revolution, 1815–80', *EcHR* 21 (1968), p. 72; *Agrarian History*, VII, pp. 742, 794.

[79] Traditionally fodder crops were 're-cycled' to maintain soil fertility. The Agricultural Holding Act of 1883, providing compensation for unexhausted improvements, made compulsory what was already common practice.

[80] BPP, 1881, XV, *RC on the depressed condition of the agricultural interests*, p. 73; BPP, 1882, XV, idem., *Report by S. Druce on Essex*, p. 29; BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, p. 62; BPP, 1896, XVII, idem, p. 417.

[81] BPP, 1894, XVI, pt i, *RC on agricultural depression, minutes of evidence*, p. 392. For similar conclusions on tenurial arrangements elsewhere, see J. T. Coppock and T. W. Fletcher in Perry (ed.), *British agriculture*, pp. 60, 72, 95–6; S. Wade Martins and T. Williamson, 'The development of the lease and its role in agricultural improvement in East Anglia, 1660–1870', *AgHR* 46 (1998), pp. 140–1.

[82] On the Thorndon estate, for example, the tenant ledgers show that yearly agreements were preferred. ERO, Petre MSS, D/DP A366–8.

IV

In their management of investment, rents and leases, therefore, the landlords' performance, on the Essex evidence, was less abysmal than has often been suggested. In fact, in these respects their record was moderately impressive, quite possibly more impressive than that of landlords in the 'golden age'.[83] Like the farmers, and in association with them, they introduced significant, and appropriate, responses to changing market requirements and shouldered part of the costs of depression. Most could have echoed the Duke of Bedford's claim that 'none of the responsibility generally regarded as inseparable from the position of a great landowner had been evaded'.[84] But the challenges confronting English agriculture called for responses more innovative than those the Duke of Bedford had in mind or those that had sufficed in the 'golden age'. *Noblesse oblige* and fine tuning of investment, rents, and leases indicates successful management within the pre-existing institutional, economic, and cultural environment. Successful entrepreneurship required more than this. Here we return to the distinction between the responsibilities of tenant farmers and the more onerous responsibilities of landlords. It fell to landlords to grasp the nature of the crisis and formulate strategies for survival. This called for innovative thinking, for identification and exploitation of untried opportunities, the ability to recognize market and institutional constraints, and a willingness to remove them. In short the crisis demanded entrepreneurship in the full-Schumpeterian sense: it required a performance comparable with the heroic achievements of eighteenth-century 'agricultural revolution' landlords.[85] How close were late Victorian landlords to meeting these exacting requirements?

Essex provides considerable evidence of landlord resourcefulness in boosting non-agricultural incomes. The Whitmores (Orsett) built a small housing estate, sold or let land to various builders, manufacturers, and a railway company, and exploited chalk and brick-earth deposits.[86] Other estates quarried gravel, Lord Petre divided and rented his Ingatestone mansion, and John Wilkes let his to a preparatory school.[87] But initiatives of this kind, mainly by landlords able to exploit the ripple effects of London's expansion, are hardly relevant in the present context because they did little or nothing to advance agricultural efficiency. More pertinent, therefore, are the pioneering activities of Edward Strutt who from 1876 managed the Rayleigh estate (Terling) on behalf of his elder brother. When tenants quit he farmed the land himself, considerably expanded milk production, and applied detailed cost accounting to each farming activity. His advice was widely canvassed and in 1884 this consultancy role was extended when he joined a neighbour to establish the land and estate agency, Strutt and Parker.[88] Strutt is an exceptional case, but there is evidence of scattered entrepreneurial activity by other Essex landlords: Thomas Whitmore on the Orsett estate, for example, in 1887 commissioned a London company of proto-management consultants to compile a detailed report on the estate's condition and prospects, and in 1896 Francis Whitmore

[83] Hunt and Pam, 'Essex agriculture'.

[84] Duke of Bedford, *The story of a great agricultural estate* (1897), p. 2.

[85] S. Pollard, 'Entrepreneurship, 1870–1914', in Floud and McCloskey (eds.), *Economic history of Britain* (1994), II, pp. 63–4.

[86] ERO, Whitmore MSS, Drivers' report, pp. 63–7; RHC, ESS 17/9 series 215, 222, 228–9, 256.

[87] ERO, Petre MSS, Thorndon account, D/DP A439 (letter from solicitors, 1890); J. Robin, *Elmdon: Continuity and change in a north-west Essex village, 1861–1964* (1980), p. 61; ERO, D/DBe, E55, 57.

[88] Gavin, *Ninety years*, chs 5, 6; Perry, *British farming*, p. 116. During the First World War Edward Strutt became chief agriculture advisor to the Ministry of Agriculture.

established a home farm with model diary and pioneer milking machines. At Tiptree there was Wilkin with his fruit farming and jam factory, and it was advertising vacant farms and low rents in far-flung journals by East Anglian landlords that initially attracted Scots and other migrant farmers.[89]

Of course, landlords can also claim at least part of the credit for encouraging, or permitting, 'low farming'. However, the positive contribution of low farming does not preclude the possibility that higher-yielding alternatives to cereals were under-exploited. Here we return to questions raised earlier. Milk output expanded impressively, but why did English agriculture not satisfy more of the demand for fruit and vegetables, eggs and poultry, butter, cheese, and bacon? And do these omissions indicate entrepreneurial failure? Pig numbers failed to rise and expansion in fruit, vegetables, eggs and poultry was from a low base to only secondary importance. This despite favourable price trends, growing urban populations with rising real income, falling animal-feed prices and, in the case of Essex, proximity to London.[90] Keeping pigs or hens was considered peripheral to cereals, milk, and beef: little serious attention was given to breeding, feeding, quality control, or marketing.[91] Pigs had no clear role in the mixed farming regime and hen-keeping, like horticulture, was 'lowly womanly work'. Few Essex farms kept more hens than were needed for family consumption and wives' pin-money.[92] Not surprisingly, in their claims that British agriculture 'failed to adapt', Kindleberger and Offer highlight what they claim was the unnecessary neglect of these growing, high-value, markets.[93] How much of this demand could, and should, have been met from British farms is an open question. Michael Thompson asks whether it was not sensible to leave eggs, bacon, butter, and cheese to overseas suppliers, given local advantages in supplying fresh milk and meat.[94] He has a point, but milk production was not practicable everywhere, and the fortunes and prospects of milk and meat producers were hardly sufficient to excuse neglect of high-potential alternatives. With hindsight it is clear that these alternatives were held back by institutional and cultural constraints, as Kindleberger and Offer suggest. If landlords had been more alert to such opportunities, and more entrepreneurial in removing obstacles to their exploitation, overseas suppliers would have taken less of the market and low farming, with its associated low land-yields, would have featured less prominently among the alternatives to cereals. Moreover, some of the obstacles to the expansion of market gardening, fruit, pigs, and poultry also impeded dairying.

[89] BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, p. 43; Collins, *Orsett*, pp. 43–4.

[90] Egg consumption, for example, is estimated to have doubled in the fifteen years after 1880, with importers accounting for half of sales by the 1890s. The poorer classes were beginning to consume fresh fruit and vegetables, while the more affluent were becoming increasingly aware of their nutritional value: by 1889 London had 29 vegetarian restaurants. In Joan Thirsk's work, and elsewhere, there are strong suggestions that expansion in these 'alternative' agricultural activities accelerated after the 1890s. Thirsk, *Alternative agriculture*, pp. 174–90, 192, 195, 201–2; *Agrarian History*, VII, pp. 192, 490; Perry, *British farming*, p. 48.

[91] Thirsk, *Alternative agriculture*, p. 196; *Agrarian History*, VII, pp. 487, 490, 560–1; E. Brown, 'The British egg supply', *JRASE* 11 (1900), pp. 619–20, 637. Fancy breeding of both pigs and hens had a considerable following, but the focus was upon appearance, weight, and show-point novelty rather than commercial considerations.

[92] BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, p. 63 and app. C; Thirsk, *Alternative agriculture*, pp. 194–5; *Agrarian History*, VII, p. 1376.

[93] Kindleberger, *Economic growth*, pp. 209, 239–243; Offer, *Agrarian interpretation*, p. 94.

[94] F. M. L. Thompson, 'Agriculture and economic growth in Britain', in P. Mathias and J. A. Davis (eds.), *Agriculture and industrialization* (1996), pp. 43, 53, and introduction, p. 5.

Farm size, and the distinction between hired labour and family labour, are important in understanding the limits to agricultural adjustment. While some vegetables and orchard fruits were suited to large farms, there were fewer economies of scale in market gardening and soft fruit production. These, and poultry keeping, were labour-intensive, high-yield, pursuits requiring hard work and close attention. Most farms in the south-east were over-large for farming of this type and were worked by hired labourers who shared their employers' dismissive attitude towards hens and horticulture. Moreover, rising wages discouraged labour-intensive activities of any kind on larger farms. Family-run smallholdings, far more common on the continent, were largely free of such impediments, and thus better-placed to exploit several of the more promising alternatives to cereals.[95] The typical Essex tenant farmer, with a sizeable holding and rising labour costs, turned instead to milk production if he could and to low farming where dairying was not viable.[96] In short, the celebrated tripartite system of landlords, large rented farms, and hired labour – long regarded as the backbone of English agriculture – had become, in certain respects, a barrier to change. Before the mid-eighteenth century, when cereals were less important and holdings smaller, farmers had moved more easily between alternative produce.[97] By the late-nineteenth century, however, in the arable south, cereals were considered the farming mainstay, and although there was impressive expansion of fresh milk output, institutional constraints discouraged the production of vegetables, fruit, poultry and eggs, and offered no particular incentives to pigs, butter, or cheese. Farmers' leases were no impediment to farming as they saw fit, and structural adjustment may have been close to optimal within the existing tenurial system, but options were restricted by the size of holdings. The tripartite system had become an agrarian manifestation of Olson's institutional sclerosis.[98]

Here then the landlords' performance fell short of the entrepreneurial ideal. There were opportunities contingent upon an expansion of smallholdings, and it was for landlords to identify and facilitate such opportunities in a manner analogous to landlords' successful expansion of capitalist farming to exploit rising cereal prices in the eighteenth century. Yet on this occasion little was done, and most landlords appear to have been hardly aware of the possibilities. Some vacant Essex farms were divided into smaller units for sale or rent, but the broad structure of land-owning was little-changed throughout the depression, with holdings below 50 acres accounting for around 8 per cent of acreage.[99] There was, of course, a national smallholdings movement, but it focussed mainly on social and political issues such as attempts to stem the rural exodus and how to diminish the landlords' political influence and 'land-monopoly', a campaign likely to reinforce their disinclination to question the *status quo*. Moreover, although existing smallholdings were easily let, and sold, the break-up of larger farms with their inherited boundaries and lay-outs entailed considerable expenditure on cottages, roads, hedging, and piped-water and possibly diminished the 'positional income' derived from traditional landed

[95] On the economics of smallholdings, see Thirsk, *Alternative agriculture*, chs 7, 8; *Agrarian History*, VII, pp. 181–3, 1836–7; H. Levy, *Large and small holdings* (1911), ch. 9.

[96] Almost four-fifths of eastern counties farms were of 100 acres or above, *Agrarian History*, VII, p. 180.

[97] Thirsk, *Alternative agriculture*, p. 147.

[98] M. Olson, *The rise and decline of nations* (1982).

[99] Cereal farms near Basildon were converted into plots for poultry rearing. BPP, 1894, XVI, pt iii, *RC on agricultural depression, minutes of evidence*, pp. 32–4. For other Essex examples see ERO, D/DP, A365–6; Church House, Ecclesiastical Commissioners MSS, file 50768. On holding size see BPP, *Agricultural Returns*. In Essex, and in England as a whole, the number of holdings below 50 acres fell between 1875 and 1895. *Agrarian History*, VII, pp. 1808, 1813.

estates.[100] But it is unlikely that many landlords gave serious consideration to these costs and benefits. Even fewer gave thought to how smallholdings were financed in Europe.

An associated institutional characteristic that impeded structural change in the south-east was the near-absence of agricultural co-operation. Co-operation had the potential to assist all branches of agriculture, but pigs, poultry, market gardening, and dairying might have benefited particularly. Co-operation was a means to complement the production advantage of smallholdings with cost-reducing external economies and enhanced influence over market forces.[101] Particularly important were scale economies in marketing: in grading, packing, advertizing, distribution, and transport. If, as frequently alleged, the substantial differential between farm-gate and retail prices reflected the ability of London wholesalers and other oligopolistic intermediaries to fix prices, the countervailing influence of co-operation had the potential to increase farm receipts, reduce retail prices, and take sales from foreign-suppliers.[102] There were also considerable potential economies in food processing, in the shared purchase of capital equipment that individual farmers could neither afford nor fully utilize – anything from mechanical cream separators to prize bulls[103] – and in quality control of dairy products.[104] Imports of Danish and Dutch butter and cheese, for example, flourished not least because both wholesalers and consumers preferred food of consistent quality.[105]

Dairying, which was probably expanding as fast as existing marketing arrangements permitted, might have benefited particularly from co-operation. Intermittent over-supply and low prices – the inevitable consequences of unregulated expansion, the spring milk-glut, a highly-perishable product, and numerous small producers – set limits to expansion. If farmers had co-operated to share the costs of processing milk into butter, cheese, condensed milk, and milk puddings the periodic gluts might have been siphoned from the fresh-milk market. Likewise, with the help of co-operation, many farms that were ill-placed to supply fresh milk might have produced cheese and butter as an alternative to rough grazing. Competition from imports was formidable, of course, but butter and cheese prices held-up better than cereal prices

[100] BPP, 1896, XVII, *RC on agricultural depression*, p. 354; Thirsk, *Alternative agriculture*, p. 208; Levy, *Large and small holdings*, pp. 101–2. Estate settlements might restrict land sales, although not the creation of rented smallholdings.

[101] The absence of co-operation, no doubt, helps to explain why poultry, eggs, fruit, vegetable and bacon production were of secondary importance even in Wales, the west country, and other places where family farms were not unusual. It also helps to explain why better-organized overseas suppliers were able to capture half of the market for eggs, despite the obvious advantages home producers enjoyed in supplying perishable and fragile produce.

[102] On those themes see *Essex Weekly News*, 29 Apr. 1892; *Agricultural Gazette*, 30 May, 28 June 1887; P. A. Graham, *The revival of English agriculture* (1899), pp. 24–5; Haggard, *Rural England*, I, pp. 471, 477; Bear, *British farmer*, p. 120; I. Henriksen, 'Avoiding lock-in: co-operative creameries in Denmark, 1882–1903', *European Rev. of Economic History* 3 (1999), p. 66; E. A. Pratt, *The transition in agriculture* (1906), pp. 17–18, 29–30, 166–7, 176–7; id., *Agricultural organization* (1912), p. 251; BPP, 1923, IX, *Interim report on milk and milk products*, p. 85.

[103] The steam-driven centrifugal cream separator required milk from 'at least 300 to 400 cows' to operate at minimum cost; ibid. p. 61. See also H. M. Jenkins, 'Report on the American cheese factory system', *JRASE* 31 (1870), p. 174.

[104] E. J. T. Collins (personal communication) emphasizes this point. Quality control was a long-standing weakness; importers, rather than home producers, set the industry standard. See also BPP, 1923, IX, *Agricultural tribunal of investigation, interim report*, p. 8.

[105] E. Bartrum, *The present distress: especially in Essex* (1894), p. 7. See also Bear, *British farmer*, p. 104; *Agrarian History*, VII, pp. 199, 990; and BPP, 1888, XXXII, *Report on agricultural dairy schools*, p. 163, on the unreliability of Essex butter.

(Table 1 above) and co-operation would have reduced costs, improved product-quality, and quite likely raised farmers' share of receipts.[106] Although butter imports doubled in ten years after 1886, very little was done to explore the economics and practicabilities of large-scale co-operative manufacture of the kind being established in Denmark and Holland.[107] Moreover, the milk by-products from co-operative creameries and cheese factories might have been fed to pigs and hens and thus encouraged Essex farmers to regard these branches of farming as more than sidelines, particularly as co-operation was likely also to bring considerable economies in bacon-making, marketing, and bulk-feed purchase.

Why was there still so little co-operation in England after its success in Denmark and elsewhere had been demonstrated? In large part because traditional tripartite farming, on large farms and focussing upon cereals and beef, had less to gain from co-operation than certain other branches of farming. Substantial, individualistic, tenant farmers, backed by powerful landlords, regarded co-operation as a collective-action response appropriate for vulnerable owner-occupiers: they did not consider themselves to be peasants and were not disposed to embrace peasant remedies.[108] Put simply, the absence of co-operation owed much to path-dependency: the inherited institutional and cultural environment – so different from that in Denmark – was hardly more conducive to co-operation than it was to smallholdings. Traditional landlord responsibilities were part of this unpropitious environment: rent reductions and increased landlord investment, not commonly available to the small farmers of Denmark or Holland, were alternatives to co-operation and agricultural credit banks. And cereal farmers, because they were particularly distressed, received most landlord assistance, extending cereal viability to ever-lower prices: landlords might have found ways to assist tenants without also discouraging diversification and co-operation. There were, of course, other obstacles to co-operation in England – some of which we will consider subsequently – besides the tripartite system and lack of enterprise. Even so, co-operation almost certainly offered more opportunities than Perren has suggested, perhaps most of all for milk producers, and these opportunities were neglected.

Landlords must bear the greater part of the blame for this oversight. The successful retail co-operative movement might have provided a lead but it was an urban consumers' association, concerned first to safeguard members' interests by buying food of acceptable and consistent quality in the cheapest market. While farmers, especially smallholders, stood to gain most from co-operation, its establishment was a formidable and risky undertaking requiring more initial capital, influence, and enterprise, than they could be expected to assemble. But substantial landlords had the means, as well as the responsibility, to take the initiative: some of them could have begun co-operation among their own deferential tenants, particularly if they had created smallholdings at the same time. Two Essex landlords, Francis Whitmore (Orsett) and Edward Strutt (Terling), were among the handful that attempted such initiatives, but not until the worst of the depression was over, and without marked success or much support from other landlords.[109] Another way in which entrepreneurial landlords might have promoted co-operation

[106] R. Hunter Pringle commented favourably on the prospects for Essex butter and cheese-making. BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, p. 131.

[107] Perry, *British farming*, p. 115.

[108] On this theme see, for example, *Agrarian History*, VII, pp. 196, 494, 672, 689.

[109] Recently-settled Scots dairy farmers did more than local landlords to encourage co-operation. For details see Pam, 'Essex agriculture', ch. 5.

was by mobilizing government support. The Danish government encouraged co-operation and it was government that eventually, in the 1930s, introduced widespread co-operative marketing to British agriculture.[110] Late-Victorian governments, of course, were not eager to take economic initiatives of any kind; *laissez faire* has an important place among the institutional weaknesses that Elbaum and Lazonick emphasize in explaining the lack-lustre response to Britain's wider economic difficulties at this time.[111] But determined lobbying by powerful landlords might have produced rather more government support.[112]

Much the same might be said with regard to government assistance for training, advisory services, and research of the kind that encouraged the transformation of Danish agriculture.[113] Education and training had an obvious role in persuading south-eastern agriculturalists to abandon cereals; very few farmers had any notion of how butter, cheese, eggs, and bacon were produced in Denmark and competent dairy labour of any kind was scarce in Essex.[114] Several reports suggest also that Essex farmers would have benefited from technical instruction in grassland management, particularly the use of temporary grass in rotations.[115] But government did very little and what was done – rudimentary provision of lectures and technical instruction by the County Councils after 1889 – owed little to pressure from landlords.[116] Nor did Essex landlords do much on their own account. There is an obvious contrast here with the more-enlightened of their eighteenth-century predecessors who considered identifying, testing, and publicizing innovations among their responsibilities. Very few landlords maintained model farms where new methods and unfamiliar branches of agriculture might have been demonstrated, and most were reluctant to farm themselves. The Whitmores and Edward Strutt (above) were exceptions of course, but they were not typical. It is indicative that although Edward Strutt's elder brother, the distinguished scientist Lord Rayleigh (1842–1919), conducted some of his early experiments at Terling, he appears to have manifested absolutely no interest in the application of science to his estate.[117]

In several respects therefore landlords failed to formulate satisfactory responses to depression. For the most part – as their record on rents, leases, and investment demonstrates – they were competent and socially-responsible managers. But the depression had brought new challenges

[110] On the Danish government see, BPP, 1893–4, LXXXIX, *Reports on dairy farming in Denmark, Sweden, and Germany*; E. E. Williams, *The foreigner in the farmyard* (1897), pp. 44, 52, 55; Tracy, *Challenge and response*, ch. 5.

[111] B. Elbaum and W. Lazonick, 'The decline of the British economy: an institutional perspective', *JEcH* 44 (1984).

[112] On landowners' poor performance as politicians, see *Agrarian History*, VII, pp. 328, 331.

[113] J. D. Sykes, 'Agriculture and science' in G. E. Mingay (ed.), *The Victorian countryside* (2 vols, 1981), I, pp. 260–72; Tracy, *Challenge and response*, pp. 26, 108, 116; BPP, 1893–4, LXXXIX, *Reports on dairy farming in Denmark, Sweden and Germany*; Williams, *Foreigner in the farmyard*, pp. 52, 55; H. Rider Haggard, *Rural Denmark and its lessons* (1913), p. 11.

[114] Hunt and Pam, 'Managerial failure?', p. 261; When A. C. Wilkin began fruit farming at Tiptree, labourers objected to 'that funny work'; Essex Agricultural Society, *Diamond jubilee show programme, 1852–1922* (Colchester, 1922), p. 79.

[115] 'Something new to Essex men and many of them are rather in the dark'. BPP, 1894, XVI, pt i, *RC on agricultural depression, Report on Essex*, pp. 61, 70, 131; BPP, 1896, XVII, *minutes of evidence*, pp. 611, 614.

[116] On the unsatisfactory state of agricultural science and education at this time, see *Agrarian History*, VII, pp. 138–9, 606, 629, 689–90, 2149.

[117] This, at least, is the impression conveyed in Gavin's eulogistic account. Lord Rayleigh was later Professor of Experimental Physics at Cambridge and a Nobel prize-winner. Gavin, *Ninety years*, ch. 2; *Agrarian History*, VII, p. 774.

requiring more than merely managerial responses: there was insufficient recognition that training and science were being neglected, that there were worthwhile alternatives to cereals besides milk and rough grazing, and that the traditional estate system was an obstacle to their adoption. Re-shaping estates to dissipate incumbent inertia and exploit new opportunities would have entailed a measure of full-Schumpeterian 'creative destruction'. On the continent, and in Ireland, where small holdings were commonplace when the depression began, and co-operation a logical consequence, the entrepreneurial challenge, and start-up costs, were considerably less formidable. But change of this kind was required in England. It was not initiated, and in this respect the landlords failed.

V

How important were these landlord failures? How much greater would output and growth rates have been had their responses to the crisis qualified as fully-Schumpeterian? These questions are among those highlighted in the conclusion to Volume VII of the *Agrarian History*.[118] They cannot be answered precisely: it is impossible, for example, to calculate the costs of neglecting science or landowners' poor parliamentary performance. But some generalizations are possible. One is that while it is undeniable that the tripartite system hindered change, its shortcomings are easily exaggerated and are almost certainly exaggerated in Avner Offer's account. His claims that rents held firm while investment fell are contentious, and the conclusions of his comparisons between family farming and the tripartite system would have been far less flattering to the former if the English system had been compared with family farming in France or Ireland rather than that on the American prairies. Others might also attribute higher costs to the family farmer's compulsion 'to exploit his own labour and that of his family'.[119] If the English system denied agriculturalists and consumers 'the full benefits of economic masochism', if continental farmers indulged in 'increased self-exploitation' while English labourers' real wages advanced, there was surely compensation in such deprivation.[120] Moreover, American family farmers exploited land as well as labour: a prairie equivalent of the gentleman-rentier class that Offer vilifies, with their tiresome leases and regard for the long-term integrity of the rural environment, might well have prevented so much good prairie-land becoming dustbowls.

Secondly, there were distinct limits to how much English cereal land and rough grazing might have been allocated instead to high-yield alternatives. Much of the surviving cereal acreage was prime, viable, arable land and neither co-operation nor small holdings would have justified its wholesale conversion to dairying or market gardening. In any event, much land was unsuitable for such alternatives. Market gardening required light, well-drained, highly-fertile soil and ready access to bulky town manure and urban consumers.[121] Much Essex land incapable of producing cereals or liquid milk profitably was, by its nature or location, not well-suited for intensive

[118] Ibid., p. 2152.

[119] Offer, *Agrarian interpretation*, p. 112. On the living standards and working hours of fenland smallholders, see *Agrarian History*, VII, p. 785.

[120] J. L. van Zanden, 'The first green revolution: the growth of production and productivity in European agriculture, 1870–1914', *EcHR* 44 (1991), p. 236; Offer, *Agrarian interpretation*, p. 112.

