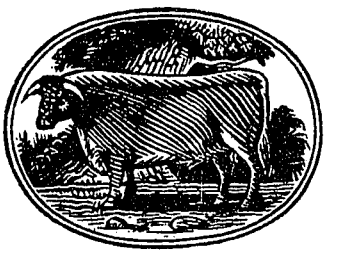
The AGRICULTURAL HISTORY REVIEW



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PART I

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Female Wage-Earners in Late Fourteenth-Century England[1]

By SIMON A C PENN

HISTORIANS are becoming increasingly aware of the role played by women in the economy of medieval England. Their involvement in the cloth industry, for example, particularly as spinners and weavers, has long been recognized as has their participation in the brewing and selling of ale.[2] More recently, attention has been extended to the presence of women as retailers, not only of drink, but also of food and clothing within both small and large towns of the period.[3] A greater appreciation of women's economic role in medieval urban society, however, has not been matched by a similar reappraisal of their involvement in rural work. Recent discussion of women's work at harvest time, for example, has tended to concentrate on the situation that existed after 1450. By and large, studies have emphasized the limitations upon female involvement in such activity. Thus, although it is shown that women worked in the early modern period as harvesters and farm labourers, the opportunities for such work and the rewards to be gained from it were restricted. It has been argued, for example, that the allocation of harvest work was made on the basis of strength. Consequently, women rarely reaped and almost never handled the scythe to mow. Moreover, even when women did help with the harvest labour, they appear to have been paid less than their male counterparts. The general impression is that whilst women did indeed play a part in the harvest their involvement was largely restricted to the relatively unspecialized and lower paid tasks such as gathering and binding the sheaves.[4]

Certainly a cursory glance at the medieval evidence suggests that similar restrictions were in force. Limitations upon the range of work available to women seem to have existed amongst the full-time wage-earners who comprised the demesne *famuli* of the twelfth and thirteenth centuries. The opportunities for employment open to females were far fewer than those open to males, women only appearing in any numbers amongst the ranks of servants, cooks and dairymaids. Thus, not only did women have fewer jobs from which to choose but they appear to have been employed largely in unspecified service roles, the more specialist tasks such as ploughing and mowing being reserved for the men. Of course, the fact that we are seldom told exactly what sort of work servants were expected to do means that one should not over-stress these apparent limitations upon the work experience of female members of the demesne labour force. Certainly, however, women's labour appears to have been more expendable than that of men. In the thirteenth century women were obliged to rest on certain days

[1] The research for this paper was made possible by a grant from the Economic and Social Research Council as part of its research programme on the history of prices and incomes between the thirteenth and the eighteenth centuries (Ref No B05250001). I would like to thank Christopher Dyer and Rodney Hilton for their comments on earlier drafts of the article.

[2] E Power, *Medieval Women*, Cambridge, 1975, pp 65, 66–7.

[3] See for example, R H Hilton, 'Lords, burgesses and hucksters', *Past and Present*, 97 (1982), pp 10–11; 'Women traders in medieval England', in *Class Conflict and the Crisis of Feudalism, Essays in Medieval Social History*, 1985, pp 205–15.

[4] On female labour in general see A Kussmaul, *Servants in Husbandry in Early Modern England*, 1981, pp 15, 34, 37; on harvest labour in particular see M Roberts, 'Sickles and scythes: women's work and men's work at harvest time', *History Workshop*, 7, 1979, pp 7, 9: M F Roberts, 'Wages and wage-earners in England: the evidence of the wage assessments, 1563–1725', unpublished D Phil thesis, University of Oxford, 1981, pp 184, 185.

whilst the adult males were to continue work as usual.[5]

Was the extent of female involvement within the sphere of rural wage-earning in the fourteenth century similarly limited by such considerations? Thorold Rogers certainly felt that women's work in the fields was limited to a great extent by their duties in the home. Thus, in the winter when dairy work was light, the dairywoman would probably have winnowed the corn but apart from that the female role appears to have been very much a secondary one – planting beans, binding and stacking the sheaves, reaping and gathering the stubble after the corn had been cut or bedding and cocking the hay following mowing.[6] However, Christopher Middleton sees a clear distinction between the lack of work opportunities open to women amongst the permanent demesne labour force and the less restrictive situation which appears to have existed amongst the reserve of seasonally hired labourers, where women are found to be involved in a whole host of agricultural activities.[7] Certainly this assertion of widespread female involvement in rural work as hired labour is one that is borne out by contemporary sources. Village by-laws of the late thirteenth and early fourteenth centuries, for example, reveal that women were not only following the harvest as gleaners but indeed that the able-bodied amongst them were to be prepared to help with the reaping if required to do so.[8] Manorial accounts of the period are even more informative as regards the use of hired female labour. In addition to the recognized female tasks of planting beans, binding sheaves and gathering stubble, women are found to be employed in a variety of agricultural tasks: cleaning wheat for seed; hoeing; weeding; hay-making; reaping; threshing; winnowing; carrying the corn; and following the plough. Rodney Hilton's study of Leicestershire estates even suggests the employment of women as mowers, though it has been asserted that they may have been using a sickle to cut barley rather than handling a scythe.[9]

Doubtless further research into manorial records will help to strengthen this image of women working alongside men in the fields, and often performing the same tasks. Such sources, however, can only tell us so much about female participation in agricultural work. One can certainly discover something of the range of jobs available to women and, in many cases, the wages which they received, relative to those paid to men. On many aspects of female employment, however, the manorial records remain largely silent. One gleans little information, for example, on the proportion of women employed in the fields in relation to men. Nor does one normally get any indication of the periods of time for which women were being employed. Were female harvest workers, for example, working for the duration of the autumn, or simply at certain times during the harvest period when additional family labour was needed? Similarly, one does not know the extent to which women were moving around the countryside in search of such work. Studies of nineteenth-century female labourers reveal that women were often highly flexible when it came to field work, moving from one place to another performing a variety of jobs for a number of different employers.[10]

[5] C Middleton, 'The sexual division of labour in feudal England', *New Left Review*, 113–114, 1979, p 160; M M Postan, 'The famulus: the estate labourer in the XIIth and XIIIth centuries', *Econ Hist Rev*, supplement 2, 1954, Appendix II, p 47: B Harvey, 'Work and festa ferianda in medieval England', *Journal of Ecclesiastical History*, XXXII, 1972, p 291.

[6] J E Thorold Rogers, *A History of Agriculture and Prices in England*, I, 1866, pp 261, 266, 272–3, 281.

[7] Middleton, 'The sexual division of labour', pp 160, 161.

[8] W O Ault, 'By-laws of gleaning and the problems of harvest', *Econ Hist Rev* 2nd ser XIV, 1961, p 211; *Open-field farming in medieval England – a study of village by-laws*, 1972, pp 82, 84, 87, 92–3, 110, 120–1.

[9] Eg W Beveridge, 'Westminster wages in the manorial era', *Econ Hist Rev* 2nd ser VIII, 1955, p 34; Power, *Medieval Women*, p 71; R H Hilton, *The Economic Development of some Leicestershire Estates in the 14th and 15th Centuries*, Oxford, 1947, pp 145–6; Roberts, 'Sickles and scythes', p 6.

[10] See for example, Jennie Kitteringham, 'Country work girls in nineteenth century England', in R Samuel (ed) *Village Life and Labour*, 1975, p 93.

One needs to discover more about the continuity and flexibility of female employment and about the mobility of the women themselves if one is to gain a better understanding of female wage-earning in medieval England.

I

Fortunately, for the second half of the fourteenth century at least, one is able to draw upon evidence other than manorial records for information on wage-earning women. Indictments brought under the Statute of Labourers of 1351 provide a wealth of information on wages and employment during the half-century or so following the Black Death of 1348–9. During this period of severe labour shortage the Statute, and the Ordinance of Labourers which preceded it two years earlier, attempted not only to control wages but also to restrict the mobility of the labourers themselves. In particular, the Statute laid down specific maximum wage rates for various occupations, special concern being shown at the provision of food and drink in addition to a cash payment. Certain conditions of employment were also stipulated; servants, for example, were not to work by the day but only on longer term contracts. Prices charged by craftsmen for their various wares were also regulated.[11] The surviving indictments are therefore concerned with such matters as the receipt of excessive wages, the refusal of workers to serve by the year or other terms, and the movement of individuals from one place to another in search of greater salary. The majority of such cases of infringement of the labour laws are recorded in the assize rolls and ancient indictments in the Public Record Office.[12] These rolls include proceedings of two types. Prior to 1359, proceedings were held before Justices of Labourers, specially appointed to hear cases relating to the receipt of excessive wages. From the 1360s, however, presentments of Statute offenders were made at the county quarter sessions of the Justices of the Peace.[13] In both sets of records women appear, often in substantial numbers, amongst those indicted.