[121] Thirsk, *Alternative agriculture*, ch 7; Collins, *Orsett*, p. 67; 'market gardeners give the Essex Clays a wide berth', *Essex Standard*, 23 Jan. 1886.

family farming, and transport restraints were a greater handicap in counties more distant from major markets.[122] The threat of market saturation was another constraint. Obviously there was considerable scope for import-substitution, but any substantial increase in the domestic output of vegetables, eggs, etc. would have reduced their prices and increased the relative attractiveness of cereals and beef. The 1890s nascent enthusiasm for market gardening was soon accompanied by complaints of falling returns: smallholders in the Isle of Axholme found it hard 'to make ends meet', flower-growers described their market as 'pretty nearly overdone', and glasshouse-gardeners bemoaned falling tomato and cucumber prices.[123] Tomatoes and cucumbers, watercress, and bee-keeping, are some examples of suggested remedies for depression that would have triggered market-saturation if expanded much beyond the acreage of a few cereal farms.[124] If the Essex total acreage under market gardens, orchards, and soft fruit in 1896 had been expanded five-fold, it still would have accounted for no more than 5 per cent of Essex farmland and for under half of the post-1870 fall in wheat acreage. In England and Wales fruit, vegetables, and poultry occupied under 2 per cent of farmland in the 1890s when about half of eggs and poultry-meat, and well over half of fruit and vegetables, were home-produced.[125] Imports of bacon, ham, butter, and cheese were then worth the equivalent of about 17 per cent of UK farm output.[126] Clearly, extended family-farming and co-operation might have achieved major import-substitution, but even maximum import-substitution would have left low farming as a rational choice on a considerable acreage where neither cereals nor fresh-milk were viable. There were particular constraints too on the role of co-operation in England. Near-by markets and well-established distribution networks made it unlikely that even outstanding entrepreneurship could have promoted co-operation to a level approaching its importance in Denmark: even in Denmark the supply of liquid milk to the larger towns remained in private hands.[127] Whether more smallholdings and co-operation would have significantly improved total factor productivity, as well as total output, is not at all certain because greater output per acre required intensive investment and might be accompanied by lower output per worker: family farming, that is, shared some of the characteristics of mid-Victorian high farming.[128]

VI

'The usual argument', wrote F. M. L. Thompson, 'is that the response of British agriculture to the flood of imports was at best inadequate, and in most cases supine'.[129] He went on to dispute

[122] P. Atkins, 'Production and marketing of fruit and vegetables, 1850–1950', in D. J. Oddy and D. S. Miller (eds), *Diet and health in modern Britain* (1985), pp. 107–8. Many small farmers, moreover, supplemented agricultural income by carting, horse-dealing, and other casual employment of a kind most available near to towns.

[123] Thirsk, *Alternative agriculture*, p. 183; W. E. Bear, 'Advantages of agricultural production', *JRASE* 5 (1894), p. 262; Rider Haggard, *Rural England*, I, p. 470.

[124] 'If some individual is fortunate enough ... to make a large profit on a very few acres of some little-grown crop, it is quoted in almost every newspaper ... as the new panacea for agricultural depression'. W. J. Malden, 'Recent changes in farm practices', *JRASE* 7 (1896), p. 37. For other examples, see *Essex Standard*, 1 Oct. 1887, 20 Apr. 1895.

[125] *Agrarian History*, VII, pp. 206, 225.

[126] Ibid., pp. 263, 2113.

[127] Henrikson, 'Co-operative creameries', p. 57.

[128] *Agrarian History*, VII, pp. 183, 787, 977; A. S. Milward and S. B. Saul, *The development of the economies of continental Europe, 1850–1914* (1977), p. 148; O'Grada, 'British agriculture', p. 159, gives a different view.

[129] Thompson, 'Agriculture and economic growth in Britain', p. 43.

this interpretation. The main conclusion of the present article also is that agriculture, considered as a whole, did not fail; responses to depression were more impressive than the 'usual argument' alleges. Without question, opportunities were missed: but there was also substantial, and successful, adaptation. There was some entrepreneurial failure, but also considerable managerial success. The farmers' performance, on the Essex evidence, was decidedly impressive. They managed a substantial reduction in the cereal acreage, a commensurate expansion in milk production, and other forms of redeployment that subtly reflected changing opportunities. That they did not entirely abandon wheat, nor dedicate themselves exclusively to milk and meat, is not indicative of inertia. There were limits to the profitable expansion of milk and meat and the remaining Essex cereal acreage produced acceptable returns.

Landlords too were competent managers, certainly no less competent than their 'golden age' counterparts. Investment was maintained and redirected, rents and leases adjusted appropriately. But in their more-demanding entrepreneurial role, landlords, unquestionably, were less successful. Their performance was probably not worse than that of British industrialists at this time, but they too had 'lost much of the drive and dynamism' of their eighteenth-century predecessors.[130] They failed to provide adequate leadership, to raise their performance in response to new challenges. Probably their greatest shortcoming was failure to sponsor smallholdings and co-operation. Denmark and other countries demonstrated the possibilities, but the existing tripartite system impeded radical innovation. Thus responses to depression were limited to the most that could be expected from competent, but individualistic, tenants on farms too large to exploit certain market opportunities. Landlords might be criticized also for doing so little to demonstrate and encourage best-practice techniques, for their indifference to research and technical training.

However, it was argued above that the cost of these missed opportunities was perhaps less than initial appraisal might suggest. The onset of global competition made pressure on agricultural incomes inevitable no matter how innovative the response: there were no easy solutions, 'no one panacea'.[131] Opportunities in dairying, poultry and market gardening were restricted by the need for suitable soil and market accessibility, and by the threat of market saturation. Transforming all of arable England into a patchwork of market gardens and peasant dairy farms would have been neither profitable nor practicable; in many places low farming was the obvious, and rational, alternative. Thus in different ways, and different places, low-farming on existing holdings and intensive farming on smallholdings were equally sensible resorts when 'high farming' no longer paid. Clearly, some land-intensive opportunities were missed, but accounts that portray low farming as a regrettable bolt-hole for arable farmers too lethargic to explore higher-yielding alternatives, and those that judge agriculture by its modest output growth, are both misconstrued and unfair. Falling farm prices, rising labour costs, and falling rents constituted a compelling case for strategies that favoured increasing labour-productivity over higher land yields. For the same reasons it would be mistaken to interpret the lowly output-performance of erstwhile corn counties as evidence of less-successful adaptation than that achieved in counties that felt less pressure to adopt low farming.

While future assessment of total factor productivity is likely to present a less despondent view

[130] Aldcroft, 'The entrepreneur', p. 114.

[131] *Agrarian History*, VII, p. 207.

of the agricultural performance, the perception that sections of farming were 'depressed' is likely to persist. At times, especially early in the depression, farmers suffered particularly; later the landlords probably suffered more.[132] But prices, rents, and land values each fell and there can be no denying the contrast with the preceding 'golden age' or the widening gap between farm and non-farm incomes. Even so, the evidence from 'worst hit' Essex indicates that conditions in the south and east were less dire than many accounts suggest. Agriculture was not 'devastated', nor were 'most farmers on the verge of ruin'; very little land was ever 'abandoned', the remaining cereal acreage was not cultivated at a loss, and rough grazing was by no means an 'admission of failure'. Disaster was averted by cost cutting and considerable redeployment. Moreover, the production of milk and quality meat were decidedly more risky undertakings than Fletcher and Kindleberger supposed. Thus the depression, overall, was both less severe than has been understood and less confined to the arable south and east.

Finally, and returning to the broader debate on Britain's relative economic decline, this survey suggests several similarities in the performance of industry and agriculture. Much of what Elbaum and Lazonick have said of the absence of corporate economies in British industry applies also to agriculture, particularly with regard to education and training, research and development, market control, and scale economies in product processing and marketing.[133] The stultifying influence of the tripartite system is clearly analogous to that of those numerous inherited institutional rigidities that impeded change in British industry, commerce, and government. Moreover, agriculture, like industry, was characterized by a mix of managerial success and entrepreneurial failure: McCloskey, Sandberg and others have succeeded in establishing that many industrialists behaved rationally, but they cannot claim to have demonstrated entrepreneurial flair. Rather, they have demonstrated that much of industry was competently managed at a time when market forces conspired to make Schumpetarian entrepreneurship both more necessary and more elusive. Whether agriculturalists or industrialists were the more reprehensible remains an open question. Avner Offer inclines to regard agriculture as the weaker sector: in his account it 'led the vanguard of economic retardation and decline', and adapted less-successfully than agriculture elsewhere, 'only Britain retrenched so completely'.[134] However, he underestimates both the landlords' performance as managers and the positive aspects of low-farming. While the contrast with Denmark unquestionably supports his case, English agriculture emerges far more favourably from other comparisons. The French wheat acreage, for example, was more than four times that in Britain in 1873 and barely changed over the depression. In Germany too the retreat from wheat and the re-deployment of farm labour to higher-productivity occupations occurred less rapidly than in Britain, while German consumers were denied much of the benefit of cheap imported foodstuffs.[135] There were few British industries whose performance at this time compared so impressively against that of their German counterparts.

[132] Ibid., p. 277.

[133] Elbaum and Lazonick, 'Decline of the British economy'.

[134] Offer, *Agrarian interpretation*, p. 95.

[135] Tracy, *Challenge and response*, pp. 77–8, 102–3, 105; id., *Agriculture in western Europe: crisis and adaptation since 1880* (1964), pp. 51, 76, 103; B. R. Mitchell, *European historical statistics, 1750–1970* (1975), pp. 203, 209; Milward and Saul, *Economies of Continental Europe*, pp. 53–5, 104–7.

Arterial drainage in inter-war England: the legislative perspective*

by John Sheail

Abstract

The Land Drainage Act of 1930 became the benchmark of twentieth-century agricultural-drainage legislation. Its purpose was to simplify and update drainage legislation enacted since the sixteenth century and to reorganize the maintenance and improvement of arterial drainage on a catchment-wide basis. The paper reconstructs the five stages by which such a fundamental overhaul was perceived to be necessary and implemented. The bitter controversy as to the funding of the major improvements to the estuary and tidal length of the River Great Ouse had a considerable bearing on the timing and content of the Bill. The immediate and longer-term significance of the Act is discussed, both in respect of the wider management of watercourses and the potential for agricultural improvement of the adjacent lands.

In an earlier paper published in the *Review*, John Bowers highlighted the endeavours of the inter-war Ministry of Agriculture to instigate improvements to arterial drainage.[1] Such schemes were a prerequisite to the under-drainage and ditching works intended to raise the productivity of individual estates and holdings. But whilst holding that those benefiting most directly from any local improvement should provide the necessary investment, the Ministry believed the State might contribute technical expertise and Exchequer aid in carrying out arterial works. Not only might this stimulate the leading agriculturalists of the affected localities into planning and organising such an infrastructure, but the requisite Drainage Orders invariably required much explanation and advocacy among the other interests likely to be affected within the river catchment and local authority. As the authors of a guide to the Land Drainage Act of 1930 conceded, there were few issues of such national importance that left 'the general mass of the public so unmoved as that of land drainage'.[2]

The present paper focuses on the controversies that caused ministers and officials, and their 'expert' advisers, to accord such priority to arterial drainage, as both to capitalize upon parliamentary and sectoral support, and to overcome the opposition encountered from those quarters. Although national in its scale and purpose, such advocacy on the part of the Ministry was informed and considerably modified by the insights and experience gained from such

* The author is grateful for the guidance of the anonymous referees, and for the assistance given by the Cambridge University Library, Public Record Office and the Bedfordshire and Cambridgeshire Record Offices. The figure was prepared by Julie Gaunt.

[1] J. Bowers, 'Inter-war land drainage and policy in England and Wales', *AgHR* 46 (1998), pp. 64–80.

[2] A. Dobson and H. Hull, *The Land Drainage Act 1930* (1931). Dobson was an Assistant Secretary, and Hull a Junior Counsel, to the Ministry of Agriculture and Fisheries.

individual river catchments as that of the Great Ouse. The paper reconstructs the circumstances in which the failure of a piecemeal approach to securing the requisite administrative framework forced a considerably more comprehensive approach to be adopted in what became the Land Drainage Act of 1930. Rather than being allowed to develop organically, the Ministry itself was called upon to define and impose, as an integral part of the Act, a catchment-wide basis for the execution of such works across the whole country. However inauspicious the times, in terms of political and economic turmoil, a handbook published in 1936 boasted a new beginning. Those parts of the existing drainage law, as remained applicable to modern conditions, had been both strengthened and extended.[3]

I

An estimated 4.4 million acres of English farmland depended for their fertility on arterial drainage, of which 1.8 million acres were in pressing need of drainage works. No single landowner could achieve the full potential of such works: there had to be corporate effort.[4] The General Sewers Act of 1531, the first of some 16 public statutes, had provided the framework for the oldest of the three forms of surviving drainage authority, the Commission of Sewers. By 1930, there were 49 such bodies. A further 198 authorities had been established by Private Acts, of which the earliest and most famous was the Bedford Level Corporation in the East Anglian Fens. The third group of drainage authorities comprised 114 elective boards created under Enclosure Awards and, since the Land Drainage Act of 1861 (24 & 25 Victoria, c. 133), by the Board of Agriculture.[5]

The establishment of further elective boards had been severely curtailed by the depressed state of arable farming from the late 1870s onwards, and by 'the somewhat cumbersome proceedings that had to be followed'. The consent of the owners of two-thirds of the land was required before a Provisional Order, drawn up by the President of the Board of Agriculture on behalf of the petitioning bodies, could be confirmed by parliament. A Select Committee of the House of Lords had called, in 1877, for unified bodies to manage the drainage of entire catchments. A Rivers Conservancy Bill of 1879 had sought to implement such a concept, with the lowland, midland and upland parts being rated according to the degree of benefit derived from the protective works. The Bill and later measures failed, largely because of the opposition of the 'midlanders' who, next to the 'lowlanders' would have paid the highest rates.[6]

The urgent need to raise food production during the Great War highlighted the decayed state of many drains. A sudden influx of prisoners of war, shortly before the Armistice, provided outstanding opportunity to repair the neglect. Some 400,000 acres of farmland in England and Wales obtained some benefit. Yet even where full advantage was taken, the Food Production Department and county War Agricultural Executive Committees were appalled at the lack of permanent machinery to maintain, let alone advance, such improvements. Following a wartime

[3] Ministry of Agriculture and Fisheries, *The Land Drainage Act 1930. Handbook* (1936).

[4] F. L. C. Floud, *The Ministry of Agriculture and Fisheries* (1927), pp. 255–61.

[5] Parliamentary Papers (PP), 1927, VI, *Report of the Royal Commission on Land Drainage in England and Wales*, (1927), pp. 7–14.

[6] PP, 1877, X, House of Lords Select Committee, *Commissioners of Sewers and Conservancy Drainage and River Navigation Boards.*

measure of November 1914 (5 George V, c. 4), a Land Drainage Act of 1918 (8 and 9 George V, c. 12) enabled the Board of Agriculture, or a county council (or county borough council), to apply for powers to form, merge or alter the boundaries of an elective drainage body. Most importantly, a Provisional Order might be confirmed if not more than one-third of landowners objected.[7]

A first substantial advance had been made. Some 50 new drainage districts were established, and 652 schemes promoted, in the first 10 years after the 1918 Act. The watercourses were cleared of growing and dead timbers and other obstructions. Cesses, shoals, bends and weed accumulations were removed. The earthen walls of sea defences might be raised and strengthened, stone and concrete pitching repaired, and timber and fagot groynes provided. A further precedent was set in 1921, when grant aid was awarded for peacetime schemes. First under a series of Unemployment Relief Programmes, and then entirely under the aegis of the Ministry, grants were made to drainage boards and the agricultural committees of county councils.[8]

Key figures emerged, both locally and within the Ministry, who sought to both codify and extend such powers as had been gained. Alban T. A. Dobson was a principal figure, both in such networking and negotiation with the Treasury. He had joined the Board of Agriculture in 1908 and had fought on the Western Front at Ypres, before becoming Assistant Director of Agricultural Production at GHQ France in 1918, his services being mentioned in despatches. Now an Assistant Secretary in the Ministry, his administrative responsibilities included those of land drainage. A further Act of 1926 (16 & 17 George V, c. 24) sought to enhance the role of the county councils by transferring to them the powers held by the Ministry under the 1918 Act, namely its default powers and those to initiate small schemes in areas where there was otherwise no drainage body. They might additionally require drains to be put in proper order, where such impediment to the flow of water had a detrimental affect on the neighbouring land.[9]

II

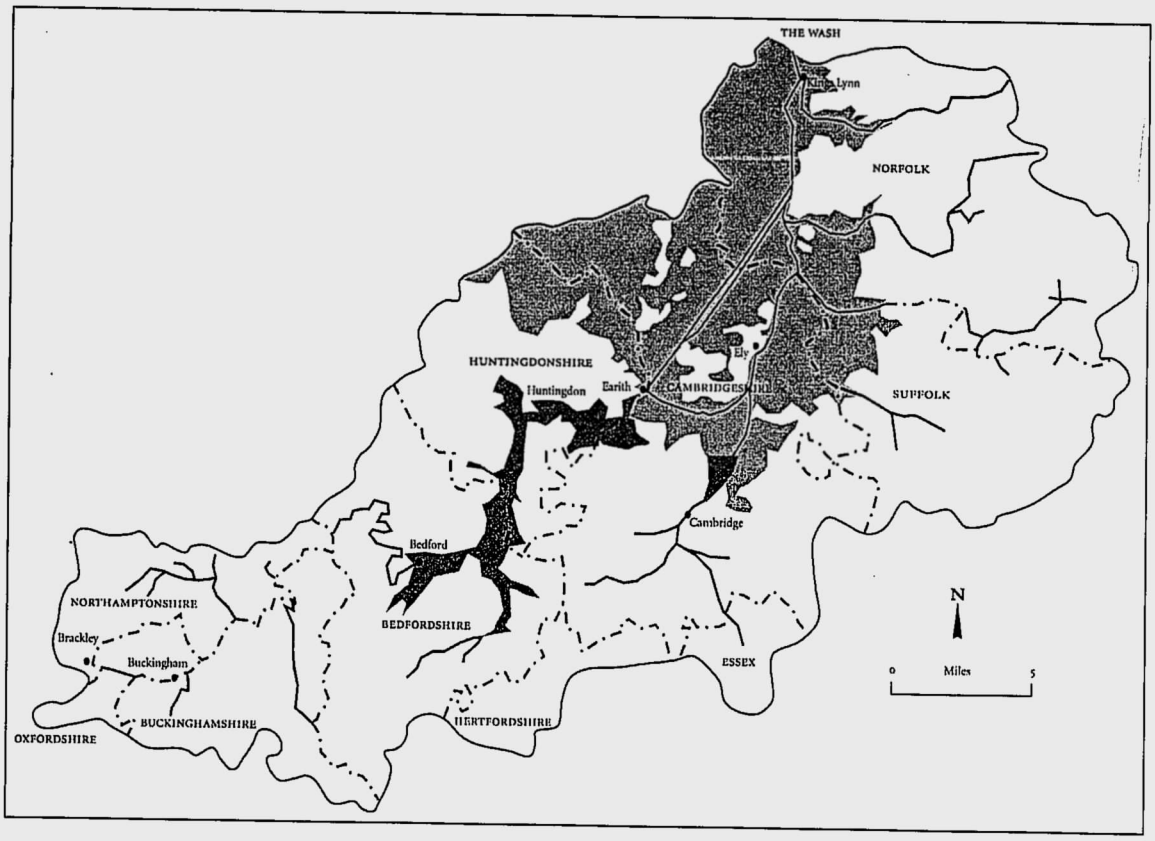
The Great Ouse Drainage Board was the first and by far the largest of the new districts to be formed, accounting for almost half the land area to be affected by the 1918 Act (Map 1). The river, which rose in Buckinghamshire and had its outfall in the Wash, had the fourth largest catchment in England of 2 million acres. Some 380,000 acres, or 18 per cent of the catchment were fenland in the sense of being below the tidal limit that extended to Earith on an ordinary tide. Lord De Ramsey, a long-standing protagonist of drainage improvement, claimed that a statutory framework had been provided for finally completing the scheme begun by the Dutchman, Cornelius De Vermuyden, in the seventeenth century.[10]

[7] *Parliamentary Debates* (*PD*), *Commons*, 105, 1491–1506; J. Sheail, 'Yorkshire's "Sloughs of Despond": an inter-war perspective on resource development in Britain', *Environment and History* 6 (2000), pp. 379–98.

[8] Anonymous, 'Land drainage', *J. Ministry of Agriculture* 26 (1920), pp. 1088–92, and 27 (1920), pp. 764–8; Anonymous, 'Land drainage works for the relief of unemployment', *J. Ministry of Agriculture* 30 (1923), pp. 519–25; J. C. Roseveare, 'Land drainage in England and Wales', *Trans. Institute of Water Engineers* 37 (1932), pp. 178–207.

[9] *The Times*, 21 May 1962; Public Record Office (PRO), MAF 49/764; *PD, Lords*, 63, 367–80.

[10] R. F. Grantham, 'The present condition of arterial drainage in some English rivers', *Procs. Institution of Civil Engineers* 202 (1916), pp. 269–70.



MAP 1. The River Ouse Watershed
After a map of the River Ouse catchment by Richard F. Grantham, 1922 (Cambridge Record Office, City Records/Miscellaneous papers. Drainage of Ouse, 1920–22). The Fens (area of lighter shading) and fenland rivers are distinguished from the upland valleys (darker shading) and rivers (bolder lines) that were also made liable to the payment of rates.

The extensive flooding caused by heavy summer rains in 1912 had emphasized the urgency of improvement works in the East Anglian Fens. The priority for the Board of Agriculture was to educate opinion as to the nature of the remedy. Advantage was taken of the newly-established Development Fund to appoint two Special Commissioners (both leading land-agents) to report on the arterial-drainage problems of eastern England. Their report of August 1914 was widely circulated. A paper given to the Institution of Civil Engineers, in April 1916, afforded further opportunity to publicize its findings. As a discussant, Lord De Ramsey complained of both the carelessness and ignorance of the drainage bodies, but claimed 'the greatest curse of the river' was the number of separate drainage interests. The report described how there were over 80 separate drainage bodies, but no single authority empowered to keep order on the main artery, the 40-mile length of the tidal Ouse. Confronted by so many interests, the authors of the report had found it impossible to affix responsibility for undertaking the remedial works so urgently required in the estuary and lower reaches of the tidal river.[11]

[11] *Ibid.*, 244–90; PRO, MAF 49/311.

Having obtained the support of the relevant drainage-bodies, the Board of Agriculture drafted a Provisional Order under the wartime measure of 1914. A Lower Ouse Drainage Board was appointed with powers to execute specified works and raise the funds required directly from the area deemed to have benefited. The existing bodies would continue to play a crucial part as internal drainage authorities. In evidence to the statutory public inquiry of April 1915, witnesses for those bodies recognized the need for greater co-ordination, but stressed the continuing value of local control. Those farming the immediate area were most aware of what was needed. They could respond quickest to an emergency. The Legal Adviser to the Board of Agriculture, acting as Inspector to the Inquiry, was anxious both to stress the impartiality of the Board and the need to avoid the Provisional Order being too ambitious. And indeed, whilst the Provisional Order Confirmation Bill received the Royal Assent in July 1915 (5 & 6 George V, c. LXXXVII), it proved impossible to implement. Although a further Inquiry of 1917 found the Drainage Board's proposals technically sound, there was no agreement as to how the necessary costs might be met. They far exceeded anything the rateable area could afford. Although the President of the Board of Agriculture did not discount Exchequer support, 'a proper proportion' of the costs had to be borne by those who would benefit.[12]

Such an impasse marked a second stage, namely that of emphasising the benefits of organising drainage on a catchment basis. At the instigation of the county War Agricultural Executive Committees, seven of the nine county councils petitioned for what proved to be the first Provisional Order under the 1918 Act, namely for a single Ouse Drainage Board. As a note published in the *Journal of the Ministry of Agriculture* emphasized, the object was not to lay down some general policy or scheme of works, but rather to establish a broad view of all the problems and interests as might be addressed within a rating area large enough to avoid any unfair burden being imposed on part of the land to benefit. Of a Board of 42 members, most were to be elected by the various areas into which the catchment was divided, the remainder being appointed by the county councils, the Kings Lynn Conservancy Board, and the Minister. The Board was to categorize its expenditure, each category being apportioned according to the benefit to be derived from the different areas and sub-areas.[13]

Although the principle of an Ouse Drainage Board was welcomed, the rating provisions were so fiercely contested, even by some of the petitioning counties, that the Confirmation Bill was debated in both Houses of Parliament. Ever since the General Sewers Act of 1531, it had been assumed that drainage rates could only be levied on the properties which directly benefited from such works. On the principle of 'no benefit – no rates', there was no requirement, on the part of properties above the flood level, to contribute to the cost of maintaining the water-courses. They stood outside the jurisdiction of the drainage authorities. Some leeway had been allowed. The Somerset Drainage Commissioners Act of 1877 adopted a limit of 2 feet above the highest recorded flood level. The Thames Valley Drainage Commissioners Act of 1871 had settled for 5 feet, the Ordnance Survey being employed to survey and produce maps showing the contour. The Land Drainage Act of 1918 adopted a limit of 8 feet. The effect on the Ouse

[12] PRO, MAF 49/312–3.

[13] PRO, MAF 49/316, 325; Anonymous, 'Land drainage of the Great Ouse', *J. Board of Agriculture* 26 (1919), pp. 729–31; Anonymous, 'The Ministry and the River Ouse Drainage Scheme', *J. Ministry of Agriculture* 26 (1920), pp. 1172–3.

catchment was to include not only the 'lowland' fens, but a further 125,000 acres of 'upland' valley, making a total of 485,000 acres, or one-fifth of the catchment, liable to rates.[14]

At the Second Reading of the Confirmation Bill, the Members of Parliament for Bedford and Buckingham attacked it for reversing the principle that the water of the 'highlands' was taken 'by the men of the lowlands down to the sea at their own expense'. It was unfair to require those living some 70 miles upriver to contribute to the costs arising from the tidal river and outfall. Such upland valleys should be administered separately from the 'great fine rolling fenlands full of money'. In so far as it could be shown that the cost of the works on the lower Ouse outstripped the resources of those who would directly benefit, such investments should be regarded in the same light as the road system of the country. Both were of such national importance as to merit Exchequer grant-aid. In his reply to the Second Reading debate, the Parliamentary Secretary, Sir Arthur Boscawen, indicated (in what became 'a much quoted pronouncement') that there was no change in principle. The liability for each area and sub-area would be strictly proportionate to the benefit each was considered to enjoy. The 'upland' valleys should take some responsibility for the discharge of their waters to the sea.[15] Although fiercely contested, the Select Committees of both Houses of Parliament approved the adoption of the 8 feet contour. The Land Drainage (Ouse) Provisional Order Confirmation Act (10 & 11 George V, c. CXXII) came into force in October 1920.

'An acute financial situation' arose as passive resistance to the payment of the rates spread from the 'uplands' to other parts. It was an 'extremely onerous, expensive and lengthy business' to prepare rate-books for some 40,000 occupiers of property. Many professed to being unaware of the existence of the Ouse Drainage Board, let alone their liability. There were claims of its causing sales of some of the best 'feeding land' in Bedfordshire to fall through. 'Upland' members of the Board rejected all items of expenditure until such liability was withdrawn. Citing Boscawen's words, they insisted each county above the tidal limit at Earith should be left to deal with its own section of the river and its tributaries. Although magistrates upheld the test-cases brought by the Board for the non-payment of rates, there was, by the end of 1923, a shortage of moneys for even essential works. The Minister, Sir Robert Sanders, offered to draft an amending Order. It envisaged the 'upland' valleys being placed under a separate Committee of the Board. The 'lowlanders' fiercely contested such special treatment. The only point of agreement was the belief that little would be achieved without substantial Exchequer support.[16]

Alarmed by the prospect of large areas of fenland being lost to 'proper cultivation', the Minister was authorized by a Cabinet Committee, in July 1924, to propose 'a measure of Government assistance'.[17] The Ministry offered to meet the full costs of the works, estimated at up to £1.5 million over 10 years, provided the Board agreed to repay two-thirds over a period of 30 years. A further deputation, in January 1925, rejected the offer on the grounds that the banks had already refused any increase in the Board's overdraft. The Minister in turn rejected the demand for an outright grant to cover the entire cost of the works. He made instead a three-part proposal. A special Commission should be appointed to investigate the whole

[14] Grantham, *Proceedings*, pp. 263–5.
[15] *PD, Commons*, 127, 1929–51.
[16] PRO, MAF 49/325.
[17] *Ibid.*

problem of the river Ouse. Although initially resisting such a move, the Drainage Board agreed to petition for an amending Order suspending the rating provisions and, therefore the execution of any works, in the 'upland' valleys. The Treasury undertook to provide such financial assistance as required by the Board to function.[18] A Provisional Order Confirmation Bill was passed in July 1925 (15 & 16 George V, c. LXXII), and another in August 1926, that extended the suspensory period until January 1928.

III

A third critical stage had been reached in which attention was focused on deciding the apportionment of liability for meeting the costs of improvement schemes. The 'special and expert' Commission met under the Chairmanship of Sir Horace Monro, the former Permanent Secretary of the Local Government Board and an expert on rating. The other three members were the distinguished engineer, W. J. Binnie, Sir John Oakley (later President of the Surveyors' Institution), and Leopold Harvey, a Spalding solicitor and Clerk to the Welland Drainage Board and eleven other drainage bodies. In drafting the short-list of proposed members, Dobson had written of how Harvey, knowing 'the difficulties from A to Z', was unlikely to 'be taken in by any specious evidence that might be offered in the various areas of the Ouse district'. The Commission's unanimous report of December 1925 warned of how, without large-scale engineering, inundation was inevitable. There was a real danger of the whole district 'returning to its original condition of swamp'. Whilst it might be argued the 'uplanders' had an immemorial right to discharge their surplus water into its natural channels, witnesses to the inquiry described how the increased under-drainage of farmland meant the rainfall was 'voided more rapidly into the lower reaches of the river'.[19]

Whatever the validity of these various claims, the Commission emphasized how the necessary works to remove the upland floodwater, prevent the accumulation of silt in the tidal channel, and to stabilize the banks were so intimately connected that nothing less than the entire scheme would suffice. There had to be a considerable widening of the taxation base. In a matter such as land drainage, the whole catchment had to act as if 'a single community which cannot be artificially divided'. As the Commission observed, local authority rates were apportioned not in terms of benefit, but by ability to pay, as gauged by the annual value of the property occupied. It had also become the practice to spread that liability beyond the parish to encompass the county, with substantial Exchequer grants to help equalize the local burden. Drawing on such precedent, the Commission came to 'the definite conclusion' that the Ouse Drainage Board should cover the entire catchment and have direct responsibility for all the major channels, banks and other structures in the 'lowlands'. The existing drainage bodies would continue to manage the extensive network of minor drains, as well as provide and maintain pumping, subject to the Drainage Board having a power of veto over any operation deemed to be prejudicial to the interests of the catchment as a whole.

The Commission recommended that the capital costs, and revenue expenditure, of the Ouse

[18] PRO, MAF 49/320, 324.

[19] PRO, MAF 49/325; PP, 1926, V, Ministry of Agriculture, *Report of the Commission appointed in connection with the Ouse Drainage Board.*

Drainage Board should be met equally by the catchment and the Exchequer. The greater part of the contribution from the catchment should be met by those parts where there was a 'need to drain as well as get rid of floodwater'. Rather than the Board itself collecting the moneys, it should precept the greater part from the catchment through the internal drainage bodies. As a new principle, the remainder should be raised on the local authorities. Those county councils, and county borough councils, with lands within the 'lowland' area should contribute 6*d.* per acre per annum as an 'insurance charge' against what might otherwise be the heavy damage to public health and property, and loss of rateable value, caused by extensive flooding. The charge should be imposed on ratepayers of the entire administrative area. The remaining income to the Board should be raised as 'a wayleave charge' on the remainder of the catchment. It should be left to the relevant county council, or county borough council, to decide whether the charge of 2*d.* per acre per annum was confined to those ratepayers within the Ouse catchment, or spread over the entire administrative area. Although there was no exact precedent to such taxing of local government, the Commission pointed out how a local act had made the whole of the county of Middlesex liable to drainage rates. The Lancashire, Surrey and West Riding of Yorkshire county councils were empowered to charge any costs incurred by their respective drainage acts to county funds.

The Commission believed the other half of the Board's costs should be paid by the Exchequer. Although 'a very drastic precedent', such 'a liberal measure' of Government assistance was 'strongly justified'. An extensive area of fertile farmland was otherwise threatened with catastrophic loss. The improvement of the outfall was exceptionally difficult. With its other burdens, the drainage area was unable to meet so large a charge. The drainage works would materially assist the port of Kings Lynn, and their construction help to alleviate local unemployment.

The Minister, Walter Guinness, obtained the Cabinet's approval, in March 1927, for a bill closely based on the Commission's recommendations. It was however given such low priority in the parliamentary timetable that Guinness returned to the Cabinet, in May, warning that, unless the bill was passed, the district would return to 'the state of passive resistance'. Attention was drawn to the devastating floods recently experienced on the river Mississippi in America. The Prime Minister, Stanley Baldwin, spoke of his 'strong desire to press on with the bill'.[20]

It was a hybrid bill, in the sense that it was a government measure that anticipated expenditure of Exchequer moneys, yet dealt so closely with private interests as to require scrutiny in the manner of a local or private bill. In moving the second reading in June 1927, Walter Guinness described its purpose as to implement the 'very careful researches' of the Commission. The fens lived under the shadow of what was in effect a great reservoir of tidal water. Whilst it could easily be emptied of water pumped from the fen, considerable improvements were required to cope with the upland waters. There had been enormous development of land drainage in the 'uplands' since the time of Vermuyden. Macadam roads, housing estates and new towns had combined to send more water more rapidly down to the tidal channel.[21]

Such general observation carried little weight with Members whose constituency interests were affected. A Norfolk Member, Major Alan McLean, pointed to 'the very remarkable fact'

[20] PRO, CAB 23/54–5, CAB 24/187, and CAB 26/9; P. Daniel, *Deep'n as it come; The 1927 Mississippi flood* (1977).

[21] *PD, Commons*, 207, 1209–86.

that the Bill had united in opposition the ratepayers of the 'lowlands', the 'uplands' and those of the other catchments of counties that included part of the Ouse watershed within their borders. Norfolk was particularly affected. The Member for South Norfolk protested at how his constituents would gain nothing directly from the improvement works on the Ouse. The Member for East Norfolk claimed his constituents already had expense enough in protecting themselves from flooding caused by the rivers Bure, Yare and Wensum. Such local criticism highlighted a more general grievance. Whilst the 'expert' Commission had acknowledged the much wider implications of its 'very drastic recommendations', the Government had accepted them for only the Ouse catchment. It had appointed a Royal Commission on Land Drainage to go into the wider question. The Bill's critics argued, therefore, that the more prudent course was to wait until the Royal Commission had reported. Guinness emphasized, however, the uniqueness of the circumstances that gave rise to the Ouse Drainage Bill. The Government had no intention of offering the same level of Exchequer aid to other catchments. The Bill's rejection would mean those in the Ouse catchment would have to meet a much larger proportion, if not the full cost, of any future scheme.

The effect of the bill's being given a second reading, by a majority of 143 to 45 votes, was for it to be referred to a joint committee of both Houses of Parliament. 'Upland' interests spared no effort in pressing, through legal counsel, their opposition. As the Clerk to the Hertfordshire Council expressed it, any extension of the liability for meeting the cost of downriver drainage-works would be 'a very serious thing' for his county. Hertfordshire was 'so entirely an upland county' as to form part of 'several very large rivers'. The Joint Committee resolved, in November 1927, by a majority of 5 to 3 members that the Bill should not proceed. Although the Lord Chairman followed the custom of not giving reasons, it was assumed the majority thought such a far-reaching decision must await the findings of the Royal Commission.[22] By a further Provisional Order Confirmation Act (18 & 19 George V, c. XXIII), the suspensory period was again extended until 'a day to be decided by the Minister'.[23]

IV

A fourth stage had been reached. Parliament had rejected a catchment-by-catchment approach for one that established a statutory framework for the whole country. The Ministry was well prepared, in the sense that concurrently with the promotion of the Ouse Bill, it had set in train a review of the arterial-drainage needs of the whole country. In moving the Second Reading of 'the small County Councils Drainage Bill' of 1926, the Parliamentary Secretary, Lord Bledisloe, had announced the Government's intention of introducing a Bill for 'the wholesale amendment of the existing law relating to land drainage', based on the findings of the Ouse Commission.[24]

A large landowner and Unionist Member of Parliament, Lord Bledisloe had acted as the House of Commons' spokesman for the Food Controller during the Great War, and thereafter Chairman of the Lawes Agricultural Trust.[25] As he wrote to the Minister, in December 1924,

[22] Bedfordshire RO, GPD 6; PP, 1927 VI, *Report of the Joint Select Committee, Ouse Drainage Bill*; Roseveare, *Transactions*, p. 181.

[23] *PD, Lords*, 71, 457–8.

[24] *PD, Lords*, 63, 368–9.

[25] E. J. Russell, 'Obituary', *JRASE* 119 (1958), pp. 57–9.

soon after his appointment as Parliamentary Secretary, land drainage had become the most important problem awaiting Ministry intervention. A Bill enacted by a Conservative Government would be far less contentious than one introduced by 'any Government of a different political complexion'.[26] And in a further commentary of September 1925, Bledisloe emphasized how it would be easier to justify financial assistance to arterial drainage than for any other 'direct benefit to British agriculture'. Where minor schemes might be seen as subsidising certain landowners, and field drainage was entirely a matter for landlords and tenants, a bill to expedite arterial drainage could be represented as enforcing the 'neighbourliness' required of every landowner in the execution of such large-scale improvement-works.[27]

As drafted under Dobson's supervision, the bill envisaged the drainage bodies being given much greater permissive powers. They might seek, through Provisional Order procedures, a wider definition of the 'area to benefit' and, therefore, a larger rateable-income. And secondly, such revenue would be more simply collected through the appropriate local authority. The Ministry's Legal Adviser, C. H. Stocks, protested that such permissive powers, whilst obviously desirable, hardly amounted to 'a real attempt to deal with a long felt need'. Dobson agreed, but hesitated to recommend any compulsory extension of rating provision until it was known whether ministers were prepared to launch into 'a bill of first-class magnitude'. As Stocks himself conceded, there was no legislative subject better calculated to produce 'opposition and criticism from every available quarter of those who own or are interested in land'. The draft Bill might well have been shelved, but for the pressure Lord Bledisloe continued to apply.[28]

The report of the Ouse Commission both confirmed the need for a general bill and yet demanded something more by way of evidence. As Stocks minuted, it was very doubtful whether such an enquiry would carry sufficient weight, dealing only with 'one small quarter of England' – albeit one that loomed so large in drainage minds. The backing of 'a really strong' Royal Commission was needed. The Permanent Secretary, Sir Francis Floud, agreed that a Royal Commission would be the most effective method of creating the public opinion needed for such drastic reform. Whilst not dissenting, Dobson warned of how the Bill would be even more delayed. Lord Bledisloe disagreed. With the Ouse Commission's report to hand, its investigations should soon be completed. Walter Guinness persuaded the Prime Minister, Stanley Baldwin, of the need for a Commission.[29]

The Cabinet approved its appointment in February 1927, with Lord Bledisloe as Chairman. Members were otherwise chosen not so much to reflect drainage interests as to include 'a sprinkling of really prominent men, who will give confidence to the public mind'. Dobson felt 'very strongly' that the choice should be so framed as to ensure a verdict favourable to 'the watershed principle'. Leopold Harvey was a member of both the Ouse Commission and the new body, giving evidence to the latter in a personal capacity. The twelve members otherwise included Sir George Courthope, a leading agriculturalist and Unionist MP, Rowland R. Robbins, a past-President of the National Farmers' Union, and Walter R. Smith, the Parliamentary Secretary to the Ministry of Agriculture in the Labour Government of 1924. Lord Clinton was

[26] PRO, MAF 49/764.

[27] Cambridge University Library (hereafter CUL), Baldwin MSS, 25.

[28] PRO, MAF 49/817.

[29] PRO, MAF 49/817.

Chairman of the Forestry Commission. Sir George H. Etherton was Clerk to the Lancashire County Council and of the Lancashire Rivers Board, and Sir Joseph Priestley was a member of the Hertfordshire County Council. John W. Hills, the Unionist MP and Financial Secretary to the Treasury in 1922–23, had recently published a book on government finance.[30]

The Royal Commission worked with 'thoroughness and despatch', taking nine months to produce its report. As anticipated, it painted 'a vivid picture' of a tangle of no fewer than 361 different authorities, with antiquated powers and inadequate resources. One-seventh of lowland England and Wales was inadequately drained, or waterlogged. It recommended that the whole of each river basin should be brought under 'a supreme authority', a new Catchment Area Authority composed mainly of representatives of the county and country borough councils. The income provided by those councils would be raised as part of the general county rate – the 'uplands' paying a lower rate. The Catchment Authority would have direct charge of the main channels and banks, and general oversight of the existing internal drainage authorities, which should continue to function on the principle of benefit and escapement from danger.[31]

The Minister, Walter Guinness, applied, as was 'the usual custom', for Treasury approval for the circulation of a Cabinet paper, recommending the drafting of a Land Drainage Bill based on the Commission's findings. Although acknowledging they must be examined, Treasury officials minuted how such proposals came at 'an awkward moment'. Not only did they seek to establish new authorities and extend rating provision, at a time of major upheaval in local government, but opponents would certainly demand the whole, or a large part, of the burden being placed on the Exchequer. Although the Treasury must continue to put up 'a stiff fight', its position had been much weakened by the grant aid provided under the unemployment-relief schemes. The £1 million agricultural-drainage fund had further whetted the appetites of local drainage boards. Its justification, on the grounds that 'the cost of the necessary works is greater than the land can bear', had set a very dangerous precedent. Whilst approving the costs of the preparatory survey work for any bill, the Chancellor of the Exchequer, Winston Churchill, insisted (and Guinness conceded), in June 1928, that there must be further 'very careful consideration before the Government commit themselves even in principle to any such far reaching scheme'.[32]

Although Lord Bledisloe resigned office in February 1928 (to become founder-Chairman of the Imperial Grassland Association), he continued, as a constructive critic, to sustain the political momentum. In moving an adjournment debate a year later, in February 1929, he focused particularly on the wastage of investment in the 'patchy, sporadic and isolated attempts to improve drainage conditions' (usually as part of unemployment relief schemes), without the State having first prepared the way with arterial schemes. As the Earl De la Warr (the Opposition Spokesman) expressed it, only the State could provide the requisite funds and 'directing intelligence', whereby the solution of one problem helped resolve another. Not only might unemployed miners and others be given work, but their skills were so highly suited to such arterial-drainage schemes. The brief debate (there were only three speakers) provided the most public platform for the Parliamentary Secretary, the Earl of Stradbroke, to refute any suggestion

[30] J. W. Hills, *The Finance of Government* (1925).

[31] See n. 6 above.

[32] PRO, T 161/483

of the Commission's findings being pigeon-holed. They were being actively developed. Preliminary and highly-specialist work was proceeding in delimiting the catchment areas. Where the Commission had identified a hundred catchments, the Ministry believed some twenty of the most major and 'urgent' areas must be surveyed and identified as part of the legislation.[33]

Perhaps most decisively, there was strong party-political support. 'No species of work' was perceived as 'more valuable for the countryside'. The Unionist's Agricultural Committee urged the Prime Minister, in March 1929, to combine land drainage, land settlement and unemployment as 'a really big item in a policy which would appeal to the towns as well as the country'. The extreme unpopularity of an 'uplands' rate could be avoided if each catchment received an Exchequer grant. Not only would that be justified, if the whole country were administered on the basis of catchment areas, but the Boards would be better able to plan, without waiting for the collection of contentious rates.[34] The Conservative Manifesto, for the General Election of May 1929, promised that, if re-elected, a Bill would be introduced.

V

In the event, it was Noel Buxton, as the Minister of Agriculture in the new Labour Government, who impressed upon the Cabinet, in July 1929, 'the utmost importance of a bill', both on agricultural and political grounds. The waterlogged conditions of much of the countryside were a serious handicap to efficient farming. Drainage work provided the chief agricultural contribution to the relief of unemployment. The Royal Commission had emphasized how a drastic revision of the law must precede further drainage development.[35] The Earl De La Warr moved the Second Reading in the House of Lords in April 1930, describing it as an enabling measure – a 'Bill of machinery and of preparation for work to come'.[36]

The Bill provided initially for 47 Catchment Boards, including what became known as the Bedfordshire Ouse Catchment Board. Each was to comprise up to 31 members, of whom two-thirds would represent the relevant county councils and county borough councils. Besides one member representing himself, the Minister was to appoint the remainder as representatives of the lands that would directly benefit from the drainage works. The individual Boards would be responsible for the works required on the 'main rivers'. As well as general oversight of the schemes undertaken by other parties, the Catchment Boards would have powers to grant aid, 'modernise' and establish new internal drainage boards so as to cover in time the whole of the 'lowland' areas.[37]

Complication arose from the decision made by the previous Government, under the Local Government Act of 1929, to exempt agricultural land and farm buildings from the payment of local-authority rates. The effect was to create, under the Royal Commission's proposals, the anomalous situation whereby farming, the principal beneficiary of improved drainage, escaped any liability for its costs. At Buxton's suggestion, the Cabinet sought the advice of an *ad hoc* committee of officials from the Treasury, Ministry of Health and his own department. It concluded that no difference in principle existed between other local government 'service' rates

[33] *PD, Lords*, 72, 881–904.
[34] CUL, Baldwin MSS, 25.
[35] PRO, CAB 24/205 and CAB 23/61.
[36] *PD, Lords*, 77, 67–106.
[37] PRO, CAB 26/13 and CAB 23/63.

and the general drainage charge that was to be imposed by the Catchment Boards on the local authorities of the whole catchment area. So as to secure some agricultural contribution, the inter-departmental committee recommended that a precept should be raised additionally on the internal drainage boards (IDBs) as a 'benefit' rate of such lowland areas. The Cabinet approved such a compromise.[38]

The Treasury had recognized the whole notion of grant aid would have to be reconsidered. With 'no stable and normal basis of Catchment Area control' previous arrangements had been necessarily *ad hoc*. Officials refused however to indicate the scale and nature of any future Treasury support. The Ministry accepted such vagueness as an inevitable condition of its approval for the Bill. A deputation from the County Councils Association, in March 1930, warned however that its support depended on such expenditure as raised from local authorities being counted as a new service under the Local Government Act, and therefore qualifying for grant aid. Dobson reported how the Minister, having read all the papers on the subject, was convinced the Bill must explicitly offer such financial assistance. As Treasury officials acknowledged, the Association might easily defeat such a contentious measure.[39]

The Chancellor of the Exchequer, Philip Snowden, agreed to the general principle that 'the State was prepared to contribute to the capital cost of getting the land drainage system of the country into decent order', but he emphasized it was no part of the State's business, once achieved, to support its upkeep and repair any more than to provide grant aid for other such local services as the drainage of urban areas. Approval was given for the Earl De La Warr to give 'a cautiously worded promise' during the Lords' Second Reading. Treasury officials were furious however when he departed from their brief, under close questioning, and virtually committed the Government to tabling a finance clause in the Lords. Not only did this show singular disregard for the House of Commons' privileges, but it gave critics ample time to prepare for the Financial Resolution in the Commons. There was however no mistaking the hostility of both Houses of Parliament to the 'great powers being given to Ministers' and the imposition of 'serious liabilities on landowners and ratepayers'.[40]

Without an explicit commitment in the Bill to the Government meeting a large part of the costs of carrying out the intended drainage-works, there was a real possibility of its being defeated on its Third Reading in the Lords. A Lords' Motion applied further pressure, demanding publication of the details of the Exchequer grant-aid, before the Lords' Committee Stage. Whilst Snowden protested that 'Exchequer money spent on drainage is a sheer gift to the landowners', the Cabinet saw no alternative but for the Lord De La Warr reading out the text of the financial clause which would be moved during its passage through the Commons. It indicated the minister might,

> out of moneys provided by Parliament, make grants towards expenditure incurred by Catchment Boards under the Act, in the improvement of existing works or the construction of new works of such amounts as the Treasury may from time to time sanction.

Dobson regarded the inclusion of 'the improvement of existing works' as a signal achievement

[38] PRO, CAB 24/207 and CAB 23/62.
[39] PRO, T 161/483.
[40] PRO, T 161/483; *PD, Lords*, 77, 82–3.

in the Ministry's negotiation with the Treasury. More immediately, the clause proved sufficient to satisfy critics, yet elastic enough for account to be taken of the volume of work and rateable income of the individual Catchment Board in deciding the level of aid the minister might award.[41]

Christopher Addison (who had succeeded Buxton as Minister of Agriculture) moved the Second Reading of the Bill in the House of Commons in June 1930. Almost every contributor to the debate remarked on how it was one of those very rare occasions, when the frontbench spokesmen of all three political parties supported a major Bill. As Guinness noted ruefully, the Labour Opposition to his earlier Ouse Drainage Bill had argued that such large-scale Exchequer support should only be given where the land was taken into public ownership. That pre-requisite was now forgotten as those the very same persons also strove to transfer the 'crushing burden', carried by a comparatively few ratepayers, to the 'broader shoulders' of the whole catchment and the State. But if land nationalisation was quietly 'buried', a small number of backbench Conservative Members showed their 'outright hostility' to the bill. Captain R. C. Bourne, the member for Oxford, moved a 'wrecking' Motion', arguing that farming was simply not worth the £30–40 million of public expenditure, which the Royal Commission estimated would be ultimately necessary for drainage improvement. In so far as the Government had money to spare for agriculture, it should be invested in making farming profitable on the inherently better soils.[42]

Buxton had warned the Cabinet of fierce criticism to the rating provisions. The Royal Commission had insisted the ambitious improvement to the main channels could only proceed if the entire catchment was assumed to benefit.[43] But as the Agricultural Committee of the Bedfordshire County Council emphasized it was also the very principle upon which the 'upland' counties had defeated the Ouse Drainage Bill. The Clerk to the Hertfordshire County Council was confident that they 'could again win in any Committee Room'. But as he also noted, the principle of the Land Drainage Bill, as an explicitly Government-measure, would be debated and decided in 'the body of the House'. Ranged against the Government Whips, the 'upland' counties were bound to lose. The Clerk to the Bedfordshire County Council accordingly pressed for a compromise, whereby each county would remain 'the responsible Drainage Authority', but with 'the Ministry of Agriculture being clothed with suitable default powers'.[44] It was a compromise developed by the Member for Bedford, in seconding the hostile motion. As the drainage authorities responsible for their respective administrative areas, the county councils should be encouraged to form groupings to address the needs of the individual catchments.[45]

As anticipated, the Government obtained the Commons' approval for the principle of the bill. The backbench motion was outmanoeuvred. As one Member put it, the bill had both an agricultural and social aspect. It promised to provide employment through drainage works for many of his constituents thrown out of 'blast-furnace work'. Although a former Conservative minister, Col. G. R. Lane Fox, complained of how the Liberal Party had, through David Lloyd George, especially 'blown up' the employment opportunities, the Bill was essentially what the previous Conservative Government would have promoted. It had placated the existing drainage

[41] PRO, T 161/483; *PD, Lords*, 77, 330–6, *Commons*, 240, 999–1000 and 1515–48.

[42] *Ibid.*, 240, 993–1034.

[43] PRO, CAB 26/13; CAB 23/63.

[44] Bedfordshire RO, GPD 6.

[45] *PD, Commons*, 240, 1034–9.

boards by integrating them into the larger scheme of things.[46] Indeed, some of the most relevant and powerful argument in favour of the Bill came from Opposition Spokesmen. Sir George Courthope had been a member of the Royal Commission. He spoke of how, in the same way as the householder expected to contribute to the costs of the sewers that carried away the scullery waste and bathwater, so every part of a river catchment should accept some liability for arterial drainage.