Despite the weighty evidence relating to wages and conditions of employment contained in these rolls the sources themselves have certain limitations. In the first place, the extant rolls probably represent only a small proportion of sessional proceedings held during the period. By the end of the century, in particular, the incidence of labour cases being dealt with before the Justices of the Peace becomes progressively less. As earlier historians have noted, this would appear to coincide with the permanent sitting of King's Bench at Westminster which meant that it was no longer necessary for sessional rolls to be produced.[14] Moreover, even those rolls which were produced in preparation for a visit by King's Bench and have thus survived, contain records of undetermined indictments only. Many offences are likely to have been determined in session and were not, therefore, recorded on the rolls themselves.[15] The coverage of the surviving peace rolls is also limited geographically; the majority of detailed labour cases relating to counties to the south and east of the country, Essex, Lincolnshire, Norfolk and Suffolk. The dearth of recorded labour offences in other parts of the country may be due merely to the fact that, as in Gloucestershire for example, such business having already been completed did not need to come before King's Bench. Alternatively, a lack of wage-earners presented in particular areas could reflect the predominantly pastoral, as

[11] *Statutes of the Realm*, I, pp 311–13.
[12] Classes JI. 1 and KB.9.
[13] For details of the administrative background to the enforcement of the statute of labourers see, B H Putnam, *The Enforcement of the Statutes of Labourers during the First Decade after the Black Death*, New York, 1908, pp 7–17.
[14] Eg B H Putnam, *Proceedings before the Justices of the Peace in the 14th and 15th Centuries – Edward III to Richard II*, 1938, pp ixv–lxix.
[15] *Ibid*, pp cxii–cxxiv.

opposed to arable, basis of certain regional economies.[16]

It has also been argued that the peace rolls themselves are unreliable when it comes to specific factual information such as the dates of certain cases. More serious, in the light of the present discussion, is the added assertion of 'selective' presentments by presenting juries. Up to now this has been put down to some form of class interest. In particular, J B Post has argued that members of the gentry were above all else safeguarding their own interests in their role as presentment jurors, often concentrating on offences committed against themselves.[17] Such a purely class bias in the presentment of statute offenders, however, should not be over stressed. Many wealthier peasants were themselves employers of labour and, as has been shown recently, they too were to be found at the forefront of Statute of Labourers enforcement on a local level.[18] Indeed, in the light of some of the evidence to be discussed presently, one should not disregard the possibility that in addition to some sort of class bias a certain amount of anti-female prejudice may also have been at work.

Despite these limitations, the sessional rolls are an invaluable source for examining the extent of female wage-earning in late fourteenth-century England. There is wide variation in the amount of detail provided in the surviving indictments. The earlier records of the 1350s normally consist simply of presentments of Statute offenders, usually by the village or by the hundred, to the Justices of Labourers. The name and sometimes the occupation of each offender is recorded, but details of wages or other terms of employment are rarely provided. These rolls do, however, give a rough indication of the proportion of female wage-earners in certain areas, and the jobs at which they were habitually employed. The later sessional rolls of proceedings before the Justices of the Peace, however, provide much more information not only on the tasks performed but also on the place and period of employment, the mobility of the wage-earners themselves and the wages which they were said to have received. These latter rolls can thus be studied to throw much incidental light upon the precise terms of female employment during the period.

II

As indicated above, surviving records of proceedings before the Justices of Labourers often reveal the number of women presented for infringements of the Statute in certain areas, compared with the number of men. During this period of labour shortage one should probably expect to discover greater importance being credited to female labour. In some cases, however, the proportion of women is very small. Of seventy-nine individuals presented for taking excessive wages in Morleston wapentake, Derbyshire in June 1357, for example, only eight were women. Two of these were described as servants, whilst a third, Alice le Baxter of Long Eaton, had taken excessively for baking bread. In the same roll, on the other hand, out of a total of seventy individuals similarly presented by the Allestree Jurors in December of the same year, no less than thirty were women. Three of these were presented along with their husbands and another seven described as weavers.[19] Such a large difference in the number of women presented from these two regions of Derbyshire obviously presents a problem. It is unlikely that the relatively small proportion of women presented from the Morleston region is a consequence of any

[16] E G Kimball (ed), 'Rolls of the Gloucestershire sessions of the peace 1361–1398', *Transactions of the Bristol and Gloucestershire Archaeological Society*, 62, 1940, p 47. For reference to the argument that labour unrest in Shropshire at this time was slight due to the importance in that county of cattle-raising, see E G Kimball, (ed), *The Shropshire Peace Roll, 1400–1412*, The Salop County Council, 1959, p 47.

[17] J B Post, 'Some limitations of the medieval peace rolls', *Journal of the Society of Archivists*, 4, 1973, pp 635–8.

[18] L R Poos, 'The social context of statute of labourers enforcement', *Law and History Review*, I 1983, pp 34–37.

[19] PRO, JI.1/170 mm. 2, 3d; Putnam, *Enforcement*, pp 163–4.

positive discrimination against the employment of women in that particular area. On the contrary, the fact that few women are actually named could reflect a certain lack of interest on the part of the jurors there in the sex of those indicted. In the same way, the high proportion of women presented by the Allestree jurors may indeed suggest that women were more frequently employed in that area. However, it is more probably the case that, for whatever reason, those particular jurors were making a concerted attempt to pick out female offenders. The possibility of selective presentments of females, as against males, must be borne in mind throughout this discussion. As shall be seen later, such a possibility is of particular importance when one goes on to consider the significance of the actual wages paid to female offenders.

Where details of the actual wage-earning activities are cited more consistently in these lists of presentments, one can build up a clearer picture of the type of work in which women were involved. A surviving Somerset roll for 1358–60 is particularly full. At a series of sessions held before the Justices of Labourers, jurors from each of the county's hundreds and some of the more important towns are found presenting individuals for taking 'excessively' against the Statute. The name of each offender is cited in the roll, together with the amount which he or she was fined and, most importantly, the activity concerned. The roll thus provides a unique view of the occupational structure of the county as a whole.

At sessions held before the Justices of Labourers at Wells on 19 February 1358, jurors from thirty-eight hundreds, the four towns of Axbridge, Bridgwater, Langport and Wells and from the City of Bath presented recalcitrant workers. A total of 466 offenders are listed, together with the activity in which they had been involved and the amount of which they were fined.[20] Of these, 345 (74 per cent) were men and 121 (26 per cent) women. A breakdown of those named, both by occupation and by sex is given in Table 1.

TABLE 1
Workers presented before Justices of Labourers in Somerset, 19 February 1358

Occupational grouping	*Men*	*Women*	*Total*
Common labourers and spinners	85	33	118
Brewers	62	20	82
Common labourers	43	21	64
Weavers, spinners and labourers	12	11	23
Weavers	15	7	22
Bakers	20	1	21
Cobblers	20	–	20
Spinners	1	15	16
Weavers and spinners	1	11	12
Brewers, labourers and weavers	12	–	12
Brewers and spinners	8	2	10
Carpenters and wheelmakers	9	–	9
Masons	7	–	7
Carpenters	7	–	7
Glovers	7	–	7
Fishermen	6	–	6
Tailors	6	–	6
Brewers and Labourers	6	–	6
Butchers	6	–	6
Coal sellers	4	–	4
Smiths	3	–	3
Threshers and mowers	3	–	3
Saddler	1	–	1
Cellar	1	–	1
Total	345	121	466

It is immediately apparent from this list that many of those named were being lumped together under multiple occupational headings. This may either suggest that those concerned were involved in more than one activity or, as is more likely in this case, that certain jurors (or perhaps the clerk who compiled the roll) did not deem it worthwhile to distinguish between certain groups of workers from particular regions. Turning to the sexual differentiation of work, the evidence by and large reveals the women to be involved in traditional female activities. Thus, although women figure quite prominently as brewers, they are

[20] PRO, JI.1/773 mm. 1–4.

conspicuous by their absence from the ranks of leather workers and building craftsmen. Female involvement in the cloth industry is also apparent. Seventy-two (59.5 per cent) of the women named are listed in those occupational groupings, embracing spinners, whilst women can also be seen to be involved in weaving. We shall return in a moment to the evidence contained in this roll of female 'labourers'.