There was, as Alan Wilt has observed in a wider context, recognition of how 'the country landscape' was changing unmistakably.[47] In winding up for the Opposition, Viscount Wolmer attacked the backbench motion of Members of his own Party for ignoring the urban impact on the countryside. The Motion had failed to recognize how drainage costs arose not so much from farming needs as from the physical consequences of 'our great towns'. Although the concept of 'a natural prescriptive right' might still pertain, say to the drainage of an upland moor, the discharge from a comparable area of buildings and waterproof streets had a very different effect. Not only was it considerably accelerated, but the transfer of millions of gallons of water from such catchments as those of Wales and the Lake District meant the volume of some of the rivers draining the cities and towns had increased by as much as five to six times.[48] Where it might seem most equitable for the payment of drainage rates to be based on acreage, so as to reflect the volume of rainfall, Courthope believed the Royal Commission had correctly pressed for the annual value of property, as a better guide to the enormous influence now exerted by such built-up areas on the discharge to the rivers.[49] The Bill was given a Second Reading without division.

VI

The Bill received the Royal Assent in August 1930 (20 & 21 George V, c. 44). With that fifth stage in the drainage-reform process, farmers had moved from a position where those directly to benefit from a scheme met the full cost, to one where the industry bore only a small proportion of the investment in arterial drainage. Over the first five years, 1931–35, local authorities provided some three-quarters of the income of the Catchment Boards. The internal drainage districts contributed 16 per cent and the Exchequer most of the remainder.[50]

Such an imbalance made re-organisation and extension of the drainage districts even more pressing. A much-cited case was that of the Witham and Steeping rivers catchment area of Lincolnshire. Forty-seven existing bodies covering 238,893 acres were replaced by 7 internal drainage boards that together had jurisdiction over an additional 93,572 acres. The Medway Catchment Board of Kent most famously sought, at a 3-day Public Inquiry in March 1933, to include every acre of land that could conceivably be brought within an internal drainage district. It included both urban and rural land up to 8 feet above the highest known flood-level in both non-tidal and tidal areas. Officials obtained the personal authority of the Minister for both drafting and widely-publicising what became known as 'the Medway Letter', that explained why

[46] *Ibid.*, 240, 1039–45.

[47] A. Wilt, *Food for war. Agriculture and rearmament in Britain before the Second Word War* (2001), pp. 156–7.

[48] *PD, Commons*, 240, 1003–10 and 1092–7.

[49] *Ibid.*, 240, 1008 and 1092–7.

[50] Ministry of Agriculture, *Report of operations and proceedings under the Land Drainage Act 1930 to 31 March 1937* (1937).

the guidelines adopted since the 1918 Act must be followed. The limit to rating by internal drainage boards in urban areas should be the highest-known flood, or spring tide, level. In rural areas, it was 8 feet above the highest non-tidal flood, and 5 feet above the ordinary spring tide – the difference reflecting the slighter impact of tidal flooding on the rooting-systems of farm crops. Whilst the Catchment Board had rightly pointed to the benefits of protecting underground electricity and other utilities, the 'Letter' described how this was 'a community service' for which the Catchment Board already precepted through the local-authority rates. Field trials carried out by the Rothamsted Experimental Station subsequently demonstrated how the prescribed agricultural limits were 'fair and reasonable'.[51]

As the international situation deteriorated, and the strategic importance of home-grown foodstocks was again recognized, opposition to such ministerial intervention further weakened. The drainage provisions of the Agriculture Act of 1937 (1 Edward VIII & 1 George VI, c. 70) marked perhaps a sixth stage of improvement. Grant aid could be paid to both internal drainage boards and county councils for improvements to the lesser streams, drains and watercourses. Although pressed during the Second Reading debate to include the 'overhauling and relaying' of field-drains and ditching-work on individual farms, the Parliamentary Secretary argued it would be premature until such 'middle schemes' were functional.[52] Whilst Members suspected the 'niggardliness' of the Treasury, officials of the Ministry's Land Drainage Branch became increasingly concerned at the poor response to the grant aid already offered, namely of 33 per cent for 'the ordinary work of drainage' and 50 per cent for such constructional works as a pumping station, sluice gates or sea walls. The 213 schemes undertaken in the first operative year of the Act, at an aggregate cost of £194,636, made a pitifully small impact. Only 63, costing as little as £8,929, were promoted by the county councils. As one frustrated Ministry official protested, in October 1938, the Government was entitled, when grants were offered, 'to expect the co-operation of local authorities in seeing that the facilities offered are taken advantage of'.[53]

More fundamentally, such a shortfall in activity highlighted an anxiety voiced in the parliamentary debates, namely that the 'cart' was being put before the 'horse'. The farming industry was too impoverished to take advantage of such administrative and financial aid. The Land Drainage Branch had argued, during the drafting of the 1937 Bill, that land drainage, as 'the primary service' in many districts, should take priority in its labour requirements over 'normal agricultural operations'. The Ministry's Labour Branch was, however, so anxious as to the competition for labour, as would come from the higher wages paid for drainage work, that it succeeded in confining grant aid to 'the winter interregnum', when such work might help tide over those seasonally stood down on the farms. The grant aid paid, say in sugar-beet districts, was delayed until Christmas, the worst possible time of the year for drainage-work. The compromise, as eventually approved by the Minister in November 1938, was to limit such restrictions to manual digging. A skilled excavator driver and his mate, or those employed on structural work, were hardly agricultural labourers.[54]

[51] Ministry of Agriculture, *Ibid.*, pp. 69–72; PRO, MAF 49, 182; B. A. Keen, 'Land drainage: the area of benefit', *J. Ministry of Agriculture* 43 (1936), pp. 521–6.

[52] *PD, Lords*, 106, 677–736.

[53] PRO, MAF 49/836.

[54] PRO, MAF 49/836–7.

VII

A specialist sub-committee of the Central Water Advisory Council (CWAC) claimed, from a post second world war perspective, that no step in the long history of drainage legislation had been more important than the establishment of unified control of every catchment, under substantial bodies armed with effective powers.[55] As this paper has related, the Land Drainage Act of 1930 was itself the culmination of a five-stage process which, with hindsight, had begun with the greater facility granted under the 1918 Act to appoint elective drainage bodies. Whilst the establishment of the Ouse Drainage Board had represented a second stage, in the sense of further demonstrating the merits of a whole-catchment approach, the hostility encountered to its rating provisions necessitated a third stage, namely the resolution of how the costs of arterial drainage should be apportioned. A fourth stage was required, when the rejection of the Ouse Drainage Bill confirmed the need for national guidelines as to how such co-ordination of drainage benefit and payment was to be achieved. Principal actors may be identified. Lord Bledisloe had succeeded in obtaining the fifth stage, the Land Drainage Bill, by the time of his appointment as governor-general of New Zealand. A sixth stage, the drainage provisions of the Agriculture Act of 1937, had been accomplished by the promotion of Alban Dobson to Fisheries Secretary in 1938.[56]

Where much might be made of the hostility of sectoral interests and miserliness of the Treasury, perhaps the most remarkable aspect of the Act of 1930 was the priority accorded to agricultural interests at a time of such economic and social turmoil. From his position as Parliamentary Private Secretary, Tom Williams paid especial tribute in his autobiography to the courage and patience of Christopher Addison in securing the Bill in such a delicately-balanced parliament.[57] Addison capitalized on the widely-held belief, which Williams himself held as a Member of Parliament for a colliery district, that, by advancing the drainage infrastructure so as to enable agriculturalists to help themselves, there would also be some alleviation of unemployment generally. By the late 1930s, perceptions as to the utility of farming had widened further, as concern increased as to food production in the event of war. By the Agriculture (Miscellaneous War Provisions) Act of 1940, grants of 50 per cent were offered for under-drainage and ditching, where approved by the County War Agricultural Committees.

In the longer term, the inter-war measures considerably enhanced the standing of land-drainage interests in the wider counsels of watercourse management. Walter Guinness had wondered, at the time of the Royal Commission in January 1926, whether its terms of reference should encompass the fisheries dimension and, therefore, the control of pollution. Dobson warned of how such a broadening of the Commission's terms of reference might extend opposition to an eventual Bill. A locus would be provided for other government departments, and most obviously the Ministry of Health, to intervene.[58] The Act of 1930 went no further than to enable the Minister of Health to designate a Catchment Board as a sanitary authority, where

[55] Central Water Advisory Council, *Report of the Land Drainage Legislation Sub-Committee* (1951).

[56] *The Times*, 21 May 1962. Shortly after his retirement as Under Secretary in 1946, Dobson was appointed Secretary of the International Whaling Commission.

[57] Thomas Williams (Lord Williams of Barnburgh), *Digging for Britain* (1965), pp. 115–6. Williams (1888–1967) was a Parliamentary Secretary to the Ministry between 1940 and 1945 and Minister 1945–51.

[58] PRO, MAF 49/817.

this was required to prevent pollution. It was the experience of managing the whole country on a catchment-basis that caused the Boards to become an exemplar of what could be achieved more generally. By the River Boards Act of 1948, the Catchment Boards, Fisheries Boards, and powers possessed by local authorities to regulate pollution, were subsumed within the newly-appointed River Boards.[59] By that time, Ministry had approved catchment-board schemes costing over £23 million. A further £8.75 million had been given for schemes undertaken by the internal drainage boards and county councils.

Less positively, other premonitions voiced in the inter-war drainage debates also became apparent, as agriculture became more prosperous and better able to take advantage of such investment and advances in drainage technology. There was a resonance of the earlier controversies as to land reform and taxation during the brief Commons' Third Reading debate of July 1930,[60] when the Labour Member, Josiah Wedgwood, attacked the Bill for using rates and taxes to increase the value of land from, say, £5 per acre to perhaps as much as £1,000 per acre. As Philip Snowden before him, Wedgwood warned of how landowners were being handed 'a gigantic present'.[61] Wedgwood had in mind 'up-riverside residences'. The greater dilemma for conservation bodies after the second world war were the profits to be made from the drainage and agricultural 'improvement' of 'traditional' alluvial grasslands. Opponents of the Ouse Drainage Bill had themselves emphasized the importance of winter flooding for the husbandry of such meadows. Walter Guinness had confessed there were so many diverse and conflicting interests, that it was humanly impossible to accommodate them all.[62] As the powers and structures of the Land Drainage Act of 1930 came fully to be realized, such dichotomies as identified within agriculture itself became the subject of increasing acrimony between the farming industry and the burgeoning demands of the amenity and wildlife-conservation interests.[63]

[59] J. Sheail, 'Pollution and the management of water-courses in postwar Britain', *J. Contemporary History* 33 (1998), pp. 117–33.

[60] I. Packer, *Lloyd George, Liberalism and the Land. The Land Issue and Party Politics in England, 1906–1914* (2001).

[61] *PD, Commons*, 242, 218–26.

[62] *PD, Commons*, 207, 1209–17.

[63] J. Purseglove, *Taming the flood. A history and natural history of rivers and wetlands* (1989); H. Cook and T. Williamson (eds), *Water management in the English landscape. Field, marsh and meadow* (1999), pp. 210–43.

Book Reviews

Britain and Ireland

I. G. SIMMONS, *An environmental history of Great Britain from 10,000 years ago to the present* (Edinburgh UP, 2001). xii + 419 pp. Illus. £59.50 (hbk); £19.95 (pbk).

Attempts to review the environmental history of Britain in a way that balances past human activities against their environmental effects are relatively few in number. Attempts that handle both sides of such a review, and all periods, with equal command and assurance are even fewer. Simmons' *Environmental history of Great Britain* undoubtedly falls into this latter category. It ranges from 10,000 BP and the first hunter-gatherer-fisher communities down to the present-day. As well as dealing with some familiar and well-worked issues, such as forest clearance, it also incorporates a great deal of novel discussion. Indeed, one of its strengths as a text is to greatly broaden the debate, highlighting areas of past human environmental impact that previous overviews have glossed or neglected.

In an introductory chapter, Simmons outlines his framework for the book, including the key themes and environmental systems that are used to structure the discussion. From the start, he shows himself to be as skilled, and as comfortable, in drawing his material from social and economic history as from the environmental sciences, offering a genuine holistic survey. Nor does he shrink from the challenge of balancing what he calls objective history with what he refers to as moral history. The main body of the text opens with two chapters on environmental change in prehistory. Given Simmons' own research background, it is not surprising that the prehistoric chapters are full of informed synthesis and mature observation. In these, as in other chapters, he is very successful at interweaving outline models and general summaries with points of illuminating detail. His description of how human-created openness in the landscape appeared during the mesolithic and how it spread over the next four millennia provide examples of the former, whilst his reference to how the early agriculturalists probably used lime as an indicator of what was most easily cultivated and left the thin woodland cover over chalk soils to the last is an example of the latter.

Simmons' concern to cover all the different habitats and environmental systems occasionally produces an overly systematic text, one broken down into numerous sections and sub-themes. This is the case with the chapter covering the period 550–1700 AD and sub-titled 'closed and open systems'. The underlying themes for this chapter are twofold. First, he shows how the broad differentiation in ground ecology that had emerged between upland and lowland Britain during the later stages of the prehistoric was refined further into a still more differentiated land cover between 550–1700 AD. His sensitivity to the way different habitats were used and transformed comes across strongly here. Second, he takes the idea of the organic economy and explores the different ways in which it impacted on resources. Again, his ability to shape the larger picture is impressive, but his eye for the right illustration also stands out, such as in his observations about the number of trees needed to build a seventeenth century farmhouse or man-of-war. Indeed, when we realize the scale of consumption stemming from such purposes alone, the organic economy does not entirely convince as a sustainable economy, at least not as a closed economy. Whilst Simmons does not think that the period 550 to 1700 AD experienced changes as profound in their environmental effects as, say, the first coming of agriculture, he does see the eighteenth century as a watershed. Land improvement and enclosure transformed previously underused habitats, such as heathland, adding them to what he calls 'geometrized' landscape. More significantly, coal and steam began the transformation of environment through both their resource demands and waste effects. His introduction of these themes, and their expansion in a chapter dealing with industrial growth, 1800–1914, are two of the most successful in the book as over-arching reviews, partly because his programmatic approach manages to draw in themes that are neglected in other, similar texts.

The book concludes with chapters dealing with the periods 1914 to 1950 and 1950 to the present. Government and archival sources are abundant for these periods. Simmons chooses well, producing cleverly-worked discussions that range widely, from air pollution and sewage to fishing. As in other chapters, he is strong at digesting the technical and teasing out what is essential to his purpose in a highly readable way. As these events shape

current environmental debates, it is not surprising that here Simmons interweaves the moral with the scientific or objective. His story about T. H. Huxley, who in 1883 denied the possibility of over-fishing either then or in the future, captures well the problem of the modern environmental debate and how much we still have to learn about trends. As J. K. Galbraith put it, there are two types of people who don't know: those who know they don't know and those, like Huxley, who don't know they don't know. Simmons is also quick to emphasize the lessons of an historical perspective, such as in his reference to the fact that much contemporary site designation or protection in the UK is really too static when seen beside the long-term pattern of environmental flux.

This is easily one of the more successful and authoritative books on the environmental history of the UK and arguably the most successful to date in bringing the human and the environmental together with equal understanding. It is well written, imparts a real breadth to the problem and moves freely between the large-scale perspective and the case study or local illustration. For those who are teaching the environmental history of the UK, this will be a benchmark text.

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G. H. R. KENT (ed.), *The Victoria history of the counties of England. A history of the county of York East Riding*, VII, *Holderness wapentake, middle and north divisions* (OUP for the Institute of Historical Research, 2002). xx + 455 pp. 64 plates; 35 figs; 55 maps. £85.

There cannot be many agricultural historians who have not had reason to consult the Victoria County History over the years. Some of us curse the fact that their own county of interest (in my case Buckinghamshire) was one of the first out of the blocks at the beginning of the twentieth century and fully into print by the end of the 1920s. The series has so dramatically improved over the years. So imagine the delight when a volume from my adopted county hits the desk. Volume VII covers the middle and northern divisions of Holderness wapentake. The area is more or less bounded by a line running due east from Hull to the North Sea, then running northwards to include the whole of the coast past Hornsea and practically to the boundary of Bridlington. It then cuts south-west to pick up the boundary provided by the River Hull which itself runs south west and then due south skirting to the east of Beverley, and finally down to the Humber in Hull. The south division of the wapentake was published in 1984 and some of the places in the north and middle divisions were covered in the Hull and Beverley volumes. The area is predominantly rural and agricultural containing just one town, Hornsea. It is also an area that is fast falling into the sea. The retreat of the Holderness coast has produced a special category of deserted medieval villages. The post-Domesday land magnates were the archbishops of York and the count of Aumale, but from the sixteenth century the dominant local family and the lords of Holderness have been the Constables of Burton Constable Hall (now the Chichester-Constables). The land is low lying and flat and dominated by glacial boulder clay. The need for drainage is self-evident, especially along the River Hull, but only solved effectively for the last two or three hundred years. Perhaps more than most geographically defined areas the enclosure history of Holderness is protracted. But close on forty per cent remained long enough in open fields to be enclosed by parliamentary acts in the eighteenth and nineteenth centuries, which places it high up in the league table of longest surviving open-field areas. After enclosure it became a major cereal producing area, but more recently was noted for the intensive rearing of poultry and especially pigs. The decline in agricultural employment from the nineteenth century to the present, for whatever reasons, does not diminish the importance of the area as a place of residence having as it does the city of Hull and the towns of Beverley, Driffield and Bridlington in close proximity for commuting purposes.

That is the geography of the area covered, and more or less the bones of the introduction, but the volume is mainly about the constituent parishes, villages, townships and hamlets. In this regard, it adopts the familiar pattern of the VCH in describing the location and main physical attributes of those parishes and places, including place name origins, the Domesday economy, fourteenth century poll tax details, and various other gems of information from a variety of standard or familiar sources. In addition, the equally familiar format involving the descent of the manor or manors and other estates is presented, as are details of the church, education, and charities. There is also rather more local detail on economic history than perhaps has always been the case in other VCH volumes, and given the location this is especially informative for agricultural historians. Local industries, fishing, and the servicing of industry and agriculture are also well covered. There are also a series of pen portraits on local government, mainly the operation of the manor courts, and the poor law administered by the churchwardens and the vestry, as well as references to the modern structures.

The degree of detail and its presentation is exemplary and a credit to the editor. But while there is nothing exceptional or unfamiliar to users of the VCH in general – you pay your money and you know what you are going to get – I must finish with a commendation for the many high quality maps that have been reconstructed or

redrawn from enclosure and other sources. They reveal a lot about the open-field structure in this part of east Yorkshire. In the seventeenth and eighteenth centuries it was simple in the extreme. The two-field village, township or hamlet dominated. About two thirds of the forty or so reconstructions reveal just two fields and only one third in three or four fields (but predominantly three). The only complications were the areas of common pasture known locally as carrs and ings, sometimes moors, as well as descriptions familiar elsewhere. Moreover, the overwhelming name of choice for the fields was simply based on opposite pairings of the four principal compass points.

MICHAEL TURNER
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DAVID MCCLURE (ed.), *Ayrshire in the age of improvement. Contemporary accounts of agrarian and social improvement in late eighteenth-century Ayrshire* (Ayrshire Archaeological and Natural History Society, Ayrshire Monographs 27, 2002). 192 pp. £6 incl. p & p from Ronald W. Brash, AANHS, 10 Robsland Avenue, Ayr KA7 2RW.

This monograph contains two significant contemporary accounts of agriculture and rural life in the west of Scotland in the final quarter of the eighteenth century, namely the Ayrshire section of Andrew Wight's *Present state of husbandry in Scotland* (Edinburgh, 1778-84) and Colonel William Fullarton's *General view of the agriculture of the county of Ayr* (Edinburgh, 1793). The authors adopted very different approaches to their subject. Wight's book was the result of several surveys throughout Scotland seeking examples of good agricultural practice that could be widely disseminated. The surveys and their publication were an initiative by the Commissioners of the Annexed Estates who managed those estates in the Highlands and neighbouring counties that had been forfeited from landowners who were involved in the Jacobite rising in 1745-46. Each estate is described in turn and Wight comments on a wide range of topics including soil conditions, crops, animal husbandry, enclosures and the benefits to be gained by planting shelter belts of trees. Wight's account is also notable for the way in which he identifies improvements made by many of the lairds on their estates. Lord Auchinleck for example was described as 'a most assiduous planter' and several letters written by landowners to Wight which describe their achievements were published in the original volumes. Finally, Wight also visited many towns in Ayrshire and he commented on manufacturing, markets, the value of town dung and the availability and price of labour. In contrast, Fullarton's study follows the familiar thematic structure of the early Board of Agriculture county surveys. Each topic is dealt with in broad terms and while examples of experimentation and innovation are to be found, such as the introduction of different breeds of sheep, much of the study is given over to suggested improvements. Unlike later surveys such as William Aiton *General view of the agriculture of Ayr* (Glasgow, 1812), Fullarton's account frustratingly contains very few references to estates and individual places except when dealing with topics such as burgh landholdings and manufacturing. Much of his effort seems to have gone into a statistical summary of the population, number of landowners, acreage, valuation of land and a brief description of prevailing soil and land use characteristics of each parish.

In addition to the reprinted eighteenth-century texts, this monograph also contains an introduction written by the editor which provides readers with a short discussion of agrarian change in Ayrshire, a biography of Andrew Wight and some discussion of late-eighteenth century publications of interest to agricultural historians. A separate chapter is devoted to the life and career of Colonel Fullarton. The appendices comprise a list of Fullarton's publications; an explanation of Scottish weights and measures; a discussion of the role of lime and lastly an example of the cost of enclosing and improving land in Dreghorn parish. Each section of the volume including both reprinted sources is fully referenced with detailed footnotes. A map and index to Ayrshire parishes is also provided which will help readers to locate places mentioned by Wight and compare the characteristics of adjacent parishes in the valuation produced by Fullarton.

This publication makes available to a wider audience two books which are only available in comparatively few libraries. The editor and the Society are to be congratulated on the production of a very useful monograph. The extensive footnotes should help readers easily locate related books and journal articles and may encourage local historians to investigate the detailed evidence for the improving movement on Ayrshire estates in local and national archives.

DOUGLAS G. LOCKHART
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JOHN HATCHER AND MARK BAILEY, *Modelling the middle ages. The history and theory of England's economic development* (OUP, 2001). xiii + 254 pp. 1 table; 3 figs. £30.

This is an intriguing book which establishes, in the broadest terms, historical approaches to change in the medieval English economy. The core of this six-chapter study involves discussion of the three significant driving forces for economic change in the period: population, class and commercialization. Hatcher and

Bailey set these out and consider, in each case, their strengths and weaknesses. Thereafter, the authors discuss the general problems, not just of each model, but of economic modelling in general, drawing attention to the inevitable associated generalizations, evinced in the disregard of the specifics of time and place. Thus, the work of Postan, Hilton, Brenner, Britnell, and others, as well as the contribution of early theorists, is set out and discussed. They also offer, in an engaging final chapter, an alternative by attempting to admit into the discussion what, as they suggest, 'instinctively we know', that is, 'that historical outcomes are determined by a wide rather than a narrow range of forces and events, and that these forces and events are variable rather than fixed, and interdependent rather than independent' (pp. 208–9).

One of the strengths of the book, and one that meets, in many respects, the intention of its authors, is its potential role as an introduction to the historiography of the medieval English economy. This contribution is enhanced by a useful guide to further reading which follows the text. In particular, the volume offers a valuable pulling together of themes which, as an exercise, encourages historians and students to address questions of historical causation. It is very useful to see two leading economic historians engage fully with these sorts of issues; in that sense, also, the volume responds to earlier work by S. H. Rigby, as in his article on historical causation (*History* 80 (1995)). An engaging aspect of the work is the opportunity which it permits for the authors to reflect, as they and, of course, we, must, on the potential – or lack of potential – for historians to establish a causal hierarchy. Hatcher's telling phrase from his *Past and Present* article of 1994 (vol. 144), that 'devastating waves of mortality caused by a mutation in a micro-organism carried by fleas on the backs of rodents living at high altitudes in the remote steppes of Asia are not easily fitted into a dialectical process', is reworked here as a perfect indication of the problems of causation, and the identification of primary movers (p. 228).

But beyond the reflection on questions of causality and primacy, and the observation that we should not be drawn into simplification and generalization, there is also the further reflection on our innate inability to avoid a commitment to linearity, a conviction that is expressed both explicitly and implicitly here. While Hatcher and Bailey express some consternation at their own labelling in earlier work by other historians, labels which they essentially reject, it is undoubtedly the case that both of the authors have invested more of their past energies in promoting certain positions above others, an inevitability, of course, which should shock no one, and which is hinted at here in a rather more trenchant discussion of, for instance, class than of population. In that sense also this highly enjoyable and provocative volume offers an important and useful perspective on historians and their writing as regards historical positions. It also affords us some insight into our ability to reflect upon the nature of our own endeavours: what is 'partisan' to the reader (p. 238) might well be a balanced synthesis to the author.

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RAY LOCK (ed.), *The court rolls of Walsham le Willows, 1351–99* (Suffolk Records Society 45, 2002). vii + 234 pp. 4 plates; 2 maps. £30.

This second volume of translations of the Walsham le Willows court rolls is as welcome as was the first. It provides an accessible and very interesting edition of manorial court records from this Suffolk lay manor for the second half of the fourteenth century. In his introduction, Ray Lock, as in the first volume for the early fourteenth century, sets out the essential history of the manorial descent and the nature of the documents as well as the particular evidence of the rolls. Lock describes the nature of the curial form, with separate discussion of, *inter alia*, court officials and procedure. He also discusses the tenantry, their landholding as well as their demography, a topic on which he has also published in earlier work. Lord-tenant relations are also given some attention as is the impact of plague on the manor.