Village-by-village presentments, where they survive, also suggest this widespread involvement of women at various stages in the manufacture of cloth. An assize roll for Herefordshire for 1355–6 is particularly informative on the range of female occupations in a number of small towns and villages throughout the county. Their dominant role as spinners and weavers of cloth is clearly apparent. Thus, all of the seven spinners from Norton near Bromyard who were presented for receiving more for their work than they used to do before the Black Death were women. Similarly, at Pembridge near Leominster, out of forty-seven individuals presented, ten were women, comprising all of those described as 'weavers, spinners and servants'. Of the seven weavers and dress-makers (*shepsters*) presented from the village of Almely, five were women, whilst the four spinners and weavers of nearby Brobury, similarly presented, were also women.[21]

In the first place, therefore, such cases serve to confirm the existing impression of the large-scale participation of women in the earliest stages of cloth manufacture. The absence of comparable evidence for the pre-Black Death period makes it difficult to be certain whether such a widespread female presence as rural cloth workers was a purely post-plague phenomenon or if women had already been involved in such work before the epidemic struck. The researches of Power and others certainly suggest that the situation revealed in these rolls was nothing new and that spinning, weaving and also brewing had long been carried out by women. There is, however, a more fundamental problem with this evidence. Although the individuals presented are said to have taken excessively, they may not in fact have been wage-earners pure and simple. As in the towns, many of these female cloth workers may have been part of a 'self-employed' family workforce into which they had been born or married, and to which they were contributing during a period of labour shortage, charging excessive rates for their trouble. Similarly, the brewers and victuallers cited in the sessional rolls may be simply small-scale retailers fulfilling a like role to that carried out by the wives and daughters of urban households.[22] Such evidence alone, therefore, probably tells us very little about the true wage-earning woman, let alone of her participation in agricultural labour.

III

Fortunately, however, these early rolls also indicate female involvement in agricultural work. Some of the evidence is highly suggestive. Over a third of those listed in Table 1 as 'common labourers and spinners' were women. It is of course possible, if not probable, that many of these women named were spinners alone and were simply being grouped together with male labourers for administrative convenience. It is therefore of some significance to find that nearly a half of those described simply as 'common labourers' were also women. Unfortunately, this particular roll does not go so far as to tell us the precise nature of the work that these female labourers would have been involved in. Other records, however, are more informative. The returns of an inquest for Highworth and Cricklade hundred in the northern tip of Wiltshire in 1352–3 reveal sixteen women amongst the total of fifty-five individuals presented for taking excessive wages. The occupations of thir-

[21] PRO, JI.1/312 mm. 3, 5d.

[22] Hilton, 'Women traders', pp 205–15.

teen of these women are given. Eight of them are described as brewster and another two as pedler. The other three women, however, are presented along with one of their husbands and another two men with having taken *5d* each day with courtesy 'in the autumn'. The implication is that these women were helping with the harvest. That this was almost certainly the case is made clear in a similar return for Chippenham hundred in the north-west of the county. No less than fifty-one, or more than half, of the 101 individuals presented there for taking excessive wages were women. Of these, twenty were brewers, twenty spinners, two servants and one a linen-maker. The remaining eight women, however, are each described as a 'harvester'. What is perhaps even more surprising is the fact that only four men are thus described.[23] Although details of the actual tasks that these female harvesters were performing is not given, this evidence is significant in suggesting, at least on a general level, the large-scale employment of women in the fields at harvest time.

This evidence alone does not take us very far in estimating the exact nature of women's work during the autumn. It may well be that the Wiltshire women discussed above were largely employed in the more menial tasks associated with bringing in the harvest, the reaping and the mowing being left to the men. In cases where more precise details are given of the actual tasks involved, however, women are often found to be performing the same work as men. Once again the Herefordshire roll of 1355–6 is particularly revealing. Although women do not appear in the village presentments as threshers or mowers, they dominate the ranks of reapers. Thus, all four reapers presented from the village of Cradley, and all five from Kinnersley, were women. In numerous other cases it is clear that the women concerned were combining reaping with some other wage-earning activity, normally one associated with the cloth trade. In Lyonshall, for example, from where eighteen labourers were presented, the four women named are described as reapers and spinners (*mestrices et filatrices*). This same designation is also applied to no less than sixteen women from the two southern settlements of Ross-on-Wye and Weston under Penyard, presented for taking excessive wages. At Much Cowarne, in addition to four female reapers a further four women described as reapers and spinners were also presented. Four female reapers and weavers (*mestrices et textrices*) were presented from Upton Bishop whilst of the nine labourers from Canon Frome similarly described, five were women.[24]

As suggested above, one should clearly be aware here of the possibility of selective presentments. Not only were the authorities probably focusing their attention on harvest workers in general because of the difficulties of recruiting labour during the autumn from an already depleted labour force, but it is possible that they regarded the wage demands of women, given their social prejudices, particularly offensive. However, even if this was the case and that subsequently the proportion of female reapers in Herefordshire is thereby exaggerated, it does not disguise two important facts. First, that women were actively involved in the fields at harvest time, being employed as reapers, and that secondly, this work represented some form of seasonal employment which supplemented income to be gained at other times of the year by, for example, spinning or weaving.

IV

Even if it is assumed that, in some parts of the country at least, women were being employed in a variety of jobs at harvest time, does it necessarily follow that they were also

[23] E M Thompson, 'Offenders against the statute of labourers in Wiltshire, a.d. 1349', *The Wiltshire Archaeological and Natural History Magazine*, XXXIII, 1904, pp 386–90.

[24] PRO, JI.1/312 mm. 6d, 5d, 7, 6.

being paid the same wages as men? Previous work on the sexual differentiation of wages in medieval England has tended to point to two general conclusions. In the first place it would appear that women were usually employed in particular types of work and paid at rates lower than in those jobs traditionally dominated by men. On the other hand, evidence suggests that where women did do the same work as men, they were usually paid at the same rate.[25] Thus, one would not expect to find the sort of discrimination against hired female labour which one sees, for example, in the wages paid to women employed during the grape harvests in Toulouse.[26] Indeed, during a period of severe labour shortage such as that which followed the Black Death it would seem that the less well paid labourers, including women, were in a far better bargaining position when it came to both the type of work which they were required to do, and the wages which they received for it. One of the major findings to come out of Beveridge's work on prices and wages is that this period witnessed a significant closing in the differential between the wages paid to skilled and unskilled workers.[27]

For details of the wage rates of female harvest workers one must turn to the records of the county quarter sessions of the Justices of the Peace. Extant rolls from the 1360s include many cases of men and women being presented together for working in the autumn at excessive rates. On many occasions the women are presented along with their husbands. Thus, at sessions held at Pocklington in the East Riding of Yorkshire in May 1363, John de Repynghale and two married couples were presented to the Justices for having received 4*d* and their board (*mensam*) for each day's work during the autumn.[28] Similarly, Thomas Heruy of Kilnwick, who was also employed in the district as a thatcher, was presented at the same time along with his wife Agnes. The record states that each of them had taken separately 4*d* per day with food (*esca*) from Robert of Fenton for working in the autumn.[29] It is possible that, as in later periods when husband and wife are found working together in the harvest field, the man was actually doing the reaping and mowing whilst his wife was employed as a 'gaveller', whose job it was to rake the corn into rows ready for carting.[30] At other times when large numbers of labourers are presented together, familial links are less in evidence. In March 1364, a group of nine recalcitrant labourers was presented before the East Riding Justices for having received 5*d* and lunch (*prandium*) each day for their work during the autumn. Two of them, John and Emma Hambald of Huggate are stated to be man and wife. However, Alice, wife of Richard Buterum is presented without her husband, whilst for the other three women named there is no evidence of any family ties with their fellow workers.[31] Although it is clear, therefore, that some of the women harvesters employed in the fields were working alongside their husbands this was obviously not always the case. That many women were being employed as independent labourers during harvest time is also suggested by the numerous occasions when women were presented before the Justices, either individually or in pairs.[32] What is even more significant is that in all those cases where women are presented for taking excessive salary during the autumn, whether they be listed alone, alongside their husbands or within a larger group, there is

[25] See for example, Beveridge, 'Westminster wages', p 34; R H Hilton, *The English Peasantry in the Later Middle Ages: the Ford Lectures for 1973 and Related Studies*, Oxford, 1975, pp 102–3; Middleton, 'The sexual division of labour', p 161.

[26] E Perroy, 'Wage labour in France in the later middle ages', in S L Thrupp (ed), *Change in Medieval Society, Europe North of the Alps, 1050–1300*, New York, 1964, pp 240, 241.

[27] Thorold Rogers, *A History of Agriculture and Prices*, I, pp 266, 274, 282; Roberts, 'Sickles and scythes', p 15; Beveridge, 'Westminster wages', p 33.

[28] B H Putnam (ed), *Yorkshire Sessions of the Peace, 1361–1364*, Yorkshire Archaeological Society Record Series, 100, 1939, p 59.

[29] *Ibid*, pp 75,76.

[30] G E Evans, *Ask the Fellows Who Cut the Hay*, 1956 – 1983 edition, p 87.

[31] Putnam, *Yorkshire Sessions of the Peace*, p 72.

[32] Eg *ibid*, pp 59, 60, 72.

never any difference in wage rates based on the sex of the labourer. Although the term 'autumn' work could embrace virtually any aspect of harvest labour, it is clear that whatever the actual task involved, the women were being paid at the same rate as the men.

Sometimes the sources take us a stage further by specifying the actual work involved. Such cases not only confirm that women were engaged in the same harvest tasks as men, but that they were also at times receiving the same pay. During a session held at Pocklington on 23 May 1363, a total of thirty-three reapers were presented for whom rates of pay are given. Only two of these were men, who were charged with receiving 4*d* plus their board for each day's work during the autumn. Of the women, twenty-one were charged with having taken the lesser amount of 3*d* and board for each day's reaping during the same period. The other nine, however, were all paid at the same rate as the men, ie 4*d* and board each day.[33] Whatever the reason for this differentiation in wages paid to these Yorkshire reapers it was clearly not based solely on sex. It may be, for example, that the higher rate was being paid to those men and women who were being taken on as supplementary harvest labourers at a period of exceptional demand. A Wiltshire roll of the following year reveals a similar lack of concern in discriminating between the sex of the reapers. Once again women appear in some numbers alongside men as reapers, employed for short periods of time during the harvest weeks. In Wiltshire the remuneration for this work was more likely to be in kind rather than in cash; payment by sheaves being the norm. This may well have been a legacy of earlier medieval harvest practice in which the labour of reaping was often rewarded with sheaves of corn.[34] In cases where this particular method of payment was still adopted in late fourteenth-century Wiltshire there remains no sign of any discrimination against the women. Thus, Nicholas Danyel and Christina his wife, who were both presented by the jurors of Selkley hundred for reaping wheat for six days during the autumn, received sixteen sheaves. This was reckoned to be worth 1*d* each in excess of that which they should have taken.[35] This particular entry is followed in the actual roll by the presentment of further women, some with their husbands, some individually, who are all stated to have 'done similarly'.[36] Some of the Wiltshire women were paid at an even greater rate for their reaping. One woman, for example, was similarly presented for taking sixteen sheaves, but this time for only three days' work during the autumn. Another was alleged to have received as much as twenty sheaves for six days' work.[37]

Whether they were being rewarded in cash or in kind, many female reapers in the years following the Black Death appear not to have been discriminated against when it came to the wages they were being paid for their work. Once again, however, the possibility of selective presentments needs here to be taken into account. It could be argued that those women who were receiving the same wages as men were simply more liable to presentment, and that the majority of women were in fact being paid less than their male counterparts for similar work. Lacking, as we do, precise details of the proportion of male and female labourers in certain areas this is of course impossible to tell. What is more, the fact that

[33] *Ibid*, pp 50, 52, 53, 54, 60. It is not possible to make a direct comparison between these rates and the statutory rates for reaping. The statute of labourers (1351) merely states that reapers of corn were to be paid 2*d* in the first week of August, 3*d* in the second week, 'and so till the end of August, and less in the country where less was wont to be given, without meat or drink or other courtesie' (*Statutes of the Realm*, I, p 311). The implication from these Yorkshire presentments at least is that it was the provision of board in addition to a money payment which was deemed to go against the statute, and not the value of the cash payment itself.

[34] A Jones, 'Harvest customs and labourers' perquisites in southern England, 1150–1350; the corn harvest', *Ag Hist Rev*, 25 part I, 1977, pp 14–15.

[35] Putnam, *Enforcement*, p 231*.

[36] PRO, KB.9/131 m. 10.

[37] *Ibid.*

the sessional rolls record anyway only those workers who were in receipt of excessive wages means that an unknown proportion of the labour force, both men and women, who may have been taking wages according to the Statute, remain totally hidden from view.

Certainly other peace rolls where available confirm a general parity of wages for the harvest labour of men and women. Where family labour is being used in the harvest fields, the rate of pay for man and wife in specific areas is invariably the same. In Suffolk, William Chetilber and Johanna his wife were presented for having taken 3*d* and board a day each, for the whole of the autumn of 1363.[38] Fourteen years later, John de Anneme and his wife Margaret living in Pudding Norton, Norfolk, were similarly presented together for working during the autumn. On this occasion the two of them had each received 8*d* and food for each day's work.[39] Wages paid to those women seemingly employed at harvest time on an individual basis are also on a par with those paid to men. In peace sessions held at Braintree, Essex, in June 1378, Isabella Rouge, the daughter of a recalcitrant labourer, was presented to the Justices for receiving 4*d* a day and her food (*cibum*) for working in the autumn, for which she was fined 18*d*. This was the same rate as that prevailing for men working during the same period – labourers such as Nicholas Thressher, for example, also receiving 4*d* and food a day in the autumn, in addition to his 2*d* a day plus food which he was being paid during the winter and summer.[40] In some cases, although the labour of a number of people seems to have been drawn upon, a single payment appears to have been made to the senior male member of the workforce. An enquiry in Hampshire in August 1391 states that William Coluerdene of Winchester had been employed by a certain Thomas Doppyng at Swanmore for ten days during autumn time. However, although William alone is presented, the record states that the remuneration for this work amounted to 4*d* a day plus food and drink (*cum sibo et potu*) 'each', implying a number of other labourers paid at the same rate. That these extra labourers consisted of his wife and servant is suggested in the statement that William had thus taken excessively 'for his wife and his servant' (*pro se uxore sua et famulo suo*).[41] Thus, although William alone was receiving the payment, the record implies that his wife and another labourer were also working and that they were being paid at a rate no lower than the one prevailing for William himself.

The evidence of cases brought under the Statutes of Labourers suggests, therefore, that female harvest workers were often being paid at the same rates as men. This is particularly clear from the abundant evidence provided in the sessional rolls of female reapers. Women were not only actively involved in reaping the corn in many parts of the country, but on the evidence of the statute cases, were also being paid at similar rates to men. There was clearly no physical impediment to women using the sickle or reaping hook. Their ability to wield a scythe, however, as Roberts has suggested, may have been a different matter.[42] No positive evidence of female mowers has been discovered from the sessional records, implying a lack of active female involvement in the hay harvest. In some areas, at least, this absence of women from the ranks of mowers would also mean that some of the highest paid harvest work remained inaccessible to female labourers. In the Lindsey district of Lincolnshire during the 1370s women were clearly being employed as reapers, earning 4*d* and lunch a day for working during the autumn. The highest rates amongst the harvest workforce in that particular district, however, sometimes as high as 8*d* and lunch for each day's work, were those paid to the

[38] Putnam, *Proceedings*, p 376.
[39] PRO, KB.9/80 m. 19.
[40] E C Furber (ed), *Essex Sessions of the Peace 1351, 1377–1379*, Essex Archaeological Society, occasional publication 3, 1953, p 158.
[41] Putnam, *Proceedings*, p 213.
[42] Roberts, 'Sickles and scythes', pp 7, 9.

mowers, and they were always men.[43] Thus, even though it can be shown that women were employed as reapers, often at the going rate, their absence from the ranks of hay mowers means that they were still not able to attain some of the highest rates for harvest work.

Apart from mowing, therefore, it would appear that women were taking an active part in bringing in the harvest during the second half of the fourteenth century. The labour cases suggest that, as with most harvest workers, the majority of these women were being employed for short periods at a time; a number of days or weeks at the most. The implication is that agricultural labourers were highly mobile, moving around the countryside from one employer to another performing various jobs on short-term contracts. Earlier by-laws forbidding the use of outside labour during the harvest suggest that this was not a new development.[44] After 1351, however, statutory control of such mobility, and cases arising therefrom, enable one to gauge with more certainty some idea of the nature and extent of such movement. In essence, the Statute of Labourers merely deemed it illegal for servants to leave the county in which they lived in search of work.[45] The Statute of Cambridge of 1388 was more specific, forbidding movement outside the 'hundred, rape or wapentake' unless the person concerned carried a letter patent authorizing such travel. Only if a servant had another employer to go to was he or she free to leave employment at the end of the agreed term.[46] In order to appreciate more fully the continuity of female employment at harvest time it is necessary to consider the extent to which they appear amongst those labourers presented for infringements of the Statute clauses relating to mobility. This is of particular importance in the light of previous work which suggests that a high proportion of those people moving from one place to another in search of work at this time may have been women.[47]