In this introduction, Lock manages to hint at a number of important entries in the rolls. While their cumulative message is, undoubtedly, open to the sort of analysis that might permit arguments to be constructed regarding, say, the behaviour of the land market, the level of seigneurial reaction, and so on, there is much of particular and singular interest in this series. Amongst some of the highlights in the Walsham rolls are the entries which touch on the way in which the court was held and reveal the extent to which the lord oversaw judgements through the agency of his steward. Of real note here is the letter, written in French, from the lord of Walsham to his steward, directing him in the resolution of a dispute between two tenants in the manor court (p. 162 and appendix, p. 209). Similar references to the lord's direct involvement in the manor court at Walsham, especially in inter-tenant disputes over landholding, appear elsewhere in the rolls (for example, pp. 192–3; see also plate 4) and offer, in a manner far more explicit than is usually the case, an important insight into the management of this private jurisdiction.

There is also much of value with regard to custom and the role of the village community, including the statement by the homage, when questioned as to the extent of their obligation in 'recognition' of their new lord, that 'nothing is remembered of the payment', except that it is

clearly smaller than the lord imagined, not a fixed amount and at the 'courtesy' of the respondents! Finally, there are a series of very detailed maintenance agreements recorded in the later rolls (for instance, pp. 180–1), which will be of interest to those interested in, for example, life-cycle, diet, and provision for the elderly.

Usefully, and bravely, Lock, as in the first volume of the Walsham court rolls, includes plates of some of the rolls, which, for the first court, one of only two courts (out of 99) which is offered as a Latin transcript, allows easy comparison of his Latin text with the original. Such a comparison does reveal the occasional minor error or omission (as for instance, p. 28, in the entry recording the seizure of the property of Agnes Sket and its regrant as a farm, where 'est' is given for 'fuit', etc.); but the message of the text is not lost. While the selection of plates from the text is well-judged, an additional plate, of the Norman-French letter from the lord to the steward, the text of which appears in the appendix, would have been a real benefit. Irrespective of minor carpings, Lock deserves the wholehearted thanks of students of late medieval rural society who, through his considerable efforts, have been afforded access to a wealthy and important series of manorial court rolls.

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MICHAEL J. BRADDICK AND JOHN WALTER (eds), *Negotiating power in early modern society. Order, hierarchy and subordination in Britain and Ireland* (CUP, 2001). x + 316 pp. £40; TIM HARRIS (ed.), *The politics of the excluded, c. 1500–1800* (Palgrave, 2001) ix + 295 pp. £52.50 (hbk); £17.99 (pbk).

In the last decade early modern historians' definitions of the 'political' have expanded. At the same time, historians have also widened and deepened the boundaries of the 'political nation'. Politics is no longer confined to the activities of central government, and its personnel. The political nation is no longer simply the Privy Council, and its agents in the localities, the JPs and the 'county community'. These two collections of essays advance this process, and our understanding of it, to a new level. Rural historians will particularly want to seek out the essays by Steve Hindle on 'Exhortation and entitlement: negotiating inequality in English rural communities, 1550–1650', John Walter, 'Public transcripts, popular agency and the politics of subsistence in early modern England', and Dan Beaver, '"Bragging and daring words": honour, property and the symbolism of the hunt in Stowe, 1590–1642', all in Braddick and Walter, and Hindle (again!) on 'The political culture of the middling sort in English rural communities, c. 1550–1700' in the volume edited by Harris. But it is not individual essays but the two books as a whole which have major implications for the writing of rural history.

In both studies, 'politics' is redefined as 'power relations', writ broadly across society, not merely the business of government. The essays in Braddick and Walter take this the furthest, discussing not only local administration, property rights, the creation of social order in England and Ireland, and the construction of religious orthodoxy, but also power relations in the sphere of personal life, illegitimacy, sexual mores in London and child abuse in the early modern period. The essays edited by Harris adhere more firmly to conventional political themes, such as popular protest, power in the parish, and contests over authority, but explore the extent of participation, and the political strategies of participants in new depth.

The main difference between the two volumes is methodological. The Braddick and Walter volume is a collective attempt to apply or evaluate the concepts of the anthropologist James C. Scott. Scott's work is best known to historians involved in peasant studies. It analyzes power relations by deconstructing verbal and written accounts, to identify the 'official' and the 'hidden' or 'contested' 'transcripts'. Scott has suggested reconstruction of these transcripts can help the observer understand the identity, coherence, values and strategies of groups with different relations to official power. Exclusion from the 'official transcript' or from formal positions of power, does not, in Scott's view, necessarily represent an absolute deprivation of social or political power among the socially 'subordinate'. The essays in Braddick and Walter set out, systematically, to reconstruct these hidden transcripts, and through them to disclose the negotiations of personal, gender, ethnic, economic, political and religious power that occurred in early modern society. The essays in Harris are also concerned primarily to discover this hidden transcript of power in early modern England, and are merely lacking the Scottian gloss.

This similarity means that the two volumes have common emphases. In particular, as they expand the perimeter of the political nation both sets of essays lay considerable stress on the agency, organizing powers and divided loyalties of the rulers of the parish, the 'middle sort of people'. They feature as key agents in society and politics in the essays by Wood, Hindle, Goldie, Harris and Rogers in the Harris volume, and in Hindle, Walter, and Braddick in Braddick and Walter. This group occupied an equivocal position in relation to formal political enfranchisement. They were involved in parish and judicial office and often possessed voting and property rights. Yet, they also represented their communities, as the top link of the chain of the socially and politically disenfranchised. Often, they were the prime negotiators of power,

socially, politically and spatially. In examining their influence over the 'official transcript', both volumes pay careful attention to the choices, strategies and interests of this group. They emerge as important arbiters in personal and public politics throughout the period, from the mass rural rebellions of the early sixteenth century, to the rowdy street politics of the eighteenth century.

Both volumes also share a common assumption, that those below the enfranchised, office-holding elite exhibited a clear and repeated political awareness, knowledge, and the capacity to exert influence on the elite. This is evident in the essays by Shagan, Wood, Bellany, Harris, Walter, and Gillespie. Political activism among the bulk of the population is depicted as consistent, rather than episodic, a constant presence to be dealt with by those in authority, not the momentary consciousness induced by short-term crises. This demonstrates that the concentration of 'Revisionist' interpretations on the politics of the court or the political centre and on politics narrowly defined ('government and the business of government'), obscures the effort, energy and endeavour that went into ruling early modern England and its people. These essays also illustrate that this process was constant and active, and that governments that failed to negotiate with sections of the people (notably Charles I's and to lesser degree Henry VIII's) could not expect blind, apolitical obedience. This provides an enriched understanding of the political process, showing that authority, like liberty, was the result of eternal vigilance, rather than of unquestioned deference, or naked shows of force.

Such approaches work best in the public rather than the personal sphere. As Gowing points out in her essay, the variable distribution of power within gender relations makes it difficult to reconstruct 'women as a coherent subordinate group with a shared culture of resistance'. The same might be said of children, their abusers and those engaged in other forms of illicit sexual activity. As Braddick and Walter also observe in their very important and thoughtfully-argued introduction, in unsympathetic hands Scott's interpretation can lead to the creation of a binary divide, between those in authority versus the 'subordinate', and the 'official' versus the 'hidden' transcripts. Wood's essay on the language of popular politics, which is not written with particular reference to Scott, comes closest to arguing for the polarities of 'elite' versus 'plebeian' identities, but he emphasizes that this duality is found in contemporary terminology, and illustrates the hidden fault-lines within these two opposed groups. As these essays are 'post-Revisionist' in their understanding of politics, so in their analyses of identity and society they also avoid the artificial, arbitrary distinction between 'elite' and 'popular cultures'.

Reading the two volumes not only emphasizes their similarities, but it also introduces a slight paradox. The essays in Harris would have been given more coherence by dealing with Scott's methodology explicitly (although essays by Wood and Rogers deal with his ideas implicitly). The search for the political ideas, communications, organizations and activities of 'the excluded' can be conceptualized fruitfully as the reconstruction of the 'hidden transcripts' of power. Similarly, in Braddick and Walter, an explicit consideration of the fact that people could adopt different social identities or negotiating positions at the same time may have enriched the evaluation of Scott's ideas for historians (although this point is noted in passing by Walter, Braddick, Lake, and Champion and McNulty).

Therefore cross-pollinating ideas and concepts from both volumes gives the reader genuine insights into the politics and strategies of power of those beneath the level of the formally enfranchised or in positions of authority. Both studies extend our understanding of politics, not merely by broadening the definition of the term to include other power relations in society, but by deepening our knowledge of the political process in a non-democratic society. They demonstrate that monarchs and royal governments did not translate their decisions into policy and practice simply by a process of magic or magnificence. Rather, they had to cajole, coerce, negotiate, conciliate, advance, retreat, and listen to the ruled. Structures of government had likewise to build in the perspectives of those who they co-opted. The result was not democratic, equitable, representative or 'popular'. Instead there were a series of social and political compromises that reflected the distribution of wealth in the kingdom rather than the distribution of population, and which were periodically threatened, reshaped and renewed.

Those in authority were made to understand that they were an unrepresentative minority, weak in terms of numbers, dependent upon support in order to exercise power, accountable to norms of 'stewardship'. Those who were nominally subordinate were kept away from the levers of power by property qualifications, inside knowledge, social networks and patriarchal ideology. However, just because it was difficult for either to visualize a world without servants or political masters, this does not mean that power relations were immutable, or non-negotiable. The greatest weapons of the 'excluded' were the fears of the elite. Both volumes demonstrate the political awareness and judgement shown by the excluded in marshalling these fears and this power over three hundred years, until the gradual advent of representative democracy.

The main methodological question posed by these two works is whether James C. Scott's ideas assist us

in understanding this process. The answer given by Braddick and Walter is that the notions of the 'hidden transcript' and negotiations of power by the 'subordinate' in society are investigative tools not interpretative panaceas. We should not expect to find one 'official transcript' or authority-group, opposed by a single, unofficial version. The detailed studies in these two volumes demonstrate the sheer complexity of social identities and power relationships in early modern England and Ireland. As Braddick notes, they also illustrate the historian's need to participate in Clifford Geertz's world of 'thick description', 'for here it really matters whether the movement of an eyelid was a twitch or a wink, or a burlesque of a wink'. As a consequence, discussions phrased in terms of simple polarities of power now appear as redundant as political analyses confined to the social elite.

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L. A. CLARKSON AND E. MARGARET CRAWFORD, *Feast and famine. A history of food and nutrition in Ireland, 1500–1920* (OUP, 2001). x + 325 pp. 30 tables; 28 graphs. £25.

Irish cuisine has never attracted its Elizabeth David or even its Jamie Oliver, and for good reason. Why should they bother when what is distinctive about Irish fare – items such as colcannon, boxty, dip 'n onion (potato-based dishes), drisheen (a blood and oatmeal sausage), crubeens (boiled pigs' feet), and buttermilk – have already disappeared from Irish tables, and even bacon and cabbage, soda bread, and Irish stew are fast becoming heritage foods? Irish food has also lacked a specialist history until now, though there have been monographs about the impact of the potato in Ireland and on the history of brewing and distilling, and several studies of Irish agricultural history.

Leslie Clarkson's long career as one of Ireland's foremost economic historians and Margaret Crawford's dual training as a nutritionist and historian qualify them admirably for writing this ambitious and important book. In Ireland multiple authorship has tended to be the exception in economic and social history – four-fifths of the contributions to *Irish Economic and Social History* over the past decade have been single-authored – but Clarkson and Crawford epitomize its advantages. *Feast and famine* is the culmination of their partnership.

The sources available to them mean that we learn more here about the well-off in the community before 1800 and more about the poor thereafter. The earlier chapters rely more on big house accounts, tours, diaries, and the like, mainly of Anglo-Irish provenance; the later more on official sources. The dietary corollary of the secular shift from mainly pastoral to mainly arable farming is well spelt out, but the implications for nutritional status are less clear, at least for the earlier period. Most of the hard information on food intake for the post-1800 period concerns the less well off, and it confirms that, years of famine apart, the monotonous diet of the Irish poor was also quite nutritious. Much of the book concerns Ireland's fateful dalliance and love affair with the potato in the centuries before the Great Famine. The relative longevity and good health of the pre-Famine Irish has been highlighted in recent years, and Clarkson and Crawford add their own insights based on a careful scrutiny of evidence on working-class diets both before and after the Great Famine. The finding that the rural poor consumed enough carbohydrates and proteins to be healthy, though not enough fat, squares with anthropometric and impressionistic evidence. While thus corroborating the quality of the potato as a food, Clarkson and Crawford allow more room for supplements in the diet of the poor than previous accounts. And they argue that the nutritional status of the poor may have deteriorated when they switched from potatoes and skimmed milk to tea and bread (pp. 236–240).

Famine is a recurring theme and the famines that preceded the cataclysm of the 1840s are well documented here. But famine does not dominate: indeed, Clarkson and Crawford stress the infrequency of big famines (pp. 132–3). This is an important point, given Irish poverty. They also speculate on the negative effects of the Great Famine on the physical and mental development of survivors' children in the worst affected areas. This is a challenging topic for future research.

Hardly surprisingly, alcoholic drink features too, though the Irish reputation for drinking is not upheld. Against the ancient stereotype of an inebriated gentry Clarkson and Clarkson invoke Arthur Young's remark that 'hard drinking is rare among people of fortune' (p. 53) and produce excise and import data that tell 'a sober story'. Poverty constrained consumption at the other end of the pecking order, leading the *Freeman's Journal* to opine in 1861 'perhaps the most abstemious race in the world is the labouring class of Irishman' (p. 108).

Two puzzles not definitively resolved here concern the failures of the Irish to develop their own cheeses and to make more of the abundant fish surrounding them (pp. 45–7). Clarkson and Crawford tentatively suggest that these may have been due to 'a shortage of equipment' and the requisite skills (pp. 18, 81). As long as such puzzles persist there is room for both economic and cultural interpretations of food consumption choices. Economists tend to see rising incomes and of the relative price shifts and increasing variety brought by about globalization as

largely responsible for such shifts; Clarkson and Crawford also wisely allow culture and habit a role.

Some gaps remain. Topics such as food hygiene, the shifts in the daily and seasonal rhythms of eating and drinking, the changing extent of food storage, and the evolution of potato and grain varieties might have been given more space. But besides being an able and reliable account of Irish diet over half a millennium, *Feast and famine* is also an excellent introduction to much of the new research in Irish economic history over the past two decades.

CORMAC Ó GRÁDA
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NEIL R. WILKYN AND BARNETBY WEA, *All things forgotten. Village life in Barnetby in the sixteenth and seventeenth centuries* (WEA Barnetby branch, 1999). 190 pp. Illus. £12.50 incl. p & p, from WEA Barnetby, 48 Railway Street, Barnetby, Lincs DN38 6DQ.

North Lincolnshire has produced a plethora of fine WEA local historians including Rex C. Russell and Geoffrey F. Bryant. A strong tradition of WEA classes and published work exists in such places as Barton on Humber, Keelby and Winteringham. Now Barnetby can be added to the list. This book is the result of work from 1996 to 1999 on probate inventories, first under the tutelage of Nick Lyons and then Neil Wilkyn. The period studied was from the 1520s to 1735. There were 75 inventories for this period.

Barnetby le Wold is about eight miles south of the Humber and four miles east-north-east of Brigg. It is a parish of 2,500 acres, one third of which lies over the 150 foot contour. It lies in a natural west/east gap of the Lincolnshire Wolds which was utilized for road and later rail and motorway links. An act of 1766 enclosed the vast medieval north and south fields, the award of 1768 allocating 2260 acres.

The book has been divided into two parts, the first being an analysis of the inventories. It has ten chapters on such topics as rooms and their uses, cooking and eating equipment, luxuries and debts. The two chapters on the appraisers and agriculture, crops and livestock are particularly interesting. The second half of the book consists of all the transcribed inventories and a glossary. Use is also made of other sources such as religious censuses, parish records and glebe terriers.

Nationally, work on probate inventories has been led by such scholars as Mark Overton and Margaret Spufford. They brought inventories in out of the cold. There is a small amount of work based on Lincolnshire inventories, notably by Dr Joan Thirsk and Dr J. A. Johnston. However, some authors in the *History of Lincolnshire* series for the period studiously ignored probate inventories. If carefully used, they can be a very valuable source for local history. Among their limitations is the fact that surviving inventories relate to only a small proportion of the population. Comparison with the bishops' transcripts show that 77 per cent of the deceased in Barnetby left no inventories. Women and the lesser sort are very poorly represented. Another drawback is that inventory wealth is not total wealth, as real estate is not included. Sometimes debts too are omitted. Land tenure is not given. Where crops are shown, crop values are stated but sown acreages generally are not. Finally there is the problem of the rather subjective valuations given by the appraisers. In Barnetby, 73 per cent of the appraisers could sign their names, but this was not necessarily an indicator of high levels of education. On the credit side, inventories do lend themselves to statistical analysis and the study has done this.

The book has many illustrations. They do not all enhance the text. Some of the maps have small or blurred lettering (p. 54.). The map on p. 11 has no northern coastline. However, the main difficulty is that 75 inventories are rather too few to provide a sensitive barometer of change over a 200 year period. Bearing all these factors in mind, the study is an admirable and interesting one. This book is a welcome addition to local history and will act as a model and source book for other WEA groups or individuals who wish to research the history of their village through the medium of probate inventories. It is a credit to a relatively small group of local historians that they have not only researched but published their results.

SHEILA MCA. STEVENS
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TOM WILLIAMSON, *The transformation of rural England. Farming and the landscape, 1700–1870* (University of Exeter Press, 2002). x + 199 pp. 35 figs. £47.50 (hbk); £18.99 (pbk).

Landscape history, notes Tom Williamson, does, 'what historical geographers used to do, before many of them lost interest in maps and embraced postmodernism'. Happily the pages that follow are totally free of the baroque excesses and gothic absurdities of the postmodern world and Williamson provides a text remarkable for the breadth of its scholarship, its clear understanding of the scientific principles underlying some of the changes he describes, and (relatively rare in agrarian history texts) its sound and practical common sense. Over the course of seven chapters he reviews the whys and wherefores of agrarian change and revolution and describes in detail temporal change in various regions of England including the midland clays, the light heaths and chalklands, the areas to the north and west of the midland plain and

the clays and fens of East Anglia. As one might expect from Williamson's own academic pedigree, the approach throughout is from a landscape perspective and the various economic, agricultural and ecological themes are interwoven to present a rich tapestry of regional variety. Thus, the natural environment moulded social, cultural and environmental structures and society, landscapes and farming were intimately connected to form distinctive patterns in distinctive regions.

Inevitably a work of this sort covers a good deal of hitherto well-cultivated ground. We are confronted, for example, with the rather hoary old arguments about the significance of the turnip, the vexed question of the contribution of the small farmer to agrarian change, the effect of enclosure on productivity and the growing social divisions in rural society as agrarian improvement forged ahead. However, Williamson deals with this material with a commendable lightness of touch and offers an abundance of fascinating minutiae of landscape change. His chapters on the midland shires (well known to me) and the fens (better known to him) are typically replete both with practical detail and perceptive insight regarding, in particular, the effects of enclosure and drainage on landscape change. The rationalization of road networks, temporal changes in field shape, the creation of woods, coppices and parks, the contraction of villages, relocation of farms, peat shrinkage and the various attempts to arrest it, the construction and operation of wind and steam pumps – little escapes the author's eye. Reading Tom Williamson's account of the triumphant transformation of the fens into prime wheat and potato land and thinking of Tony Phillips' masterly works on the drainage of the English clays leads one to despair of the lunacy of present-day policy makers who, with a jejeunity alarming in the extreme, propose the blockage of field drains to create more wetland! For all the significance accorded by historians to the agricultural revolution on the light lands, Williamson argues, with some justification, that the creation of the fenland arable made the greatest contribution to increased demand for cereals in the eighteenth and nineteenth centuries. Dutch engineers in the time of William III made some inroads, but it was the genius of the Victorian drainers (capable of creating an infrastructure whereby seventeen steam pumps could drain 222,000 acres) which ultimately moulded this rich Canaan.

It goes without saying that a book of so wide a scope will attract its critics. The doyen of English agricultural historians will raise an eyebrow to see his name transmogrified to 'George'; the inhabitants of that charming Northamptonshire village of Wilbarston will quibble at 'Wilbaston', while field botanists will be surprised to see *Holcus lanatus* described as a herb. Meanwhile, regional specialists, be they agricultural historians or historical geographers, will quibble over some of Williamson's points of emphasis or some of the more technical aspects of agrarian change. Williamson claims, for example, that there was 'significant' improvement in the quality of upland pastures in the eighteenth and nineteenth centuries. I am not sure what 'significant' means in this context, but in any case would offer the view that very little improvement in the nutritional quality of grazing throughout Britain as a whole occurred in the pre-Stapledon years. In any event, writers on agricultural history in any shape or form need to qualify rather vague terms like 'significant', 'substantial', 'when the dung was at its best', 'infertile soils' and the like. And then we come to the difficult question of cereal yields and cereal quality. Tom Williamson, like most others writing in this field, expresses yields in terms of bushels per acre. Given that on the one hand bushel weights will vary widely according to season, soil type, variety and fertilizer treatment, and that on the other an undergraduate readership is likely to be wholly bemused by the bushel, perhaps it is time to abandon this rather arcane unit in favour of something more logical – pounds per acre or kilograms per hectare, perhaps. This term 'bushel' presents all sorts of problems. To begin with it is by no means always the case that fertilizer treatment increases volume at the expense of bushel weight, while to claim modest increases in volumetric output of cereals as a result of enclosure may not tell the whole story since bushel weights themselves may have changed due to more favourable nutrient flow within the system.

Williamson rightly observes that the wholesale transformation of rural England in the eighteenth and nineteenth centuries took place at the expense of ecological diversity. Fenland drainage, leading to the loss of reed beds, peat cuttings, meres and sluggish rivers significantly impoverished the flora and fauna of the east, while the improvement of heath, chalk and downland decimated ecological niches elsewhere. Whether those and other changes represented 'an ecological disaster on an awesome scale', however, is a matter for argument. After all, the disappearance of the unfortunate bustard and the reduction of heathland butterfly and insect populations has to be set against the environmental enrichment offered by the hedges, parks, copses, ponds and roadside verges of the 'improved' landscape of enclosure so admirably described by the author. The modern green movement has successfully perpetuated the myth that intensive farming is wholly responsible for reduced wildlife diversity in the countryside when the case is far from proven. The argument conveniently ignores such effects as the decline of the gamekeepers (and the concurrent surge in the number of foxes, corvids and other small

mammal predators), while it is clear that many of its proponents have not read the works of A. G. Street, H. J. Massingham and others who testify to the deleterious effects on the natural flora and fauna of the inter-war rural depression when much of rural England sank into weed-infested desuetude. Tom Williamson's eco-environmental judgements are commendably balanced, although even he cannot resist the statutory mantra of farmer-bashing when he refers to the 'onslaught on the environment' mounted by the technologically sophisticated farmers of the post-war era. Few would gainsay the errors of the 1960s and 1970s, but anyone who takes the trouble to look carefully at the contemporary English landscape (preferably on foot and definitely not from the window of a car parked in a lay-by on an arterial road) cannot fail to be impressed by the environmental enhancement undertaken by farmers over the past twenty years. Ponds have been dug, thousands of miles of hedgerows planted, vernacular buildings have been conserved and a rich new diversity of crops planted in a countryside now more heavily-wooded than for generations. The 'onslaught' is over; a new mood prevails, and if one ignores the bedraggled beastliness of 'setaside' the English landscape remains as glorious as it ever was. This triumph, like that so elegantly described by Williamson, is deserving of celebration.

Tom Williamson's excellent book serves as a useful complement to the writings of Mark Overton, Michael Turner and other contributors to the burgeoning literature on agrarian change. It raises many questions and provides many answers; it is both scholarly and accessible, and besides promoting debate among specialists it will offer a stimulating experience for all those interested in countryside history. Williamson manages to bring to life many of the themes and topics which for too long have slumbered in indigestible form in the ranks of academic journals and weighty, overpriced books.

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JOHN CHAPMAN AND SYLVIA SEELIGER, *Enclosure, environment and landscape in southern England* (Tempus Publishing, 2001). 160 pp. 35 illus. £30.

This book is a comprehensive survey of post-1700 enclosure in the four counties of Dorset, Hampshire, Sussex and Wiltshire. The research on which this book is based forms part of the authors' wider ongoing 'National Enclosure Project'. The book's stated aims are to examine the role of different types of enclosure in the period and to assess the impact on the landscape and environment, though the focus is in fact overwhelmingly on the first of these aims.

The most significant finding to emerge from this book is the continuing importance of non-parliamentary enclosure across both the eighteenth and nineteenth centuries. In these four counties as a whole the authors suggest that non-parliamentary enclosure was more important than parliamentary enclosure after 1700 and they speculate that this may prove to be typical of counties outside of the Midlands where eighteenth and nineteenth century enclosure was more exclusively parliamentary in character.

The authors put each enclosure into one of three major categories: parliamentary enclosure, enclosure by formal agreement and informal enclosure. Parliamentary enclosures need no further explanation. Enclosures by formal agreement were effected by a written agreement signed by all the interested parties. Informal enclosures cover those brought about by piecemeal enclosures, by an owner who owned all the affected land and common rights, or by a tenant who controlled all the land and common rights.

Two introductory chapters are followed by one on sources which will be valuable to anyone trying to document either the presence of common land or its enclosure. But the meat of the book is contained in chapters on each of the four counties. For each county the authors have documented, as far as the available sources allow, all the open-field systems, commons and common meadows extant in 1700. They then go on to identify when and by what means each of the commonable elements was enclosed in the ensuing two hundred years and to assess the relative amounts of arable, pasture and meadow enclosed by these means. Because of the difficulties associated with determining the acreages affected by non-parliamentary enclosure the authors frequently focus on the number of systems extinguished by each method. The authors leave little doubt that in terms of the numbers of open-field systems, commons and common meadows enclosed, non-parliamentary enclosure was more important than parliamentary enclosure in much of the region.