V

An examination of the sessional rolls does indeed reveal, not only that a substantial number of women were moving around the countryside in search of work, but that such mobility was particularly prevalent at harvest time. In some cases, the record gives only a very indirect indication of such mobility, stating, for example, the refusal of women to work within a certain village during the autumn.[48] Normally, however, the evidence is more explicit, the women concerned being presented for withdrawing 'from the district at autumn', or moving from one village to another in search of higher wages.[49] On some occasions these women were moving with their husbands. Thus, in the autumn of 1394, Walter de Gernetoft and Johanna his wife of Sloothby in Lincolnshire, left the village with other labourers and took higher wages elsewhere.[50] Usually, the women appear to have been part of a group of transient harvest labourers. In April 1352, for example, four women and two men were indicted before the Justices of Chester Palatinate for breaking the Statute and departing from the region.[51] Five years later, in Derbyshire, Richard and Alice Baxter together with a further two women and three men were presented for withdrawing from service during the autumn.[52] Similarly, in Lincolnshire, a married couple along with three women and one man, although ordered by the constable of Barton to serve

[43] R Sillem, (ed), *Records of some Sessions of the Peace in Lincolnshire, 1360–1375*, Lincoln Record Society, 30, 1936, pp 25, 61, 91.
[44] Eg, Ault, *Open-field Farming*, pp 86, 90.
[45] *Statutes of the Realm*, I, p 312.
[46] *Ibid* II, p 56.
[47] Eg, Hilton, *The English Peasantry*, pp 106–7.
[48] Eg, Sillem, *Records of some Sessions of the Peace in Lincolnshire*, pp 34, 42.
[49] Eg Putnam, *Enforcement*, p 147*; Sillem, *Records of some Sessions of the Peace in Lincolnshire*, pp 36, 118.
[50] E G Kimball (ed), *Records of some Sessions of the Peace in Lincolnshire, 1381–1396*, Lincoln Record Society, 56, 1961, p 237.
[51] Putnam, *Enforcement*, p 146.*
[52] *Ibid*, p 164.*

the abbot of Bardeney there during the autumn of 1374, refused to work and instead left the village to receive greater salary. The abbot was clearly an undesirable employer as the same autumn witnessed a similar refusal to work for him by a further twelve labourers, four of them women, who also left the village to work elsewhere.[53]

Quite often female labourers alone were presented before the Justices, suggesting that they were moving very much on their own initiative. Surviving rolls for Lincolnshire are particularly full of cases of women, including married women, who were withdrawing from their villages during the autumn to work elsewhere for higher wages.[54] On some occasions the women concerned were absent from their villages for even longer periods. Agnes, the wife of Robert Cartere of Stainton and Johanna, wife of Roger Wrighte of Willingham are both said to have been unwilling to work in their respective villages, not only during the autumn, but during the summer as well, at which times they were returning to the surrounding countryside to work for higher wages.[55] Female reapers appear to have been particularly mobile. Proceedings before the Chester Palatinate Justices in 1359–60 include a number of cases of reapers, men and women, presented for moving from one area to another in search of work.[56] This is a situation which is revealed in greater detail in other country presentments. In Warwickshire, in 1357, for example, Christiana, wife of Roger Ferst, was presented at sessions held in Coventry for moving to another village during the autumn after being ordered to reap in the village in which she lived.[57] In 1362, Justices in Suffolk heard that Agnes de Bradewell of Beccles, reaper of corn, had withdrawn from the village to work elsewhere for twelve days at a daily rate of 4*d* and food.[58] The following year a similar case presented to the Justices in the East Riding of Yorkshire concerned Alice Tretard and Richard and Isabella Chappeman who together refused to reap corn in Wressell during the autumn but instead left the village in order to receive 4*d* and their board each day for working elsewhere.[59] Similarly, in Lincolnshire during the autumn of 1373, Alice, the servant of William de Scampton of North Carlton, was ordered by the constable of that village to reap corn for the abbot of Barlings. She too refused and left the village in order to receive higher wages elsewhere.[60]

It is clear from the cases recorded in these rolls that female harvest workers, particularly reapers, were joining in fully in the post-Black Death movement of labourers around the countryside in search of higher wages. Sometimes the sources reveal the distances that these women were travelling. Table 2 gives details of those women presented for infringements of the Statute clauses relating to mobility, for whom distances travelled can be ascertained.

The evidence cited below, fragmentary though it is, suggests that journeys of a couple of miles or more in search of work appear to have been usual for these female harvest workers. Although such cases imply that these women were leaving their native villages for the duration of the autumn it is more likely that they were going out to nearby villages, where labour was short, on a daily basis and returning home each night. Unfortunately, the labour laws relating to mobility do not distinguish between daily commuting and the more permanent withdrawal of labour on a weekly or seasonal basis. Consequently, it is not possible to identify with any certainty the type of movement with which we are dealing. However, it would certainly seem likely that where greater distances are

[53] Sillem, *Records of some Sessions of the Peace in Lincolnshire*, pp 69, 70.
[54] Eg, *ibid* pp 33, 34, 38, 42, 47–8, 57, 101; Kimball, *Records of some Sessions of the Peace in Lincolnshire*, p 15.
[55] Sillem, *Records of some Sessions of the Peace in Lincolnshire*, p 92.
[56] Putnam, *Enforcement*, pp 148–9.*
[57] *Ibid*, pp 224–5.*
[58] PRO, KB.9/115 m. 17.
[59] Putnam, *Yorkshire Sessions of the Peace*, pp 77.
[60] Sillem, *Records of some Sessions of the Peace in Lincolnshire*, pp 25–6.

TABLE 2

Geographical mobility of women in search of work during the second half of the fourteenth century[61]

Date	*Name(s)*	*Occupation/ type of work*	*County*	*From*	*To*	*Distance (miles)*
1353	Elizabeth, daughter of Henry of Screffington (and five other women)	autumn work	Rutland	North Luffenham	Barrowden	2
1362–3	Margareta, wife of John le Bere of Wantisden	reaping	Suffolk	Wantisden	Ilketshall	20
1363	Matilda Chanardeby	autumn work	Suffolk	Great Livermore	Great Fakenham	3½
1363	Alice, wife of Peter Chauntrell	reaping	Yorks (ER)	Pocklington	Tibthorp	10½
1373	Alice Treu	autumn work	Lincs	Croxby	Swallow	3
1374–5	Alice Milner	—	Lincs	Heckington	Sleaford and Burton	4 2
1377	Matilda Gosse	autumn work	Norfolk	Buxton	Burgh-next-Aylsham	2½

involved one is observing a more permanent mobility in which the women concerned were probably being provided with some form of basic accommodation during the autumn period, together with other members of the harvest workforce.

VI

One must re-emphasize the limitations of the sources upon which this discussion is based. Unlike the wages cited in manorial accounts, for example, those quoted in the peace rolls were not necessarily paid. It is merely alleged that they were. However, the evidence thus provided does allow one to observe comparable rates of pay for men and women for particular types of work in certain areas. Where such evidence is available it is clear that those female harvest workers who were actually being indicted were being paid at very much the same rates as men. Secondly, one should be aware of the possibility that presenting juries were concentrating to an undue extent upon female labour and that consequently the proportion of women amongst the harvest workforce in certain areas is thereby exaggerated. Even if this was true, however, it does not detract from the fact that women were an essential part of the harvest labour force in the period immediately following the Black Death. Their contribution was not restricted to the secondary tasks but also included the reaping of the corn itself, something which is confirmed by contemporary illustrations.[62] In addition, many women were clearly in a position to move around the countryside at will in search of the most remunerative rates for the task at hand. Women's work was far from being restricted to supplementing their husbands' labour in the fields surrounding their native village. There is no doubt that this was an exceptional period in which an acute labour shortage served to enhance the importance and value of female labour. However, even if

[61] The sources for the data listed in Table 2 are Putnam, *Enforcement*, p 198*; PRO, KB.9/115 mm. 2d, 5d; Putnam, *Yorkshire Sessions of the Peace*, p 58; Sillem, *Records of some Sessions of the Peace in Lincolnshire*, pp 34, 206; PRO, KB.9/80 m. 25.

[62] Women alone are shown doing the reaping in the mid-fourteenth-century Luttrell Psalter. Interestingly, this same source depicts the stacking of the bound sheaves being carried out by men: *The Luttrell Psalter*, additional manuscript 42130 in the British Museum, 1932, f 172b; Pl.97; f 173; Pl.98.

it is true that this represented only a very short-term gain for female harvest workers,[63] the evidence discussed above is significant in revealing the lack of obstacles, physical, institutional or otherwise, to female involvement in such work.

On a general level, therefore, cases brought under the Statute of Labourers help to extend further our knowledge of the working role of medieval peasant women. As intimated earlier one should be wary of emphasizing too greatly the significance of the evidence provided in these records of women's wages, as we may be dealing here with a highly distorted sample. However, the real significance of the evidence discussed in this paper lies in its revelation, not simply of wage rates, but of some of the choices and decisions available to female workers during this period. Because many women were able to try their hand at more than one task, reaping and weaving for example, they had an element of choice of what work to do and when to do it. The fact that they were not necessarily restricted to a specific geographical location means that they were also able to choose where to work, and to move if they so desired. Moreover, in revealing the continual failure of employers to enforce long-term service in any one particular place, the evidence suggests the extent to which women were able to strike a balance between work and leisure by choosing to take highly remunerative jobs on short-term contracts.

Of course, the nature of this particular documentation means that we are only informed of the work women were involved in when they were being paid for it. One presumes, however, that women were also carrying out similar jobs as part of their contribution to the household economy, and not just for wages. One needs of course to consider other sources for confirmation of this. Barbara Hanawalt's use of coroners' rolls, for example, has shown the extent to which the children of peasant households were often neglected because both of their parents were out at work.[64] This brief study of wage labour does suggest, at least, the sort of work that the mothers may have been involved in. Just as in the towns, women were able to contribute to the family budget through their involvement in some form of craft activity or retailing, so too in the villages, wives and daughters were clearly in a position to add their earnings to those of the male members of the household through their involvement in agricultural work.

However, this discussion has still wider implications. Many of the women discussed above seem to have been free from any familial restrictions. They appear as independent labourers, moving from place to place in search of work, responsible alone for their own well being. The independent female already being recognized within pre-industrial towns, working by and for herself, was present in rural society also.[65] Indeed, research continues to establish the independence of peasant women in medieval society. The evidence discussed in this short paper, for example, seems to strengthen recent assertions that many female peasants did indeed have their own careers and incomes and that consequently they tended to marry once their financial independence had been secured.[66] Widespread female involvement in rural work in the second half of the fourteenth century may therefore have implications not only for the work experience of the women themselves but, in the long term, for marriage patterns and even subsequent demographic trends.[67]

[63] Roberts, 'Sickles and scythes', p 15.

[64] B A Hanawalt, 'Childrearing among the lower classes of late medieval England', *The Journal of Interdisciplinary History*, VIII, 1977–8, pp 1–22.

[65] For perhaps the most impressive recent indication of independent working women in pre-industrial urban society, see Merry Wiesner Wood, 'Paltry pedlars or essential merchants? Women in the distributive trades in early modern Nuremberg', *The Sixteenth Century Journal*, 12 1981, pp 3–13.

[66] J M Bennett, 'Medieval peasant marriage: an examination of marriage license fines in the 'liber gersumarum'', in J A Raftis (ed), *Pathways to Medieval Peasants*, Toronto, 1981, pp 193–246.

[67] For a summary of some of the possible reasons for continued population decline into the fifteenth century, for example, see J Hatcher, *Plague, Population and the English Economy 1348–1530*, 1977, pp 55–62.

New Sheep for Old–Changes in Sheep Farming in Hampshire, 1792–1879*

By G G S BOWIE

DURING the period 1792–1879 an intensive system of sheep husbandry was developed on the chalk downlands of Wessex. This involved the extinction of most of the traditional sheep breeds which no longer suited the system of husbandry and the creation, through selective breeding, of a completely new sheep, the Hampshire Down. The narrative concentrates on changes in Hampshire because the county had been regarded as a major 'breeding country of sheep' since at least the late seventeenth century.[1] The date 1792 is significant as the probable date of the introduction of the first Southdown flock in Hampshire, and 1879 as a year when the cereal harvest failed, there was a severe outbreak of sheep liver fluke, and the sheep–corn 'mixed farming' system began to break down with the contraction of arable cultivation and in the acreage under roots.[2]

The main reason for the improvements in sheep farming was an increasing demand for meat, and mutton in particular. In 1813 Thomas Davis stated that in Wiltshire 'some years ago' sheep had not been considered eatable till 4–6 years old, but that now three-quarters were killed before 2 years old to meet the supply 'for the increasing demand for mutton'.[3] James Caird emphasized the increasing consumption of meat in England in 1852. 'The consumption of bread in a farmer's family is not half so large an item, in the annual expenditure of his household, as butcher's meat; and milk and vegetables . . . If he looks back for thirty years he will find that this difference has been gradually increasing. With the great mass of consumers, bread still forms the chief article of consumption. But in the manufacturing districts where wages are good, the use of butcher's meat and cheese is enormously on the increase.'[4] In 1878 it was stated that the price of beef had increased 32 per cent between 1853 and 1873, and mutton 43 per cent in the same period.[5] Indeed it has been suggested that this latter 'Golden Age' in English farming was not so much underpinned by a 'favourable trend in prices for wheat' as by a 'rising trend of livestock prices'.[6]

I

The traditional sheep breeds found on the chalk downs were sturdy and active. At the beginning of the nineteenth century the Old Hampshire was described as horned, tall, light and narrow in the carcase, with white face and shanks;[7] the Old Wiltshire was said to be tall, Roman-nosed, with long curly horns;[8] and the Berkshire Nott had a similar conformation but was hornless and generally dark faced.[9] These breeds were

* I am grateful to E J T Collins, M A Havinden, B Afton, M L Ryder for their comments on earlier versions of this article.

[1] Edward Lisle, *Observations in Husbandry*, II, 1757, p 158.

[2] E L Jones, 'Eighteenth Century Changes in Hampshire Chalkland Farming', *Ag Hist Rev*, VIII, 1960, p 16; 'The Development of English Agriculture, 1815–73', *Studies in Economic History*, 1968, p 21.

[3] Thomas Davis, *General View of the Agriculture of Wiltshire*, 1813, p 207.

[4] J Caird, *English Agriculture in 1850–51*, 1852, p 484.

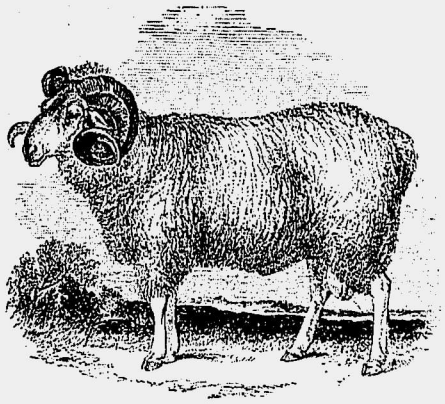
[5] J A Clarke, 'Practical Agriculture', *JRASE*, ser 2, XIV, 1878, p 476; E L Jones, 'The Changing Basis of Agricultural Prosperity, 1853–73', *Ag Hist Rev*, X, 1962, p 105.

[6] Jones, 1968, *loc cit*, p 19.

[7] A & Wm Driver, *General View of the Agriculture of Hampshire*, 1794, p 23.

[8] C Vancouver, *General View of the Agriculture of Hampshire*, 1810, p 366; W C Spooner, 'On Cross Breeding', *JRASE*, XX, 1859, p 299.

[9] Wm Mavor, *General View of the Agriculture of Berkshire*, 1809, p 381; Wm Youatt, *Sheep, Their Breeds, Management and Diseases*, 1837, p 241.





PLATES 1 AND 2
Two of the traditional sheep of the Chalk Downlands, the Old Wiltshire with its long curly horns; and the hornless Berkshire Nott.

Sources: 1 William Youatt, *The Complete Grazier*, 14th ed, 1900, fig 119; 2 William Mavor, *General View . . . Berkshire, 1809*, facing p 381.

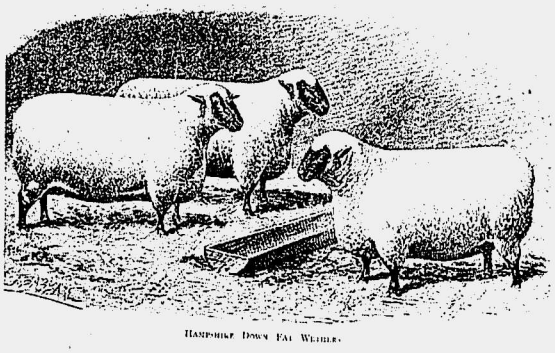


PLATE 3
Hampshire Down Fat Wethers
Source: J Wrightson, *Sheep Breeds & Management*, 1895, facing p 62.