However, this enormously valuable exercise is not documented as fully as it deserves in the book. The statistical information which the authors have produced is scattered through the text in forms which are inconsistent between and within chapters. Take Dorset as an example. We are told that there were 116 open-field systems but not to how many townships these belonged – elsewhere we are informed that some townships had multiple systems. There were 132 townships with common waste and forty with common meadows. But how many townships were there in total and how many had none of these types of common land and how many had one, two or all three? We learn that one third of the field systems, half of the common meadows and one quarter of the commons

disappeared entirely by informal means but are not given the breakdowns between the different types of informal enclosures. The corresponding information for parliamentary and formal agreement enclosures are given in acreage terms without the numbers of systems affected. However, the acreages enclosed by each means are more important than the numbers of systems enclosed for the wider argument. Whilst the figure of 103,000 acres enclosed by parliamentary enclosure is clearly derived from the awards, the derivation of the figure of 87,000 acres for the non-parliamentary enclosures is produced without explanation. Given the impossibility of calculating acreages for most of these, providing an account of the estimation procedures used will be crucial if these figures are to gain general acceptance.

The four substantive chapters also contain much narrative material illustrating the negotiations and manoeuvrings which preceded and accompanied the various types of enclosure. Finally an appendix contains details of each of the parliamentary enclosures. Space has not been found to list the open-fields, commons and common meadows extant in 1700 nor the non-parliamentary enclosures. This is a shame because these would have been invaluable for local historians, though the authors have already published a very full account for Hampshire (*A Guide to Enclosure in Hampshire 1700–1900*, Hampshire Record Series 15, 1997).

Sadly, the publisher's editing of the book leaves something to be desired. For example, Figure 32 is seriously mislabelled and lacks a key while Figure 9 is referred to on page 62 as Figure 4.6 and the headings in the appendix are over the wrong columns.

This book will be essential reading for students of enclosure. However, it is to be hoped that the authors intend to publish a more complete account of the data elsewhere to do full justice to the vast labours embodied in the underlying research.

LEIGH SHAW-TAYLOR
Cambridge Group

CHARLES K. RAWDING, *The Lincolnshire Wolds in the nineteenth century* (History of Lincolnshire Committee, Studies in the History of Lincolnshire, 1, 2001). xiv + 246 pp. 20 tables; 50 figs. £25 (hbk); £12.95 (pbk).

The History of Lincolnshire Committee, having completed the publication of its twelve-volume history of the county, has embarked on a new series of monographs on various aspects of the county's history. This is the first of these monographs, and it gets the series off to an excellent start.

The Wolds form a substantial part of eastern Lincolnshire, comprising an upland region of some 350 square miles, about 45 miles from north to south and from five to eight miles wide. It is in fact a distinct *pays* in the French sense of being a region of coherent geographical characteristics; basically a smooth chalk tableland with loamy soils and few villages.

The interest of the Wolds for students of agricultural history lies mainly in the way in which they responded to the agricultural revolution from the beginning of the nineteenth century. In 1800 they were distinctly underutilized. The main activity over large areas of the upland was rabbit warrening. But thereafter, rising corn prices and falling rabbit prices led to the modernization of the Wolds. The story is then one of gradual improvement, so that the region became one of the great exemplars of high farming. The critical elements here were soil improvements, combined with turnips for feeding sheep. The result was a rotation which produced high yields and good profits. By the mid-nineteenth century, the region was one of the foremost grain growing and sheep breeding areas in England. The other notable feature was the size of farms, which were not unusually several hundred acres, or even over 1,000 acres. The large tenant farmer dominated the industry and much of the social life of the region.

In a region with few large centres of population and large estates, the most important group in society was that of the great landlords. The greatest was the Earl of Yarborough, whose Brocklesby estate covered some 57,000 acres in 1831. The other large ones were Henry Chaplin at Blankney (23,000 acres) and Christopher Turnor (21,000 acres) at Stoke Rochford. The policy of the larger owners was the liberal one of keeping rents low in the early years, as the land was improved and yields rose. After the mid-century they were more disposed to cash in and raise the rents. On the whole they seem to have run the estates fairly. There were few leases, and the system worked on tenant right. The 'Lincolnshire custom' was regarded as an exemplar of the type, and attempts were made to introduce it by legislation into the rest of the country. Some larger landlords also had a policy of directly letting cottages to labourers, bypassing the tenant of the farm. The aim here was to ensure fair treatment for the labourer, which would ensure a good supply of competent labour.

The great landowners' influence was seen in many ways apart from the purely agricultural. The second Earl of Yarborough, who was also the chairman of the Manchester, Sheffield and Lincolnshire Railway, was instrumental in running the railway line in a loop close to the Brocklesby estate, with its own convenient railway station, built in a style to match that of the estate. Tennyson d'Eyncourt rebuilt Bayons Manor as 'the ultimate Victorian mediaeval Gothic castle' (photograph, p. 63). The landlords' influence was felt locally as Justices of the Peace, as ecclesiastical patrons, as leaders of fox

hunting and as charitable donors. The influence of the great landowner and larger tenant farmer was greatest in the smaller villages, and in estate villages.

Whilst concentration on the activities of the great landowners might give an impression of seamless social harmony, this was clearly not the case. Social and economic relationships within the countryside were at a particularly low ebb at the time of the Swing riots in 1830, and Lincolnshire was prominent in the 'revolt of the field' which accompanied the rise of agricultural trades unionism in the 1870s. But that is not to say that between those times that peace reigned. Throughout this period there were various associations formed to combat agrarian crime. The 'Brigg, Barton, Caistor, Grimsby, Kirton and Winterton Association for the Protection of Property against Incendiarism' was formed in 1844 and was still in existence in 1865. Simmering discontent and endemic poverty was the lot of the bulk of the workforce, and the contrasts in society were enormous: 'when the Earl of Yarborough died in 1875 his stock of cigars sold for £850, or more than 18 years' income for a Lincolnshire agricultural labourer' (p. 159).

Dr Rawding has made excellent use of estate papers and other local and national sources in drawing a picture of the region, its economy and society, which is a model of its kind.

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ALAN ARMSTRONG, *The population of Victorian and Edwardian Norfolk* (Centre of East Anglian Studies, University of East Anglia, 2000). 142 pp. 29 tables. £9 incl. p&p.

Norfolk is an interesting county. It is, or at least was, quite remote, intensely rural; its people have a deep sense of their own special identity. It is a place of sky and sea and wind. In the Victorian and Edwardian eras it was not at the centre of things – no coal and only three small towns – but because of this it offers an excellent case study of demographic change in the agricultural regions of England. In this short book Alan Armstrong has done the county which first charmed him during National Service in the 1950s proud. This is both an account of a county's population history during seventy years and a guide for local historians. It is a model of clarity and good sense.

The book is divided into six chapters which do not quite follow the conventional structure of demography texts. Chapter One establishes the basic dimensions of the Norfolk population from the decennial censuses and demonstrates that whilst the county was capable of quite natural population growth its enumerated residents only increased by about 25 per cent between 1841 and 1911. Norfolk fed Victorian London with food and people. These roles, especially the latter, are highlighted in Chapter Two, 'Coming and going'. In migration terms Norfolk was a county of 'push' rather than 'pull'. In fact at least 85 per cent of its inhabitants were born in the county and although its towns did grow, they did so largely at the expense of the rural-agricultural sector.

Chapter Three turns the reader's attention to 'Disease and death'. In general there was a marked urban-rural mortality gradient in Victorian England and Wales. Most, but not all, rural areas experienced relatively low levels of mortality, and thus higher life expectancy, which in turn allowed for natural population growth. By 1911 Norfolk's inhabitants certainly did experience a life expectancy at birth higher than that of England and Wales, but for those who lived in Norwich there was little difference between local and national survival chances. Armstrong's account of mortality variation and decline has clearly been thwarted by the availability of statistics. It has, for example, proved difficult to chart the changing geographical variations in the infant mortality rate, that classic barometer of health and welfare, because annual rates are not reported for registration districts after the mid-1880s and because the records of the town Medical Officers of Health have not proved to be as comprehensive as might have been anticipated. Nonetheless, a rough sketch can be drawn and some attempt at explanation offered. But here some of the limitations of local (county) studies begin to become visible. Norfolk was not at the forefront of medical or sanitary innovation, yet its mortality declined almost despite itself. Here is one of the unresolved mysteries of Victorian demography to which Norfolk's experience could contribute: why did mortality from pulmonary tuberculosis decline from mid-century well before scientific identification and effective treatment? Norfolk was a high tuberculosis area (with the rest of East Anglia and Wales) and it too contributed to national decline. Was this a function of rising living standards (in diet and housing especially) or more to do with the virulence of the disease itself?

Chapters Four and Five cover, respectively, 'Getting wed' and 'Babies and birth rates'. The former points to the generally late age at marriage in Norfolk with a mean age at first marriage in the early twentieth century around 28 years. The latter uses Coale's fertility indices to chart the decline in marital and non-marital fertility, as well as suggesting some causes of the local fertility transition, causes which turn out to be universal rather than specific in their operation since it appears that fertility decline was remarkable uniform across Norfolk.

The final chapter offers some of the author's reflections on Norfolk and its population, together with the possibilities for local study. It offers a fitting conclusion

for the professional and amateur alike. After Kent and now Norfolk, let us hope that Professor Armstrong will be turning his attention to other counties.

ROBERT WOODS
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DIANE MONTAGUE, *Farming, food and politics. The merchant's tale* (Irish Agricultural Wholesale Society, 2000). 392 pp. Illus. £15

It is now well over thirty years since Professor Thompson first made the case for a second agricultural revolution, based on the increasing use of purchased inputs, especially of feeding stuffs and fertilizers. Beginning in the 1830s, the trend was strengthened by the increasing availability of cheap grain from the 1870s onwards. The cost of feeds, seeds, fertilizers and pesticides was equivalent to only about 17 per cent of the gross output of UK agriculture in 1870, but more than doubled by 1970. This transformation of agriculture implies the simultaneous rise of another industry of input suppliers. In many cases they emerged from the ranks of the corn merchants. In addition to buying the outputs of the harvest from the farmers, they sold to them the inputs required to produce it. And in turn supplying the merchants were the fertilizer manufacturers, seed breeders, feed compounders and agrochemical manufacturers. Without this complex network of businesses the technical and economic changes which have transformed agriculture in the last 150 years would be inconceivable, but with some exceptions, most notably the recent volume VII (1850–1914) of *The agrarian history of England and Wales* (E. J. T. Collins, ed., CUP, 2000), agricultural historians have largely ignored the supply trade. There have indeed been numerous company histories, often published by the companies themselves, but nobody has been brave enough to tackle the whole story.

In some ways this neglect is surprising, because the agricultural supply trade is an interesting case study of the transition from atomistic family businesses to oligopolistic transnational corporations with globalized names such as Advanta, Aventis, and Novartis, and from traditional technology to science-based industry. Conversely, the neglect may be understandable, given the complexity of the trade. There were numerous local merchants selling everything from baler twine to pesticides, often supplied on credit against expected future purchases of grain. Many fertilizer and feed producers dealt through them, but others sold direct to farmers using their own extensive sales forces. Then, latterly, there were numerous mergers and acquisitions involving endless name changes as the whole industry was rationalized and combined so that feed manufacturers were owned by grain merchants and seed suppliers by agrochemical companies. Perhaps only somebody with Diane Montague's long experience as one of the leading specialist journalists in the trade has the necessary background knowledge to untangle it all.

Over half of her book is concerned with the corn and agricultural merchanting trade, concentrating on the period after 1945. The development of merchants, millers, seed crushers and corn exchanges from the eighteenth to the late nineteenth centuries had already brought into existence firms whose names – Ranks, Spillers, Bibby, BOCM, Pauls, Cargill – remained familiar until recent years. It is a story of expansion from the late nineteenth century, reaching a peak in the period 1945–73, which she identifies as 'the golden years'. By the late 1970s, 250,000 UK farms were being serviced by 60,000 people in the supply trade alone, and 85 per cent of the businesses involved were still family-owned. Over the following twenty years amalgamation and rationalization stripped out 20,000 jobs in the input industries and more in food processing and marketing. By 1997 the supply trade association's membership fell to 200 (there had been more than ten times that number in 1947) and the eight largest merchants were buying 80 percent of all the grain sold by UK farmers. The process of concentration and globalization was replicated to an even greater extent in the flour milling and animal feed trades. And, as the subsequent chapters reveal, fertilizers, the seed trade and the pesticide industry followed the same pattern of expansion, overcapacity, rationalization and globalization.

Diane Montague deserves the gratitude of future workers in this field. She has reminded them that the topic exists and is fascinating and important. She has provided an enormous amount of detailed information, especially on the complexities of who merged with or took over whom. On the other hand, this is an example of journalism as the first draft of history rather than the last word. There is still plenty to do, because this book is stronger on fact than analysis. Indeed, the analysis is virtually absent, and so much information is packed in that it often becomes confusing. The two pages 73–4, for example, deal with international wheat policy, the rise of Cargill, Louis Dreyfus and other multinationals, the 1931 Agricultural Marketing Act, the launch of the London grain futures market, the National Institute of Agricultural Botany and seed testing, agricultural mechanization and the development of the Pertwee group of companies. She is often imprecise on dates, with the phrase 'at about the same time' frequently occurring. There are interesting stories, and one riveting but unsubstantiated allegation: we are told (on p. 143) that there was 'strong evidence at the time' (the early 1980s) that the impetus for the campaign against the weedkiller 2,4,5-T came from 'the Church of Scientology which was being cleverly

manipulated by the Soviet Union', but we are not told what the strong evidence was. A good editor might have improved the book, and not only by removing the typographical errors and the inaccuracies in the bibliography. At present it resembles a quarry face shortly after blasting, with a lot of potentially useful material requiring some sorting and shaping.

PAUL BRASSLEY
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VAL PORTER, *British cattle* (Shire, 2001). 40 pp. £4.50; DEREK RAYNER, *Traction engines and other steam road engines* (Shire, 2002). 40 pp. £4.50.

Reading Val Porter's excellent contribution to the Shire series puts me very much in mind of a former girlfriend, a wholely admirable art historian, whose persistent complaint when travelling the English countryside was of the ubiquity of 'boring old Friesians'. Ms Porter, whose unquenchable passion for pigs and cattle will be well-known to readers of this *Review*, describes and illustrates the dwindling pool of British breeds and in so doing hints at the profound dangers of declining genetic diversity. All the usual suspects are to hand: Glamorgans, Longhorns, Red Polls, Lincoln Reds, Shetlands and White Park Cattle, many of them relatively common within living memory, but now steadily sinking to minority or even endangered status. In enumerating the traditional British breeds, Ms Porter illustrates the extraordinary contribution of these animals to world livestock production. The past century has witnessed the export of that beef breed par excellence, the Aberdeen Angus, to some sixty countries worldwide, while the Sussex, with its ample supply of sweat glands, has been a major contributor to the beef industries of warmer climates in South America, South Africa, Texas and elsewhere. Similar claims might be made (though in different environmental circumstances) for the Highland, Galloway and Welsh Black. Meanwhile, the British beef industry, in pursuit of higher growth rates, better killing-out percentages and higher quality (sic) has pursued the path of cross-breeding to imported Continental breeds with their double-muscled conformation and their tendency to induce calving difficulties. In like manner, the Friesian breed, which almost wholly replaced the Dairy Shorthorn, is itself being eclipsed by infiltrations of Holstein blood, thereby to produce higher yields of milk of significantly lower quality from animals requiring higher food inputs. It seems inexplicable, at least to me, that a national industry, faced with declining demand for two of its major products, beef and milk, should resort to a strategy which increases output at the cost of quality and at the risk of irreplaceable genetic diversity.

As archivist of the Road Roller Association and a member of the Road Steam Forum, it seems only right and proper that Derek Rayner should write on traction engines in a Shire volume which fittingly complements his earlier *Road Rollers*. As one might expect, he writes with conviction, enthusiasm and authority on what to many might seem a somewhat esoteric subject replete with engaging, if often obscure, technical terms. Even so, once one has mastered the 'Pickering-style fitting', the 'Watt-type heavy two-ball governor' and 'worm and quadrant direct steering', one can enjoy Rayner's discussion of the traction engine, a vehicle used, as readers will recall, to such marvellous sexually metaphoric effect in Hardy's *Tess of the d'Urbervilles*. As he traces the history of the traction engine from the first-recorded efforts of Nicholas Cugnot in France in 1769 through to the steamrollers and road locomotives of later years, Rayner reflects upon developing mechanical and engineering features and the adaptation of the mobile steam vehicle to changing agricultural, transport and economic conditions. By the late nineteenth century, some ninety firms were building traction engines in Britain. Steam rollers to flatten water-bound road surfaces for cyclists (and later to roll out tarmac and chippings for all-weather roads), road locomotives, flexible steam tractors, engines for threshing, dredging, stone crushing and operating saw-benches – all produced by British manufacturers for the British, Imperial and world economies. And then there were the steam plough outfits, six hundred and fifty pairs of them working on British farms as late as 1918. If the internal combustion engine was eventually to bring about the eclipse of the traction engine, the fine old English names of their makers – Aveling and Porter, Rushton and Hornsby, Clayton and Shuttleworth, Gibbons and Robinson – are kept alive as enthusiasts like Rayner himself strive to restore these massive, awe-inspiring and elegant machines. Long may they continue to do so; long may their rallies flourish!

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ALAN F. WILT, *Food for war. Agriculture and rearmament in Britain before the Second World War* (OUP, 2001) vi + 262 pp. £40.

While the military and economic aspects of British rearmament in the 1930s have been intensively analyzed by previous authors, the preparations made to secure the national food supply have so far been rather ignored. There is little historiography to fill the gap between the beginnings of practical government interest, exemplified by the formation of the Food (Defence Plans) Department of the Board of Trade in 1936, and the springing into action of the Ministry of Food and the county War Agricultural Executive Committees (known to farmers as

the 'War Ags.') on the outbreak of war three years later. It is this gap which Professor Wilt aims to fill, and he has done so in a most illuminating way.

The consideration of food supplies in a future war was never absent from the government, even before the re-militarization of the Rhineland in 1936. In February 1933 the Manpower Sub-Committee of the Committee of Imperial Defence produced a report which foreshadowed wartime policy very accurately, and in May 1935 the Board of Trade formed its Sub-Committee on Food Supply in Time of War. A year later it had fleshed out the framework of a wartime food policy. Thereafter the pace quickened. Most important was the formation of the Food (Defence Plans) Department of the Board of Trade in November 1936. In wartime, this would be transformed into the Ministry of Food. By the outbreak of war it had developed its policy on imports, food storage, control of prices and the profits of the food trade, distribution, the feeding of evacuees, and food for the armed services. The civilian rationing system was ready to be implemented. The one omission was the formulation of a national nutrition policy, and this was not to happen until after the fall of France.

The counterpart to the food policy was that of home food production. There was general agreement that the task of the Ministry of Agriculture in a future war would be to raise home production by methods similar to those already tried in 1916–18. The MAF first promulgated a target for the ploughing-up campaign in January 1937, when it proposed that in the first twelve months of war 1,285,000 acres of grassland could be ploughed up, and planted with cereals and potatoes. MAF pressed ahead in 1937 with the formation of the county War Agricultural Executive Committees which were to oversee this process at the local level, writing (in confidence) to suitable prospective chairmen of the War Ags. Further action followed: the 1937 Agriculture Act extended the subsidy already in place for wheat to oats and barley also, thus placating Scottish farmer opinion (although it would not have impressed the Scottish newspaper correspondent who thought that every household in Britain should agree to purchase one bag of oatmeal each); provisions were made for protecting farm labour from military service; the Womens' Land Army was formed; the MAF entered into a contract with Fordsons to assure the supply of tractors; finally, as war loomed in the summer of 1939, farmers were offered a grant of £2 an acre to plough up grassland.

Thus the organizations were in place to address the questions of food supply and home production in wartime. Prof. Wilt also addresses the question of how far the agricultural constituencies were involved in these processes, by examining the archives of the National Farmers' Union, Central/Landowners' Association, and National Agricultural Workers Union. Here, the great political achievement of the government was to get the full support of the NFU. Earlier in the 1930s, it had been fairly critical of farming policy. As the depression eased, and policy became more farmer-friendly, the NFU became more co-operative. The pinnacle of this process came in January 1939, when W. S. Morrison, who was competent but not particularly farmer-friendly, was replaced as Minister of Agriculture by Sir Reginald Dorman-Smith, the former President of the NFU. This breathtaking piece of poacher-turned-gamekeeperism was, as Alan Wilt states, 'to head off mounting discontent in the countryside'.

Finally, Alan Wilt looks at the question of how far the public were aware of what was going on, and how far they were in support. This he does by analysing newspapers, both national and regional, and the archives of the NFU, NUAW etc. Generally, there was no lack of information, for those who cared to read about in the public prints. Insofar as the public was confused, it was usually on questions of food supply and control. On matters affecting farming, the story is one of a growing awareness of what would be demanded of the agricultural industry, and growing support in the farming constituencies, mounting to a flood of patriotic feeling by September 1939.

This book is the fruit of assiduous research in the UK and the USA, and Alan Wilt has filled a long-standing gap in the literature most comprehensively. It is a notable addition to our understanding of the links between food, farming and rearmament in the 1930s.

PETER DEWEY
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Elsewhere and General

MICHAEL MCCORMICK, *Origins of the European economy. Communications and commerce, AD 300–900* (CUP, 2001). xxviii + 1101 pp. 82 tables; 16 figs; 16 graphs; 40 maps. £40.

This is an awesome book at first sight: 'the first comprehensive analysis for over sixty years of the economic transition from antiquity to the middle ages' (back cover). Even if this is the publisher's hyperbole, nevertheless this huge overview begins with a bold premise: 'A scholarly Rip Van Winkle who went to sleep over his late Roman or early medieval dissertation twenty years ago would scarcely recognize the age which recent research has unveiled. New methods and tools have sprung up and invite new questions. Together, the new insights and new tools open large vistas to the historian. The time is ripe for trying new approaches to old problems,

including this one' (p. 3). Boiled down, though, McCormick has pursued an old quest, first addressed by Henri Pirenne, and then over the past seventy years by his disciples and detractors. Put simply: what happened to trade and communications in the Mediterranean between the end of antiquity and the rise of the middle ages? Pirenne concluded colourfully that without Muhummed there would have been no Charlemagne. McCormick, making use of new archaeological evidence from all over Europe and a systematic analysis of travellers' accounts, shows that 'the rise – and economic consolidation – of Islam changed the nature of an emerging European economy ... perhaps Pirenne was right' (p. 798).

McCormick's view of Europe from the Mediterranean is best illustrated by Map 20.4 'The Northern Arc, from Space'. Baghdad lies in the top left hand corner; Rome is in the right-hand corner; York is in the lower right-hand side, while Birka and Staraja Ladoga anchor the bottom centre. It is a view charged by McCormick's reading of his catalogue of 828 travellers' movements, collected in Appendix 4 and given additional substance by an invaluable catalogue (Appendix 3) of Arab and Byzantine coin finds in Carolingian Europe. The result, not surprisingly, lays emphasis upon a cosmopolitan world in striking contrast to the post-war emphasis upon a Europe composed of regions. Calibrated by quarter-centuries, McCormick presents a canvas that is truly pan-European, but uses individuals as metaphors of the changing geopolitics of the continent.

'Hunting for commerce has proven illusory' (p. 15) as far as the early medieval commerce in the Mediterranean has been concerned. So he quantifies the travellers' accounts to illuminate the new archaeological data. The results are little short of extraordinary. Let me offer my choice conclusions (of the many dozens in this book). McCormick demonstrates that there is a clear seasonal change in communications between antiquity and the early middle ages. Summarized on Chart 3.1, late antique travellers journeyed between May and September, while their later counterparts travelled throughout the year. Why? Travel was primarily by sea before AD 700, and primarily overland afterwards. He shows that the domicile of a great number of early medieval pilgrims and travellers was within a 100 km radius of a major emporia (trading centre) (p. 158). He demonstrates that between 753/76 and 800/25 western travellers aiming at points beyond Constantinople abandoned ancient Byzantine routes and began to travel east through the Islamic world. The wealth of Islamic contacts and, indeed, the presence of Islamic coins in Italy and elsewhere in Carolingian Europe is powerfully demonstrated. Chart 12.1 graphically illustrates the percentage of Arab coins in Sardinia, the Viking territories, the Adriatic region, the Iberian peninsula and the Rhône valley. The twin-peaks delineate a decline from 700–724 in the second quarter of the eighth century, then a sharp rise to *c.* 800, then a fall to *c.* 850–874. Taking this evidence with the data on travellers and the incidence of Byzantine coins, he concludes that 'communications between the Frankish empire and the eastern Mediterranean world surged in the final decades of the eighth and the first decades of the ninth century ... never again in the history of Europe did they come close to the low levels that prevailed before 750' (p. 442).

Many incidental sections flesh out this grand narrative. Illuminating sections on travelling the Mediterranean, on the relic trade, on Venice, on the objects of trade, and on the slave trade are deployed to substantiate the central thesis. Pirenne is essentially vindicated, if shown to be wrong about the details. Islam played a crucial part in the thrusting adventure of Charlemagne's life, breathing new economic vitality into hitherto moribund places. Archaeologists will welcome this window on a world of pilgrims and missionaries, and the splendidly illustrated quantification of the data. There are errors and small inconsistencies; but these are negligible blemishes. Historians, one can be sure, will be less complimentary. After all, the countryside and its management, the traditional domain of post-war historians of regions, is barely mentioned. Added to this, the book might be read as further praise for the economic foresightedness of Charlemagne, something that has grown steadily more unfashionable with historians as the European Union has established a prize in his memory as its greatest accolade. Historians, too, will be sceptical that this cosmopolitan world tells us anything new. Such a conclusion would be mistaken: in its detail McCormick has established a benchmark for what, as he rightly points out, has been a virtual world lost between those studying the East and West, and the North and South. Time will show what a massively useful work this is. Indeed, his book obviously invites a companion that looks at estate histories from Wessex to Palestine and treats them to the same analytical scrutiny. Taken together, what a homage these would be to the genius of Pirenne!

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PETER HOPPENBROUWERS AND JAN LUITEN VAN ZANDEN (eds), *Peasants into farmers? The transformation of rural economy and society in the Low Countries (middle ages – nineteenth century) in light of the Brenner debate* (Turnhout: Brepols, 2001) (CORN Series 4). 338 pp. 25 tables; 19 figs. €61.97.

Of the competing accounts of European social and economic history before the industrial revolution, Robert

Brenner's approach to the emergence of agrarian capitalism is distinguished by its extension of the Marxian dialectic of class conflict to a world without capitalists and workers. According to Brenner the pre-industrial analogue to capitalist expropriation of workers' means of production was state (and in some cases seigniorial) expropriation of peasants' means of subsistence, by which he means the land and agricultural capital needed to permit peasants to reproduce their social form free of the discipline of the market. Since that discipline typically enforces greater efficiency by weeding out failures to observe it, and since a growing agricultural surplus was the necessary condition for industrialization, the advent of market-based agriculture was critical to the emergence of industrial capitalism. The question is: what caused the transformation of agricultural organization? Brenner attributed it neither to the growth of markets for farm produce nor to the pressure of population on the land, because neither process put the self-reproducing institutions of peasant farming and seigniorial exactions in jeopardy. Rather, it was the absolutist state that eventually forced peasants into greater dependence on the market for their survival by oppressive taxation and military destruction of peasant capital. The emergence of commercial farming was therefore not a response to opportunities created by expanding markets or falling wages, but instead grew out of the dynamics of state-formation. Brenner's hypothesis thus asserts the traditional position held by Marxists and nineteenth-century historical economists, that the market for agricultural produce and agricultural inputs was a delayed historical phenomenon.

Until recently the historiography that treats these issues mainly considered them in the light of stylized economic and social histories of England, France and East Elbia. The present volume of essays was intended to redress this geographical imbalance by considering them in the light of the economic evolution of Belgium and the Netherlands. The result is an assemblage of empirical and theoretical essays by young and established scholars. From the perspective of the Brenner debate, the crucial questions concern the extent of the market in late medieval Netherlands, and why the early urbanized and commercialized districts of Flanders and Brabant were so late to experience an industrial revolution. As can be expected from a test of a hypothesis based on a highly stylized ideal typology, the empirical work does not sustain Brenner's definitions. Hoppenbrower's review of the Dutch experience shows that lords, peasants, and merchants all invested in market-related agriculture; Limbert's account of merchant capital in the Duchy of Brabant reveals that peasants with the most secure title to land were the most involved in markets for farm produce; Bas van Bavel's study of large farms near Utrecht indicates that their success was due not to the policy of landlords, but to their privileged access to the capital needed to pursue specialized production. Van Tielhof's essay on grain provisioning in Holland between 1490 and 1570 is an important contribution to the question of how dependent the region was on foreign supplies; Van Dam's study of the wage accounts of the administration responsible for repairing the Rijnland dikes provides a useful description of how the Dutch market for unskilled labour worked at the start of the sixteenth century. While the above are essentially specialist studies, the general discussions and bibliographies will be useful to students with a generalized interested in early modern economic change.

The theoretical articles are a rather mixed bag, and could have benefited from more vigorous editing. Of those that most closely approach an historical synthesis, the essay by Thoen on the evolution of the Flemish rural economy between the twelfth and nineteenth century, and van Zanden's essay on proto-industrialization in Holland and Flanders are the most useful. Because Brenner based his interpretation of Dutch agrarian history on Jan de Vries's doctoral dissertation, de Vries's views seem to have been as much an object of contention at the conference that gave birth to this collection as Brenner's. De Vries's response to criticisms of his work and his analysis of Brenner's thesis are, as one expects, incisive and cogent. Perhaps the most useful theoretical essay, however, is Brenner's discussion of his own ideas. For those who desire to know exactly what his argument is, this is the essay to consult.

Macro-history fell out of favour over a half-century ago, because of its sociological reifications and nebulous chains of causation. Despite its dispersed focus, the present volume avoids the worst of these pitfalls of historical reasoning by staying close to the historical evidence. Its real contribution, however, lies not in new evidence or new interpretation, but in clearly posing the question of how analytically to describe the evolution of European agriculture between the middle ages and the nineteenth century. This is an old question for which there is as yet no agreed-upon answer.

GEORGE GRANTHAM
McGill University

J. BIELEMAN AND A. H. VAN OTTERLOO (eds), *Techniek in Nederland in de twintigste eeuw*, III, *landbouw, voeding* (Zuthphen: Walburg Pers, 2000). 442 pp. Illus. €39.95.

The third volume of the series 'Technology in the Netherlands in the twentieth century' consists of two parts. The first (pp. 1 to 234) has been written by two seasoned agricultural historians, J. Bieleman and P. Priester and

describes and analyzes developments in agriculture except horticulture between *circa* 1900 and 1985. The second part (pp. 235 to 374) describes some aspects of changes in food and food technology in the Netherlands. The largest contribution is by A. H. van Otterloo, whose main work has hitherto been on the long-term development of cultural aspects of food consumption in the Netherlands. Other chapters have been written by A. P. den Hertog, A. Albert de la Bruhèze, H. Buiter, B. Suyter and A. P. de Knecht-van Eekelen, authors with a shared sociological/historical background.

The first part is well informed, well written, well illustrated and, considering the magnitude of the changes in Dutch agriculture after about 1955, quite focused and coherent. It must however be mentioned that this coherence is partly obtained by leaving out the most dynamic (and least subsidized) sector of Dutch agriculture, namely horticulture. It is a welcome change that neither the beginning (c. 1950) nor the end of the period under consideration coincides with either of the World Wars. A more ample use of statistics might have made it possible to get more mileage out of this departure from customary historiographical practice.

Due attention is given to emblems of mechanization and technological change like the milking machine, the mechanical thresher and the tractor, and also to less spectacular but also extremely important innovations like artificial insemination, 'Bordeauxse pap' ('Bouille Bordelaise' or Bordeaux mixture, the first effective means to combat *Phytophtora* in potatoes) and the introduction of ensilage. More attention should have been given to even less dramatic but still very important innovations like roller bearings, pneumatic tyres, the introduction of electricity and water supply systems (ever considered how much labour is involved in watering ten cows manually, even when the well or ditch is close by?), radio, telephones, and so forth. Bieleman and Priester also describe aspects of government policy, especially the land consolidation policy which enabled all these changes and led to the almost complete restructuring of the countryside of the Netherlands.

A little more space should have been given to the consequences of the mechanization of agriculture. After 1955, labour productivity in agriculture rose at an astonishing rate. Despite a strong and sustained growth of agricultural production, the number of people working in agriculture fell sharply, while farms increased in size and 'capitalist' agriculture, i.e. farmers employing large numbers of workers, virtually disappeared (except from horticulture). Though Bieleman and Priester do give a few data on numbers of farms and average farm size, this does not suffice to show the magnitude of these processes. It is also not clear why 1985 is the *de facto* end of the period under consideration; data on the period 1985-1997 must have been readily available at the time of writing. In sum, the first part is a welcome addition to the existing literature, giving much well-ordered information on several aspects of mechanization and in the process also widening the scope of agricultural history. Its main flaw is a failure to use concepts which make it possible to summarize and generalize these enormous and highly diversified changes in a concise way.

The second part has a more haphazard character, switching from the introduction of freezing technology in fisheries during World War I on one page to the triumphal progress of French fries during the post World War II period on the next. Some efforts to introduce encompassing concepts are made, but these are either inaccurate – the data on food consumption on p. 238 are severely flawed; much better data have been around for quite some time – or incomplete. There is for instance a chapter on milk and dairy products, but chapters on other foods – vegetables and fruits, bread, meat and fish, and beverages – are wanting, though a chapter on snacks has been included. A chapter on packaging, another standard item of the food technology curriculum, contains lots of information on the dairy industry but almost nothing on other products. The chapter on cooling and freezing is rather unsystematic and stops in 1970. Important though they may be, cooling and freezing are only one of the ways to solve the main problem of food technology, namely preventing and controlling decay. Too little effort has been made to compare the technologies of the cooling chain with such methods as salting (meat, butter, bread), drying (fruits, vegetables, meat, tea), sugaring (fruits, jam), fermenting (bread, wine, sausages, cheese, butter), adding herbs (sausages, sauces), and heating and canning. Developments in these technologies are barely mentioned.

Of course, food technology is not restricted to the factory, and some attention is given to changes in the way food is sold and to the relation between this and consumption habits. More use of statistics would have made it possible to pinpoint marketing changes more precisely. In general, there are too many missed opportunities in the second part of the volume.

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GÉRARD BÉAUR, *Histoire agraire de la France au XVIIIè siècle: inerties et changements dans les campagnes françaises entre 1715 et 1815* (SEDES 2000). 320 pp. 19 tables; 15 figs; 12 maps. €21.34.

The subtitle captures the essence of this book, which is more a study of inertia and change in the French countryside between 1715 and 1815 than, as the main title

would have it, of French eighteenth-century agrarian history in the round. It attempts not to be (not always successfully) yet another study of the relationship between the French revolution and the agrarian question. Its main contribution is to assess the hold of the French peasantry on the land, the social structure and regional diversity of the peasantry, their fiscal and seigneurial burdens and the impact of the revolutionary period on them, and also to present a detailed picture of French agricultural production and productivity within the 'long eighteenth century', with a view to including French eighteenth-century agriculture in debates about the agricultural revolution. The book itself is an outcome of a series of lectures for students preparing for the *agrégation d'histoire*, and it bears some marks of hasty publication, lacking an index of subjects and names, and omitting the listing and numbering of tables, graphs and maps.

Béaur is a specialist on the land market, and he starts by an analysis of the social distribution of agricultural land ownership during the eighteenth century, and the impact of the revolution on the land market. The pre-revolutionary peasantry held approximately forty per cent of the arable nationally (though with substantial regional variations), mostly in small family holdings of from about one to ten hectares. It seems that the trend towards expropriation of peasant land by nobles or the bourgeoisie stopped around 1750, but that due to demographic growth peasant land holdings continued to fall in size, and that the numbers of landless peasants grew. By suppressing the seigneurial system and establishing private property, and by putting church lands (the *biens nationaux*) on the market, the revolution increased the land ownership of the peasantry by at least 15 per cent, making it 55 per cent of all cultivated land by 1825. But the revolution was far from a peasant's land charter. The *Code Civil* of 1804 extended to the whole country egalitarian customs of succession, already widespread. Though the increasing concentration of land seen during most of the eighteenth century ceased, the bourgeoisie were the main beneficiaries in the post-revolutionary land market.

Two core chapters are concerned with changes in arable production and the problem of productivity. The main factor behind French eighteenth-century agricultural growth was the rise of demand in foodstuffs from one of Europe's largest populations – 25 millions in 1789, 30 millions by 1825. It is clear that this explains the French obsession with bread-cereals production, and especially wheat. The pastoral sector and animal production were secondary to the paramount concern for grain. One consequence was that manure was on the whole insufficient to contribute to progress in yields. There was a great expansion of wine-growing, supplying an expanding market, but crop specialization and intensification following the model of the 'new husbandry' had uneven success in the French countryside. However, Béaur identifies five regions where fallow lost its importance and even disappeared, to be replaced by the continuous cropping of leguminous fodder crops (clover, sainfoin, lucerne, etc.). Béaur also documents the rise of new crops (rape seed, colza, maize, American beans, sugar beet, carrots, potatoes, tobacco, madder, etc.), the search for new fertilizers, and improvements in agricultural implements, tools and machinery.

What of French agricultural productivity? The matter has caused one of the hottest controversies among French historians. Tithe series have been used both by the 'deniers', especially Michel Morineau, who did not believe that any progress in productivity happened before 1840, and by Joseph Goy and Emmanuel Le Roy Ladurie who drew the contrary conclusion that productivity growth definitely occurred in the eighteenth century. The progression of grain yields is clearly attested in northern France (Flanders, Artois, Picardie, Soissonnais) and in the region of the Paris basin (Île-de-France, Brie) and Normandy. Progress in labour productivity was part of the change.

Béaur suggests that most of the growth in French agricultural productivity during the eighteenth century took place in the thirty year period between 1740 and 1770. This was a period of sustained growth with relatively few and rather mild subsistence crises. But from the 1770s, and especially from 1773, a number of more severe *crises frumentaires* and *crises des subsistances* brought famine, epidemics and increased mortality, harbingers of the final crisis of 1789 and the revolution. The rise in food prices, the stagnation or the fall of wages, the ensuing famine and rise of mortality created the revolutionary mood. All this can be related to the actual absence of the free circulation of grains and foodstuffs and to the lack of a national market unobstructed by material and institutional obstacles. Béaur shows in a brilliantly detailed chapter that, in spite of revolutionary reforms liberating the market, the *crises des subsistances* continued unabated all through the revolutionary and Napoleonic eras and were especially serious in 1793, 1795, 1811–1812 and 1816.

In his conclusion, characterized by a healthy scepticism, Béaur tends to minimize the impacts of the French eighteenth-century agricultural change. It was an assemblage of small changes, neither a turning point nor a breakthrough. He believes that the French peasantry gained some advantage from the revolution, but that the French revolution was definitely not a 'peasant revolution'. Finally, he takes a cursory glance across the Channel to try to reduce the distance between the eighteenth-century agricultural histories of Britain and

France. But comparative history is the most delicate of exercises, and here he fails completely.

JACQUES BEAUROY
Darwin College, Cambridge

RITA GUDERMANN, *Morastwelt und Paradies: Ökonomie und Ökologie in der Landwirtschaft am Beispiel der Melorationen in Westfalen und Brandenburg (1830–1880)* (Paderborn: Ferdinand Schöningh, 2000). xiii + 577 pp. €51.60.

This very thoroughly researched monograph endeavours to explore not only agricultural and social transformation during the middle decades of the nineteenth century in two districts of northern Germany, the area east of the town of Münster in Westphalia and the Havelland west of Berlin in Brandenburg, but also the environmental and ecological impact of the changes that occurred. The impact of the latter has until quite recent times been almost entirely ignored by German agricultural historians.

The areas examined consist almost entirely of relatively infertile sandy soils, often subject to frequent flooding, and practically worthless moors. The originally-limited woodland had practically disappeared with settlement by the end of the eighteenth century. Flooding was worsened by dams built to serve the number of mills operating in the areas, which also acted to raise the water table to the detriment of most crops – but not of weeds. In the periods between inundations as much as half the land area was suited for nothing more than providing poor pasturage for breeds of livestock adapted to scavenging for fodder. The limited arable area was devoted to low-yielding cops of rye or buckwheat, which will grow on the poorest of soils. All in all, in the early nineteenth century these were among the most marginal of agricultural areas in Germany. Practically the only non-agricultural resource available was peat, which was exploited on account of the high cost of importing coal in the pre-railway age.

Paradoxically, while agricultural progress was predicated on the replacement of open-field farming and common pasturage by individual farms, collective action was required to solve the flooding problem. Early piecemeal drainage efforts had simply exacerbated the problem elsewhere. Matters worsened from the 1850s when progressive farmers began to lay field drainage pipes. It required the state to intervene to organize the collective drainage of large areas. Within that context a remarkable difference between the earlier and later nineteenth century was the positive response of most farmers to the improvements in the farming environment.

It is difficult to do justice to a monograph of this length and depth within the number of words allowed. Some criticisms might be levelled at some of the content. The author does little more than mention migration – in particular by the *Hollandgängerei* – as a source of employment for the landless of east Münsterland. But this work is unlikely to be surpassed in a very long time.

JOHN PERKINS
University of New South Wales

CLINTON L. EVANS, *The war on weeds in the Prairie West* (University of Calgary Press, 2002). xvii + 309 pp. Illus. C$29.95.

No other region in the world would serve better as a theatre for a drama entitled 'the war on weeds' than Canada's western prairie. War is violence, disruption, invasion, and, at its worst, decimation and displacement of incumbent populations, which is what immigrant farmers, the influence of the world market, and herbicidal corporations have inflicted on the flora of those grasslands. The results have been low food prices, for which all consumers must be grateful, and ecological instability over much of North America, with which we all should be concerned.

This book begins with a valuable discussion of how to define weeds. Are they simply plants that grow where they aren't wanted – a totally human-centred definition — or is there something about them in and of themselves that makes them weeds? Then the book goes on to a consideration of British farming and weeds, i.e. to what the Euro-Canadian farmers who first moved onto the prairie expected to happen in the rivalry between their crops and weeds. They expected a sedate sort of rivalry into which they could gently and effectively intervene as allies of their crops. What they got was gross combat, hence chapters in this book with titles like 'War on the Western Front, 1906–1945'. In Europe weeds were a nagging problem. In western Canada they were a curse, like locust plagues and prairie fires.

Euro-Canadians had often found themselves in competition with native Americans for control of the land, but the competition between European crops and weeds was not one of immigrants versus indigenes. The worst weeds were also immigrants: Canadian thistle, for instance, which many farmers would nominate as the most villainous, is, despite its popular name, an import. Another villain, tumbleweed, considered by many city-folk south of the Canadian-US border as American as John Wayne himself, is more accurately entitled Russian thistle.

The Canadians' fight with such floral enemies resembled in many ways a war effort, enlisting science, government, educational institutions and organs of propaganda. It was a war that did not go well for the farmers until the arrival of the farmers' best friends – at least for a while

– 2,4-D and the other herbicides, in the 1940s. Some commentators, of course, define the indiscriminate dumping of tons of poison into the environment as simply another and, in the long run, worse problem.

Our author, Clinton L. Evans, is convinced that the problem of weeds in western Canada, if it is to be dealt with successfully, should not be defined as a war of one kind of plants against another, but as a matter of the inappropriateness of the culture of the farmers and the economics of the grain industry. The farmers have stripped off the incumbent ecosystem and substituted monocrop agriculture. They have 'mined', the prairie, and the weeds they brought in with their wheat are not the cause but the most obvious symptom of their problems. Herbicides have provided not a solution but a means to postpone facing up to those problems.

I recommend this deeply researched, well organized, and unhysterical book for all who are worried about agricultural mining in western Canada or anywhere else.

ALFRED W. CROSBY
Nantucket, Massachusetts

IAN MACLACHLAN, *Kill and chill: restructuring Canada's beef commodity chain* (University of Toronto Press, 2001). xxxi + 378 pp. 10 tables; 17 illus; 27 figs. £35 (hbk); £14 (pbk).

This is not a book on agricultural history but on agrobusiness history, and no less important because of that. It is the first comprehensive study of Canada's beef industry from calf production to the retail store, and the radical changes it has undergone over the past 130 years. Canada has never been a major beef producer and at no time has it had an important export trade. However, the industry has, as one might expect, been strongly influenced by developments in the United States. After a time lag of some twenty years or so, the business methods of America were usually adopted in Canada. Thus the United States meat-packing industry started to industrialize in the 1860s and 1870s but similar development in Canada did not begin until the 1890s.

This means that the main starting point for this book is about 1890 and it follows the entire process from beef calf production, cattle feeding and marketing, through slaughtering and fabrication to distribution and retailing. The treatment is generally as comprehensive as the source materials allow but there do seem to be gaps at some points where perhaps aspects of the industry were never prominent enough at the time to gather a lot of comment. This criticism applies to the first two chapters on calf production, breeding and feeding of beef cattle. They are rather unbalanced with most attention devoted to post-1950 developments. The first chapter is not such a problem as it does have some coverage of nineteenth century imports of British purebreed cattle and twentieth century experiments with exotic cross-breeds. But the second chapter is entirely on the present-day feedlot system, where some farmers running the largest industrial scale operations in Alberta grain feed over 25,000 head of cattle on 160-acre quarter sections of land. Although the treatment of this important aspect of the industry is excellent, this reader would have liked more information about the early history of feedlot farming and also on exactly how beef animals were fed for the Canadian market from the 1890s to the 1940s. After all, this was still a market of around 5 million persons in 1890 and 14 million by 1950.

In contrast, the later chapters on livestock marketing, transportation, beef packing and distribution deal very fully with developments since 1890. They chronicle the emergence of large-scale packing firms, and their success in preventing their tiny market from being captured by the much larger United States firms – at least until the 1990s. Important though nineteenth-century changes were, the overall picture is one of an industry that experienced its greatest transformation in the second half of the twentieth century. From the 1960s a new generation of very large scale vertically integrated beef specialist firms has emerged, operating very large-scale plants with rapid processing speeds and a very large scale of output. There have also been significant changes in the location of the industry as meat-packing has moved out from nineteenth century city sites, supplied from railway stockyards to concentrate on 'kill and chill on the prairie' (p. 281). This is linked to what the author describes as 'postmodern beef retailing' (p. 320) with packing plants no longer just producing quarters of beef, but cuts ready-packaged a great variety of ways for immediate display in supermarket cabinets. This has allowed processors to divert an increasing amount of the added value of beef from retail butchers. No longer are most cattle sent some distance by rail to stockyards, and carcass beef then moved to wholesale distribution centres by refrigerated rail cars. Today rail is in decline with an increasing amount of 'boxed beef' trucked by road in refrigerated trailers, although there is more resistance to this product in the east.

The author does not just detail the institutional and business arrangements surrounding the Canadian industry, but also covers themes that have a wider significance. Meat-packing was an industry affected by government animal and human health regulation in the nineteenth century, and one where some of the earliest investigations into the monopoly power of big business were undertaken. In more recent times the runoff from feedlots has raised environmentalists' concerns about water contamination, and the transport and slaughter of

cattle has raised protests from animal welfare groups. The industry has seen progressive deskilling beginning in the nineteenth century but once again the pace of this change has accelerated since the 1960s. The whole beef industry in western countries has also faced significant market challenge since the mid-1970s, in the face of red meat health scares and growth in poultry consumption. In Canada this has resulted in a 35 per cent decline in per capita beef consumption in the last twenty years. This is an industry that has provoked criticism on several of the issues above but the author covers these in a fair and dispassionate manner. Overall, Ian MacLachlan's book provides a very valuable contribution to the historical geographical literature on livestock farming and the food industry.

RICHARD PERREN
University of Aberdeen

ASHOK GULATI and TIM KELLEY, *Trade liberalization and Indian agriculture* (OUP India, 2001). xxiv + 296 pp. 28 tables; 17 figs; 18 maps. £13.99.

The conclusion of Gulati and Kelley's book is that a unilateral liberalization of India's agricultural trade will lead to a gain in efficiency as well as welfare, while cost-of-living expenditures in rural and urban areas are only marginally affected. Accordingly, the authors conclude (p. 164) that there are no grounds for stalling agricultural trade reforms 'that are critical for the efficient and for the long-term growth of India's agriculture, and the economy as a whole'. Their conclusion is based on an empirical analysis in three interrelated parts. First, focusing on India's semi-arid tropics regions and using a fixed effects regression model, the elasticities of crop area changes with respect to price and non-price factors (mainly irrigation) are estimated (Chapter 4). This exercise is meant to establish that farmers are responsive to price changes, which is essential since trade liberalization is to affect the agricultural sector by bringing domestic prices in line with world prices. Second, using widely applied concepts such as Domestic Resource Costs (DRC), Nominal Protection Coefficient (NPC) and Effective Protection Coefficient (EPC), Chapters 5 and 6 estimate regionwise differences in domestic and international crop prices. The authors find that the domestic prices of rice, wheat, cotton, chickpeas and maize are below the international price, which means that India has a comparative advantage in these crops vis-à-vis the option of imports. In contrast, domestic prices of oilseeds and sugarcane are above world prices, indicating that, at the margin, resources could be saved by importing these products at lower prices than those being paid to domestic producers. This second exercise is meant to establish that deviations between domestic and international prices are substantial, which implies that the gain in allocative efficiency from trade liberalization may be substantial as well. Third, using a partial equilibrium multi-market model with base-year 1993–94 (Chapter 7), the authors evaluate the impact of full unilateral agricultural trade liberalization on crop prices, crop supply and demand, crop trade, agricultural income and welfare, and costs of living. The model results confirm the authors' expectations: output and prices of rice, wheat and cotton rise, output and prices of oilseeds and sugarcane decline; aggregate agricultural income rises, there is a welfare gain (of about 3 per cent), and the reform has hardly any impact on the costs of living of the various rural and urban income classes.

Unfortunately, Gulati and Kelley's analysis does not provide adequate grounds for its strong policy recommendations, because it is flawed in important respects. We will highlight only three deficiencies. First, the authors' assessment of the static efficiency status of India's cropping patterns vis-à-vis world markets takes world prices as the relevant referent prices, assuming that world markets function without distortions. This is not an innocent assumption! In reality, world agricultural trade occurs in a highly imperfect setting where, as a result of non-tariff barriers imposed by developed and developing countries alike, world prices are determined by the relatively small surpluses and deficits which enter world markets. The implication is that world prices can respond disproportionately to even fairly small changes in world trade volumes, particularly because the relevant price elasticities are small (see Deepak Nayyar and Abhijit Sen, 'International trade and the agricultural sector in India', *Economic and Political Weekly*, 29 May 1994, pp. 1187–1203). As a result, the variability of world prices is significantly higher for most crops than that of Indian prices (as can be calculated, for instance, by the price data given by Nayyar and Sen). Why would the imposition on Indian agriculture of world prices that are highly unstable improve resource use efficiency? The authors, in other words, ignore the potential costs of increased price uncertainty. They also incorrectly claim (on p. 129 and p. 180) that their concept of efficiency, operationalized as the ratio of domestic to world prices, is dynamic and holds good for the short to medium run. The price-based efficiency comparisons are undeniably static and solely of historical interest, as they have very little prospective value: what guidance in deciding their cropping pattern do farmers get from next year's world prices that are even more uncertain and unstable than domestic prices?