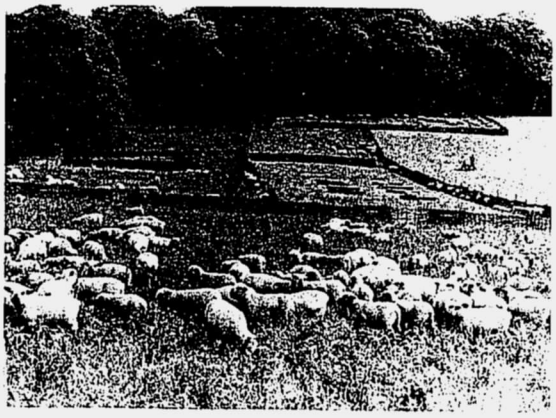


PLATE 4
A Hampshire Down flock feeding on trefolium, 1920s (Museum of English Rural Life)

noted for their 'hardihood of constitution', folded well, possessed 'early maturity of growth' and were excellent as droving animals.[10] The Dorset Horn breed was said to be superior to the Old Wiltshire and Hampshire sheep, being 'shorter in the legs, with a more compact frame and a rounder barrel'.[11] In 1860 they are described as 'horned, both in male and female, the horns of the male are especially twisted – the faces and legs are white, limbs long, shoulders low, and the loins deep and broad . . . The animal is docile, hardy, suited to folding, and capable of living on scanty pastures.'[12] The distinctive features of the breed were the ewes' ability to take the ram at any time of the year, their excellence as mothers, their propensity to have twin lambs and their fitness for droving.[13] Their drawback was said to be the somewhat 'inferior character both of the mutton and wool'.[14] Amongst the first of the 'improved' breeds was the Southdown or Sussex Down, pure flocks of

[10] Clarke, *loc cit*, pp 562–3.
[11] Spooner, *loc cit*, p 307.
[12] J Donaldson, *British Agriculture*, 1860, p 462.
[13] L H Ruegg, 'Farming of Dorsetshire', *JRASE*, XV, 1854, p 431.
[14] Spooner, *loc cit*.

which were established in Hampshire in the first few years of the nineteenth century. From the beginning, owning a flock of Southdowns implied a certain social status, and the breed was 'in favour with gentlemen farming their own estates, for the finer quality of the mutton'.[15] There were other considerations which favoured the Southdown. It was an economical feeder, and one-third more could be stocked on a given acreage than was possible with the 'old breeds'. Some extravagant claims were made in this respect, and in 1792 William Pawlett of Kings Somborne was said to have changed from keeping less than 600 Old Wiltshires to 1200 Southdowns on his 800 acres.[16]

The main objections to the Southdown in the early nineteenth century, its relatively slow growth and small size at maturity, caused the more adventurous farmers and flockmasters to experiment with cross-breeding. They were, 'with varying results according to the different flocks crossed, and the judgement exercised in selection and matching', united with the size, early maturity of growth and hardihood of constitution of the old Hampshire and Wiltshire breeds.[17] Contemporary writers were uncertain about what was happening in this respect in the first thirty years of the nineteenth century. One writer said, 'It will be difficult to trace the crossing which could produce the short-legged, round-barrelled animal that is now found, content with short pasture and easily fattened,' and another contented himself with saying that the old flocks were bred out as a result of crossing 'again and again with Southdowns'.[18] The last flock of the Old Wiltshire breed is said to have disappeared in about 1819, whilst the Old Hampshire and the Berkshire Nott were certainly extinct by 1837.[19] The Dorset Horn breed, because it has characteristics which have been useful to the sheep farmer over the years, remains today. A type of sheep known as the Hampshire West Country or West Down was being bred by 1830. They were something like the later Hampshire Down, but smaller, narrower at the fore-end and lighter in colour.[20] The Hampshire Down name appears to have been first used in print in 1844, but the breed was not recognized by the Royal Agricultural Society until 1861.[21] The breed was 'fixed' from diverse foundation stock, although exactly how is not clear for two related reasons. First, many breeders were secretive about their experiments because of a natural desire to be one ahead of competitors and rivals, and second, because there were so many farmers and breeders in Hampshire and surrounding counties who were trying to improve the breed at this time.[22]

Nevertheless, three particularly influential breeders may be recognized. John Twynam of Manor Farm, near Whitchurch, Hampshire, began crossing his Hampshire flock, already improved by Southdown blood, with Cotswold rams in about 1829. The resulting half-bred rams were compact and 'blocky' with something of the Cotswold fleece. From 1835–36 they were sold 'not only into Hampshire Down flocks generally, but into those of six or eight of our first ram breeders'.[23] William Humfrey of Cold Ash near Newbury in Berkshire was said to be largely responsible for 'fixing' the characteristics of the Hampshire Down. He formed his flock in 1834 by buying the best West Down sheep that he could find. In 1842 he began to hire Southdown rams from Mr Jonas Webb of Babraham, Cambridgeshire,

[15] J Wilkinson, 'The Farming of Hampshire', *JRASE*, XXII; 1861, p 296.
[16] Vancouver, *op cit*, p 367; Jones, 1960, *loc cit*, p 16.
[17] Clarke, *loc cit*, pp 562–3; see also J B Lawes, 'Report of Experiments on the Comparative Fattening Qualities of Different Breeds of Sheep', *JRASE*, XII, 1851, p 415; these sources are at variance with R Trow-Smith, *A History of British Livestock Husbandry, 1700–1900*, 1959, p 276.
[18] Youatt, *op cit*; Spooner, *loc cit*, p 300.
[19] Youatt, *op cit*.
[20] J Wrightson, *Sheep Breeds and Management, Livestock Handbook No. 1*, 1895, pp 54–5.
[21] W H R Curtler, 'Agriculture', *Victoria County History: Hampshire, V*, Wm Page, ed, 1912, p 507.
[22] Spooner, *loc cit*, pp 300–01.
[23] Clarke, *loc cit*, p 564; Trow-Smith, *op cit*, p 279.

the leading Southdown breeder at the time. During the next few years he bred in the most masculine and robust of his own cross-bred rams 'with the largest Hampshire Down ewes I could meet with that suited my fancy'.[24] Writing in 1859 William Humfrey continues, 'It has succeeded hitherto beyond what I could have expected. My object has been to produce a Down sheep of large size with good quality of flesh, and possessing sufficient strength and hardiness to retain its condition while exposed in rough and bad weather to consume the root crops on our cold, dirty hills.'[25] William Humfrey's work was continued by James Rawlence who farmed at Bulbridge near Salisbury in Wiltshire. Rawlence provided the foundation stock for many famous pedigree flocks of Hampshire Downs as well as helping to establish a flock book in 1890.[26] By this period the Hampshire Down was the 'heaviest of all the Down breeds', and was noted for its 'extreme earliness of maturity'.[27] It was short legged and 'blocky' with a good level back, and the shoulder, top and breast were wide. It had a big head with a Roman nose, the snout was brownish black with dark flashing to the eyes, and the ears were dark and long, gradually sloping away from the head.[28] The breed has retained these characteristics to the present day.

II

Sheep flocks were the 'pivot of Chalkland husbandry' in the eighteenth century.[29] The greater part of the chalk downland soils of Hampshire, Wiltshire, Dorset and Berkshire were poor in their natural state and were dependent upon sheep dung for their fertility. Without sheep the downland soils would have become rapidly exhausted and almost useless for arable farming. The usual practice was to keep the sheep almost wholly on hill pastures during the daytime throughout the greater part of the year, and at night to fold them on the fallow land where, during the winter, they were given an allowance of hay. These sheep were regarded as the best manure carriers for light lands, 'which were by this means alone kept in a state of fertility'.[30]

Watermeadows, a feature of these chalk downlands since the early seventeenth century, were closely linked with sheep husbandry.[31] Their construction may be said to represent the first effort actually to grow food for sheep, and as such they were regarded as an 'invaluable adjunct to every down farm'. Sheep were the link between watermeadows and arable farming, and flocks were generally folded on them from about Lady Day, 25 March, some six weeks before grass was available for pasture on ordinary dry meadows.[32] Flocks spent the daytime on the watermeadows, and were folded on the fallowed arable land at night. They were kept on the watermeadows for only 6–7 weeks – if longer the sheep risked becoming infected with liver rot. This was not a long period, but it was a critical time for the stockbreeder, and Arthur Young extols 'this spring eatage, which is often of such vast importance to flockmasters, supplying them with plenty of food at the most pinching season of the year'.[33] The meadows were then repaired and again watered in order to provide a hay crop in June/July. John Wilkinson effectively summed up the advantages of watermeadows when he wrote: 'if it be spring the sheep are on the watermeadows by day and on the arable . . . by night; if it be winter they are served with watermeadow hay night and morning'.[34]

[24] Trow-Smith, *op cit*, p 305; Wrightson, *op cit*, p 54.
[25] Spooner, *loc cit*, p 305.
[26] *The Hampshire Down Flock Book, I*, E P Squarey & J E Rawlence (eds), 1890, pp xii–xv.
[27] Wrightson, *op cit*, p 61.
[28] Wm Youatt, *The Complete Grazier*, Wm Fream, ed, 14th ed, 1900, p 490.
[29] Jones, 1960, *loc cit*, p 5.
[30] Wilkinson, *loc cit*, p 295.
[31] J H Bettey, 'The Development of Water Meadows in Dorset During the Seventeenth Century', *Ag Hist Rev*, XXV, pt 1, 1977, p 43; E Kerridge, 'The Floating of the Wiltshire Water Meadows', *Wiltshire Archaeological & Natural History Magazine*, LV, no 199, 1953, p 111; Wilkinson, *loc cit*, pp 288–9.
[32] Vancouver, *op cit*, pp 269–70.
[33] A Young, *Annals of Agriculture, XXIII*, 1795, p 266.
[34] Wilkinson, *loc cit*, p 290.