Second, while agricultural globalization has many dimensions, the book focuses, rather narrowly, on its comparative-static implications for allocative efficiency.

What strikes us is that the once-and-for-all efficiency gain due to agricultural trade liberalization is very small: aggregate welfare increases by only three to four per cent. This increase is almost negligible compared to the potential welfare gain that can be obtained from a sustained reduction in the vast under- and unemployment of India's rural labour force or from a step-up in the rate of agricultural technological change. In other words: making Indian agriculture grow is far more important for development than making it more efficient! Unfortunately, the authors fail to grasp the once-and-for-all nature of the efficiency gain and mistakenly use their results to make inferences about India's long-term agricultural growth.

Third, notwithstanding ninety pages of annexes, the book's analysis is in many important respects not well documented. For example, the use of farm harvest prices (rather than procurement prices or wholesale prices) in estimating crop supply responses is not clearly indicated in the main text nor are its implications for the estimation results discussed. Likewise, the data source of the world crop prices used is not given nor is it stated which specific domestic and international price quotations were used. Regarding their choice of the shadow exchange rate (a crucial variable used to convert international prices into domestic currency), the authors state (p. 104) that we 'have not estimated this rate ... but relied on the results of another study'; however, no reference is given. Finally, the discussion of the model is silent on the choice of labour market closure; presumably, labour supply and demand are balanced in neoclassical fashion by real wage adjustments. If so, this closure is not only obviously unrealistic for India (see Gaurav Datt, *Bargaining power, wages and employment: an analysis of agricultural labour markets in India* (New Delhi, 1996)), but it also significantly affects the model results, which is – again – something the authors do not discuss. As Shankar Subramanian has shown (*Agricultural trade liberalisation and India* (Paris, 1993)), the welfare effects of trade liberalization are likely to be even smaller when labour market closure makes a realistic allowance for rural unemployment.

SERVAAS STORM
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SHAYNE BREEN, *Contested places. Tasmania's Northern Districts from ancient times to 1900* (Centre for Tasmanian Historical Studies, 2001). xv + 226 pp. 8 tables; 44 illus; 9 maps. A$35. JOHN FERRY, *Colonial Armidale* (University of Queensland Press, 1999), xi + 308 pp. 1 table; 15 plates; 1 fig; 10 maps. A$27.95

There is a relatively limited body of scholarly writing about the history of specific rural districts in eastern Australia. Major works include: Margaret Kiddie's, *Men of yesterday* (1961), R. B. Walker's *Old New England* (1966), Duncan Waterson's *Squatter, selector and storekeeper* (1968), W. K. Hancock's *Discovering Monaro* (1972), Don Watson's *Caledonia Australis* (1984), Alan Atkinson's *Camden* (1988), and Jan Walker's *Jondaryan Station* (1988). The books under review are a welcome expansion of this corpus, especially as they extend its intellectual agenda, embracing current concerns about environmental history in the context of power relations.

Contested places benefits from works on ecological and environmental history unbeknown when Hancock addressed (to quote his subtitle), 'man's impact upon his environment'. Breen especially acknowledges a debt to environmental historians of the American West (e.g. Carolyn Merchant, Richard White), for remedying a prior 'conceptual schism' between the environmental and the social. This has added real strength to his study, as has his nose for power relations, which also owes something to American scholarship, especially James C. Scott's *Domination and the arts of resistance* (1990). This theoretical dimension makes Breen's book anything but parochial (neither is Ferry's, though he mostly implies his theoretical underpinning rather than spelling it out).

Hancock dualized humans and environment as contending forces. For Breen, the environment had active agency over people and vice versa. Nevertheless, his northern Tasmanian settlers damaged the environment under the delusion of conquering nature. Forest destruction, wetland degradation, species loss, and soil-exhausting cultivation practices are convincingly presented as mutually constituted with a social landscape of marked domination and subordination. Large gentry estates emerged early and the gentry progressively entrenched their wealth and power. If the greatest sufferers thereby were aboriginals, nevertheless convict workers, small tenant farmers and itinerant, landless free labourers had many woes. Unfortunately, Geoff Raby's able defence of the economic rationality of the cultivation practices of colonial Australia's much-criticized small farmers up to 1860, in *Making rural Australia* (1996), is ignored. Breen thus lost a golden opportunity for debate with a significantly different interpretation to his own.

Breen is very sharp on recreational land use (not addressed by Ferry). Bushwalking intensified white Tasmanians' sense of place, albeit with imported aesthetics, but created further environmental pressures. Thus in 1855 the wealthy landowner William Archer and a botanist, W. H. Harvey, scaled Cummings Head peak. On the ascent, Archer casually set a fire 'with the view of making a clearance'. Archer was rather gratified that the resultant pall of smoke, lasting for days while a huge upland bush

tract burned, resembled a London fog. This was taking colonial culture's mania for recreating England in Tasmania to an extreme.

Like *Contested places, Colonial Armidale* commences with a thoughtful conceptual exploration of place, including its cultural and social senses, though without Breen's Heideggerian approach. Oddly, since Breen is concerned with theorising space/place, he has not utilized Australianist works which grapple fruitfully with this very question: e.g. Paul Carter's influential *The road to Botany Bay* (1987). Ferry, with a delicate but effective touch, approaches place through the competing narratives that constructed it culturally, thus avoiding some dodgy (or even rather scary) ontological essentializations from Heidegger embraced by Breen. There are, however, some striking similarities between their stories.

Both lament the fate of wheat farmers. By 1861, Armidale Police District had more steam-powered flour mills than any other in New South Wales, except the Sydney District, indicating the flourishing state of the local market for Armidale District's wheat farmers. Over the next few years wheat production boomed. By the 1880s, however, railway construction allowed in cheaper and better South Australian flour while the Hawkesbury river bridge, completing a direct line to Sydney in 1889, finished off wheat farming and milling. Smarter or luckier farmers survived by crop diversification. The adherence of New South Wales to free trade didn't help. As Breen reveals, the same applied in Tasmania (on top of landlord exactions and some unrealistic idealization of family farms as yeoman paradises). In both colonies, free trade was favoured by the big landholders, who produced export commodities, and by associated urban mercantile interests, and these elements were politically dominant.

Ferry is excellent on the 'second struggle for the land' – between emergent selector small farmers and the big pastoralists – from the early 1860s. He provides one of the most astute, nuanced and well-informed accounts in the extensive literature on selectors versus squatters in eastern Australia. In Tasmania, there were no selection acts and even when it came to leases of crown lands, the big rural interests took the lion's share. In the northern districts, an insecure and often impoverished tenantry remained, despite periodic protest, under the thumb of the big landholders. But then, in Armidale District too (as generally in NSW), many big property holders deployed all the effective chicanery that wealth and high-level connections could facilitate, to retain substantial control over the land during the era of selection legislation.

Inevitably, this review provides a mere sample of themes explored in two extremely rich studies. Breen says much about policing and the lower courts, Ferry about family, inheritance and gender relations; mining; and the urban development of Armidale town. Both are strong on new technologies and are informative about indigenous peoples – the Pallitorre and Panninher of Tasmania's Northern Districts and the Anaiwon of Armidale District. Both whet the appetite for more such studies.

IAN DUFFIELD
University of Edinburgh

ANNE KELLY KNOWLES (ed.), *Past time, past place. GIS for history* (Redlands CA: ESRI Press, 2002). xx + 202 pp. Illus. $29.95.

After two helpful introductory chapters, this book offers a series of well-written and handsomely-presented case studies on 'Teaching the Salem witch trials' (Benjamin Ray); 'Similarity and difference in the Antebellum North and South' (Aaron Sheehan-Dean); 'Telling Civil War battlefield stories with GIS' (David Lowe); 'Immigration, ethnicity and race in metropolitan New York, 1900–2000' (Andrew Beveridge); 'Redlining in Philadelphia' (Amy Hillier); 'Causes of the Dust Bowl' (Geoff Cunfer); 'Agricultural history with GIS' (Alastair Pearson and Peter Collier); 'Mapping British population history' (Ian Gregory and Humphrey Southall); 'GIS in archaeology' (Trevor Harris); 'Mapping the ancient world' (Tom Elliott and Richard Talbert); and 'The electronic cultural atlas initiative and the North American regional atlas' (Lewis Lancaster and David Bodenhamer).

The Pearson and Collier piece is the most relevant chapter for this journal, although Cunfer comes to the interesting conclusion that environmental historians need to consider the possibility that dust storms are a normal ecological disturbance that coincides with extended periods of drought and high temperatures on the southern plains, rather than evidence of human ecological failure. Elliott and Talbert indicate how archaeological findings and geological modelling can be employed to reconstruct the ancient landscape.

Pearson and Collier offer not a global survey, but, instead, a specific account based on the Tithe Survey of 1836–50, which, they argue, is ideal for conversion into GIS. They have been employing GIS to combine the geographic and economic information contained in the Tithe Survey with other socio-economic and environmental data, such as soil characteristics, and mean altitude, slope and aspect for each field, for parishes in Britain's agricultural heartland and in south-west Wales. The geographical pattern of tithe charges in the area discussed – Newport parish on the northern coast of Pembrokeshire – indicates that they were apportioned consistently. Multilevel modelling was then used to show that most rent variation was accounted for by environmental

factors, not by owners or occupiers, although the latter two did affect productivity: by 9 per cent and 12 per cent respectively. Thus, tenant farmers appear to have been more responsible for agricultural improvement in this part of Pembrokeshire, than were landowners.

This essay ably indicates the potential value of GIS to the historian interested in reconstructing past agricultural landscapes. However, it takes months of work to input the data in a form compatible with the GIS. More generally, successful historical GIS projects require a heavy investment in data collection and classification. Furthermore, not all documents lend themselves to inputting, as many offer very poor spatial referencing. This is an important volume that is richly suggestive about methods and mapping.

JEREMY BLACK
University of Exeter

PETER HAY, *A companion to environmental thought* (Edinburgh UP, 2002). x + 400 pp. £18.99.

Grander than introductions, less complete than encyclopedias, more synthetic than handbooks, and organized as coherent tracts with some attitude, 'companions' to philosophical thought are a rising literary form. Companions span the gap between original tracts and pedantic texts. Peter Hay writes in this new genre on how environmental concerns are challenging old and generating new social philosophy. By his own admission, the task required a boldness that bordered on foolishness. The preface makes it clear that he is discussing western environmental thought and ignoring that arising from other cultural roots in the clash with western-style development. Within only this constraint, Hay takes on the challenge of organizing the academic literature on social philosophy and the environment.

Hay leads his reader through a particular progression of thought. The first chapter addresses our attraction to nature, or why we care, taking a historical perspective. The emphasis is on nature and wilderness, missing the early histories of our concern for clean air, water, and food as well as for the well-being of other species. The second chapter sets out taxonomies of how people progressively relate to nature, from historic and bad forms of exploitation to increasingly modern and good levels of ecological consciousness to which only a few environmental philosophers have apparently risen. I find this a very limiting way to organize environmental philosophy, and indeed it serves only to document particular portions of the literature in this chapter. Hay identifies key aspects of ecofeminism in the third chapter, providing an interesting and reasonably comprehensive analysis. Moving next to religion and spirituality, Hay breaks his bounds in the fourth chapter and tries to cover the world's religions. He does so a bit too shallowly in an effort to make linkages to the diversity of calls for new spiritualities by ecofeminists and environmental ethicists.

Hay takes on how green issues and new ways of thinking interact with science in the fifth chapter. He puts too much emphasis on the pitfalls of reductionism against the need for a holism yet to exist, but he touches on many other critical issues in the process. As a lecturer in geography, Hay provides a good summary in the sixth chapter of the importance of place, community, and bioregionalism against progressive visions of global communities. In the seventh chapter, Hay addresses the authoritarian and conservative roots of green concerns. Environmental challenges to liberalism, especially as embodied in economics, are dealt with in the eighth chapter. Here we find a good review of the limits of environmental economics and how alternative approaches, including the emerging field of ecological economics, address critical issues of environment, growth, and the quality of life. Hay addresses the socialist response to environmental challenges in the ninth chapter with a good review of the work of European democratic socialists during the 1970s and 1980s and the efforts to bridge the gap in perspectives during the 1990s. Both the eighth and ninth chapters are lengthy and solid, but short on synthesis and perspective. The final chapter addresses the contradictions and big issues raised by the multiple perspectives considered separately. For the already well-read, this is definitely the chapter to read. For initiates to the way environmental issues have challenged and generated social theory who have made it through the bulk of the book, the final chapter should be, and probably is, exciting.

This 'companion' is both a bold and foolish effort. Environmental thinking is challenging and generating social thought, breaking it into multiple, intermingling, and constantly changing streams, like the great Mississippi River meandering across the delta of silt it has deposited over millennia in its final approach to the ocean. Hay knew the task would be difficult when he set out. A good overview requires a vantage from which to look at the broader processes that are taking place, a position from which everything can be put into perspective. Such a perch is difficult to find when we are so clearly in the process ourselves. Hay assumes a somewhat different perch in each chapter. However, he never takes a look at the environmental justice literature, which considers how differential access to environmental resources and exposure to insults affect well-being across race and income. This is a serious shortcoming. With this significant caveat, this volume could provide a very interesting companion to a wide variety of courses in environmental ethics, history, politics, and social theory in general. For more established scholars addressing environmental

issues from a particular disciplinary perspective, Hay provides an interesting reminder and partial synthesis of the breadth of our efforts.

RICHARD B. NORGAARD
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H. C. DARBY, *The relations of history and geography. Studies in England, France and the United States* (University of Exeter Press, 2002). xiv + 293 pp. 9 plates; 7 figs. £40.

This book is based on a lecture series that Clifford Darby gave to students at University College, London and later at Cambridge. Darby gave this course over many years, and it bears signs of having been updated until the mid-1960s. Its format, as suggested by the title, is a three-nation survey of work at the borders of history and geography, and, under each national heading, discussion is divided into four parts: the geography behind history (essentially, environmental determinism); past geographies (the 'cross-section' approach to historical geography for which Darby is best known from his editorial labours on the Cambridge historical geographies); the history behind geography (the evolution of place over time); and the historical element in geography (human alterations to the environment over time). Essays elucidating and updating Darby's work have been appended to these national surveys by three former students and admirers of Darby: Hugh Prince (on England); Hugh Clout (on France); and Michael Williams (on the United States). The whole is framed by assessments of Darby's contribution to the methodological definition of historical geography.

The major issue for any reviewer of this book is the vexed question of *cui bono*: what good does publishing these lectures some forty years after they were written serve the scholarly community? The editors seem to waver between asserting that they are a major methodological statement and making the rather more modest claim that they form 'a contribution to the historiography of historical geography' (p. xiii). Let us take these possibilities in turn. Read as a methodological statement of relevance in the present, these essays canvass an issue which is hardly a 'live' one in historiography, the need to beat the disciplinary boundaries between history and geography seeming a far less pressing concern to the parishioners of both disciplines than in Darby's day. Even waiving that and accepting that Darby has identified a serious issue, the twelve essays printed here remain decidedly weak as a methodological statement about how to practise geography, history and historical geography. Darby was himself constitutionally averse to a methodology that was expressed outside the realm of practice, and this hostility is abundantly evident here. The essays claim to demarcate the spheres of history and geography, but Darby himself admits that this is a rather quixotic pursuit: 'geography and history refuse to be separated in practice, whatever theoretical distinctions we may draw between them' (p. 171). So, if Darby set himself the task of methodologically delimiting geography and history, in the course of the text itself he both eschews theory and denies the possibility of such a delineation.

Perhaps, then, these essays should be seen as a key text in the history of geographical thought. Whilst their provenance entitles these essays to attention by historians of geography almost by default, they are in fact rather disappointing even when viewed in this light. Whatever the verve of Darby's lecturing style, the prose rendering of this material reads as a set of twelve annotated bibliographies, whose categories are initially appealing, but whose rationales of inclusion and exclusion are wholly opaque on any prolonged interrogation. Furthermore, the categories Darby deploys imprison the writings they discuss in a framework he had established years previously in a paper published in 1951, such that this book adds little that is new to our understanding of Darby's map of the scholarly landscape. These essays are not what Darby will be remembered for, and rightly so: they show him venturing into the unfamiliar territory of theory and relapsing from explication and elucidation to enumeration.

With no clear rationale for publication in terms of current relevance and only a tangential interest for historians of geographical thought, the present reviewer could not but see *The relations between history and geography* as a *memento mori* for academics. For as a skull might symbolize both the power and the transience of mortals for a Renaissance scholar, so these essays might perform a similar role for a budding historical geographer. These essays have been lovingly edited, annotated and elucidated by Darby's students, all of whom have had highly distinguished careers but remain in the thrall of their master's voice. And yet viewed by one outside that thrall (both in terms of training and generation), these essays appear of nugatory significance, as embroiled in sterile border disputes where ignorant scholarly armies clash by lamplight. If such transience applies to the musings of a figure of the stature of H. C. Darby, the present reviewer can only see his own commentary on Darby's words as falling under the same stricture to the power of two.

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University of Wales, Aberystwyth

Conference Report: The Society's Spring Conference, April 2002

by Jeremy Burchardt

The Society's annual Spring conference, organised by Prof. Alun Howkins, was held from 8–10 April at the University of Sussex's Institute of Development Studies, a grade 1 listed building with windows by John Piper. In this attractive setting, the 56 people on the conference list enjoyed a wide range of stimulating papers.

The first of these, by Prof. John Beckett, Prof. Michael Turner and Dr Bethanie Afton, was on the topical subject of 'Agricultural sustainability'. Adapting the Brundtland Commission's definition of sustainability, Beckett, Turner and Afton argued that sustainable farming was farming which met the needs of the present generation without compromising the needs of the generations which followed. They outlined a model of three overlapping dimensions of agricultural sustainability: the ecological and environmental, economic and ethical. Case studies of two farming systems followed: the Midlands three field rotation and the Wessex eight course, demonstrating that both were surprisingly sustainable ecologically although perhaps less so economically. Each of the three dimensions of sustainability was interconnected, and if one was moved, the others would be correspondingly dislocated. Economic pressures, exacerbated by the Napoleonic Wars, undermined the environmental sustainability of the open field system in the late eighteenth and early nineteenth century. The paper concluded with the suggestion that the Foot and Mouth outbreak of 2001 raised the question of whether the sustainability of agriculture and of the countryside could still be identified with each other.

After dinner, Prof. Brian Short gave a paper with the piquant title '"Landscape for a tired and smoke-dried citizen": agrarian and environmental conflict in Victorian Sussex'. This appropriately local theme was illustrated with slides of the various different landscape types characteristic of Sussex, many of which we were to pass through on the conference excursion on the following day. Prof. Short drew a contrast between the coastal fringe (consisting of the coastal plain itself, the South Downs and a mixed area to the north of the Downs) and the Weald (divided into the heavy clays of the Low Weald and the mixed sands and clays of the High Weald). The four major agricultural developments of the Victorian era were the spread of hop-growing (by 1874 Sussex accounted for 25 per cent of English production), the development of the Sussex breed of cattle and the increase of chicken-cramming and of dairying in the west of the county and on the Weald respectively. Rural Sussex depopulated in the mid-nineteenth century but by the end of the century preservation-minded middle-class incomers with very different cultural expectations from the agricultural inhabitants were becoming a feature of some areas. Ashdown Forest and other areas of common and heath in the Weald were the principal *locus* of conflict between farming and conservation interests. Prof. Short reminded us, in conclusion, that this conflict continued: in Wealden Sussex struggling small farmers could, to this day, be found alongside wealthy incomers with four-wheel drive vehicles.

Dr David Stead began proceedings on Tuesday morning with a paper on 'Crops and contracts: land tenure in England, *c.* 1700–1850', which addressed the question of why fixed rents were so dominant in English agriculture in this period as opposed to the alternatives of cultivation by the owner, the employment of a salaried manager or a sharecropping contract. Dr Stead argued that the only economic assumption which correctly predicted fixed rent tenancies was that landowners were risk averse. This may have been because maintaining their social and political standing committed them to high fixed costs. Farmers were prepared to assume risk because landowners charged them a low rent – in effect a risk premium.

After coffee Professor Robert Allen gave a paper the title of which ('Innovation and decision-making in the open fields') was belied by its impressive breadth of coverage, ranging across European economic history from the late middle ages to the nineteenth century. Prof. Allen argued that the traditional account of agricultural progress – that improving landlords enclosed land and

amalgamated farms, leading to a rise in output and productivity and increased food and labour supplies for the urban economy – should be turned on its head. Economic modelling suggested that enclosure contributed little to English agricultural productivity, whereas urbanization was crucial. Exports of new draperies in the early modern period stimulated intense expansion in south-east England and from the seventeenth century London wages increasingly left the incomes of small (mainly open-field) farmers behind. The motivating factor for the agricultural revolution, Prof. Allen argued, was that small farmers wanted to close this gap. High wage economies such as early modern England's generate greater incentives to find labour-saving technology: growth was successful because wages were high, rather than the other way around.

After these two highly stimulating but largely theoretical papers, Dr Margaret Yates demonstrated the virtues of a more traditional empirical approach with a deeply-researched paper on 'Between fact and fiction: Brinklow's "Complaynt" against rapacious landlords'. Brinklow was a Protestant polemicist and member of the Mercers' Company, who wanted to redistribute the wealth of the chantries to create a proto-socialist Godly Commonwealth, comparable to Thomas More's Utopia. He bitterly attacked the new owners of monastic lands, alleging that they had raised rents excessively. In this he was echoed by three other Protestant polemicists of the 1540s: Thomas Becon, Robert Wisdom and an anonymous London reformer writing in 1541 or 1542. These four polemicists also complained about the engrossing of farms but not, interestingly, about enclosure. However, Dr Yates demonstrated that in Brinklow's home county of Berkshire at least, rents and entry fines did not increase very much, other than in a few exceptional areas. Nor was the engrossing of farms a distinctive feature of the period. The complaint literature of the 1540s appears, then, to bear only a tangential relationship to the facts of economic change.

In the afternoon Mr Richard Harris, Director of the Weald and Downland Open-Air Museum, led an excursion to the Leconfield Estate, Petworth, to which Prof. Brian Short and Mr John Veltom also contributed. The main focus of the excursion was a visit to Stag Park Farm, a model farm created by the improving third Earl of Egremont. An outstanding array of late eighteenth-century buildings survives, including a large threshing barn, a hay barn/engine house, loose boxes, stables, granary and farmhouse, together with cattle yards and a pond. The farm manager and gamekeeper described the changing relationship between farming and shooting on the estate: the latter was increasingly remunerative. Wholesale destruction of, for example, magpies and foxes went hand-in-hand with the conservation of preferred kinds of species such as songbirds and rare bats.

After the excursion the Society's annual general meeting and the annual dinner took place. The first paper on Wednesday morning was Dr Edward Bujak's account of 'An aristocracy in decline, 1874–1914'. The Suffolk aristocracy invested heavily in agricultural improvement in the third quarter of the nineteenth century but by the 1880s only the continuing local social status conferred by landownership, rather than its economic or political benefits, made great estates in Suffolk marketable. The Suffolk aristocracy bitterly opposed early agricultural trade unionism: their earlier investment in cottages and allotments proved crucial in retaining the loyalty of labourers in closed parishes during the agricultural depression. This enabled landowners to gain election to new representative local bodies such as county, rural district and parish councils, which in turn encouraged middle-class incomers to behave socially and politically in ways which were consonant with aristocratic values.

Dr Tony Phillips then gave a paper on changes in agricultural land use and cropping in Shropshire between 1815 and 1850. Starting from Turner, Beckett and Afton's conclusion that the wheat acreage in England peaked in the early 1840s, Dr Phillips drew on the 1801 crop returns, the tithe files and the 1854 inquiry to show that at first sight Shropshire appeared to follow similar trends. However, there were problems with these sources – categories of land use and crops and units of recording were inconsistent and there was a only limited degree of correspondence between the sources used. Continuous runs of estate cropping books might, Dr Phillips argued, provide better data. Evidence from the Bridgewater, Powis and Sutherland estates showed that the wheat acreage increased very little in Shropshire after 1815. If agricultural output did rise in Shropshire in these years, this took place against much greater stability in cropping than has been assumed, bringing into greater prominence the productivity changes identified by Turner, Beckett and Afton.

The last paper of the morning and of the conference, Prof. David Hey's attractively-illustrated account of 'Farming dynasties: the yeomen and husbandmen of south-west Yorkshire', was based principally on surname evidence. Surnames were often strongly associated with particular areas: every county of England still has its own distinctive names despite the homogenisation that has taken place. Taking an example chosen not entirely at random, Prof. Hey explained that people with the surname 'Mingay' appear to share a common area of origin on the Suffolk-Norfolk border. 'Locative' names deriving from a single farmstead, hamlet or village constitute

about a quarter of all surnames. In south-west Yorkshire (Hallamshire), surname evidence demonstrates that farms stayed in the hands of the same families for several generations: even where the direct line of descent was broken, a vacant farm was often taken by someone from another branch of the same family. Many of these Hallamshire families were highly conscious of their genealogies. The prosperous yeomen of the sixteenth and seventeenth centuries, who were responsible for most of Hallamshire's many substantial early modern buildings, can in nearly every case be traced back to medieval yeomen families.

The conference closed after lunch with thanks expressed to Prof. Howkins, his assistant Christine Shepherd and the staff at the Institute of Development Studies for a stimulating and successful conference.

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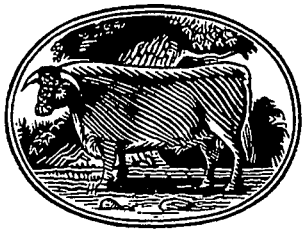

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