The introduction and gradual general acceptance of new fodder crops was also important. One of these improvements provided better, more succulent, grass in the spring than hitherto, and the option of grazing or cropping into late summer. This was the idea of 'temporary grasses' or short-term leys which were introduced into Hampshire in the late seventeenth century, and for these the seeds of cultivated grasses such as sheep's fescue, 'ray grass', and various clovers, including hop trefoil and 'saintfoin', were sown and nurtured like an ordinary cereal crop.[35] Such short-term leys were either grazed by livestock or cut for hay, and after between one and about ten years the land was returned to the general rotation. A clover ley appreciably improved the fertility of the soil by increasing the amount of nitrogen in it and so benefiting the succeeding crop. Within this group the perennial sainfoin was particularly able to thrive on chalk downland soils, and by the mid-nineteenth century its cultivation was regarded as a 'leading feature in chalk farming'. Indeed 'out of the reach of watermeadows, no flockmaster could dispense with it'. It was said to be more reliable for hay and summer feed than other clovers, and give a better yield. It was generally sown under barley, was good for up to four years, and was then followed by a wheat crop. A seventh or eighth part of the arable land was laid down to sainfoin, and it was brought 'round again' in 8–15 years.[36]

A wide range of fodder crops came into general use during this time. The 'common white' turnip was tried as a field crop in Hampshire in the early eighteenth century, and was seen to be very useful for feed during the late autumn and early winter.[37] It was not sufficiently 'winter hardy' or frost resistant, however, to provide feed for long after Christmas, and during February and March feeding had to be based on an expensive hay diet.[38] This hindered an increased stocking rate until Swedish turnips were tried in about 1800. Swedes mature during late winter, have a greater food value than ordinary turnips, and have been linked with the spread of Southdown flocks in Hampshire at that time. Mangolds were grown from about 1810 in Hampshire, and were suited to loams and heavy clay soils. They had to be matured in clamps before being suitable for sheep feed, but formed a welcome addition to the ewes' diet in early spring. The problem of the shortage of sheep food between November and April was gradually being solved. This was reflected in the decline during the eighteen-thirties and forties in the practice of overwintering downland sheep on good lowland pasture, a practice akin to transhumance. Such overwintering involved the 'great flockmasters in the down districts' in sending their ewe lambs 'for six months keep, from the beginning of October to the beginning of April' to areas such as the Hampshire/Dorset Avon vale. Thereafter the 'increase . . . on the downs of winter feed, by means of increased turnip cultivation', encouraged the flockmasters to keep their sheep at home.[39]

There was an improvement in crop rotations as the old summer and winter fallows were gradually replaced. In 1810 Charles Vancouver described the 'old husbandry' of winter and summer fallow for wheat, then barley or oats, followed with grass for two years, as 'annually giving way' to a short summer fallow for wheat followed by 'turnips, barley and seeds, with wheat again upon the clover lay'.[40] This development was closely related to the enclosure of the open downland, and between 1800 and 1820 over 50,000 acres of land was enclosed

[35] C Lane, 'The Development of Pastures and Meadows during the 16th and 17th Centuries', *Ag Hist Rev*, XXVIII, 1980, pp 26–7.

[36] Lisle, *op cit*, I, 1757, pp 208–9; Thomas Hale, *A Complete Body of Husbandry*, 1756, p 445; Lane, *loc cit*, pp 27–8; Wilkinson, *loc cit*, p 294.

[37] Lisle, op cit, II, p 35.

[38] J M Wilson, *Farmers' Dictionary*, II, nd, p 539.

[39] Jones, 1960, *loc cit*, pp 16–17; Wilkinson, *loc cit*, p 286.

[40] Vancouver, *op cit*, p 139.

in Hampshire through Acts of Parliament.[41] Enclosure encouraged improvement by allowing selective breeding which was difficult with common flocks on common fields. 'The sturdy horned wether' of the old breeds 'was thoroughly competent to take care of himself when the system of feeding in common prevailed, but when each farmer could keep his flock separate, an animal of superior quality was preferred'.[42]

James Caird describes the chief characteristics of this type of farming as 'the breeding of sheep and the folding of them to enrich the ground for the production of corn . . . The points chiefly considered are the production of wheat and barley, and to promote these the breeding and management of sheep, and the other operations of the farm, are subordinate.'[43] Another aspect of this was that landlords often specified in leases and tenancy agreements that a sheep flock be kept on the farm to ensure that the tenant maintained the fertility of the arable land. Leases could be quite detailed and specific. In 1841 Sir William Heathcote required that the incoming tenant on 923 acres near Twyford, Winchester 'shall and will . . . at all times during the said term . . . keep a good full and sufficient stock of sheep to consist of 940 exclusive of lambs in the Summer months . . . from the first day of May to the first day of November . . . and 790 during the Winter months exclusive of lambs'.[44]

III

Between about 1830 and 1860 there was a change of emphasis in sheep husbandry in Hampshire which may be regarded as an expression of High Farming and High Feeding. Sheep were still looked upon primarily as 'manure carriers' necessary to fertilize arable lands for cereal crops, but also became increasingly important as producers of lamb and mutton. 'The mixed agriculture of the early eighteen-seventies was quite different in aim from that of thirty or forty years earlier. Then, the livestock side had been considered supportive of the arable enterprises . . . Now . . . receipts from their stock were already much valued by many arable men.'[45] One of the triggers for the increased price was the severe outbreak of liver fluke during the winter of 1830–1, and the subsequent shortage of mutton. Farmers in the Whitchurch area of Hampshire were said to have made 'great improvements' during the period 1830–5 because of the encouragement given to breeding sheep, and were stocking their land 'harder on account of the great prices sheep bring'.[46] Some years later John Twynam expressed his 'conviction that our improved system of arable farming requires, and from its altered character will support, an improved breed of sheep, a breed which in a shorter space of time on a given quantity of food will produce more pounds of mutton'.[47]

Two other related factors led to increased returns on the chalk downlands. The first was the introduction of oilcake feed during this period, where the justification for feeding it to stock was held to be 'in the greatly increased value of cake-based dung over ordinary dung . . . If cake paid for itself in manure rather than the greater weight of meat raised, it followed that the returns were seen in the succeeding cereal crops.'[48] The second factor was the introduction of 'artificial' fertilizers. John Wilkinson remarked in 1861 that farmers in the Hampshire Avon Vale country used super-

[41] Vancouver, *op cit*, p 374; W E Tate, *A Domesday of English Enclosure Acts and Awards*, M E Turner (ed), Reading 1978, pp 125–8.
[42] Spooner, *loc cit*, p 300.
[43] Caird, *op cit*, p 59.
[44] Hampshire Record Office (HRO) 18M54, Cof. 11, Box R, Heathcote Estate Papers.
[45] Jones, 1968, *loc cit*, p 22.
[46] British Sessional Papers, House of Commons (BSP), Agricultural Distress, 1837, V, f 36; G E Fussell, 'Four Centuries of Farming Systems in Hampshire, 1500–1900', *Proceedings of the Hampshire Field Club & Archaeological Society*, XVIII, pt 3, 1952, p 283.
[47] J Twynam, 'Mr Twynam's new breed of sheep – a challenge', *The Farmer's Magazine*, ser 2, no 1, vol 1, January 1841.
[48] F L M Thompson, 'The Second Agricultural Revolution, 1850–80', *Econ Hist Rev*, 2nd ser, XXI, 1, 1968, p 68.

phosphates, bones and ashes which were 'drilled at the time of sowing' the root crops, which provided higher yields than hitherto.[49] The effect of this was to provide a better quality of root crops for sheep feed, and oilcake feed, indirectly administered, greatly enhanced the quantity of the succeeding cereal crop.

James Rawlence observed in 1869 that 'the chief object of his system of farming was to obtain as large a quantity and as continuous a succession of sheep food as possible'.[50] Frequent changes of diet were considered necessary to encourage the sheep to eat continuously and put on weight, and some very intensive feeding systems were developed during this period. William Fream describes the 'enviable day' of a Hampshire Down wether lamb in July which involved a number of changes of food beginning with night and early morning which were spent on a fold of vetches. Breakfast consisted of a trough full of sliced mangolds and a concoction of linseed cake mixed with split beans, peas and malt. 'The shepherd's voice is next heard calling the wether to cabbage, and perchance as the day declines he rests amidst the grateful and cooling shade of rape leaves towering above his recumbent form, while ever and anon he nibbles playfully at the tenderest and youngest shoots.' The lambs might be run over a clover aftermath before being returned to their fold of vetches for the night. Fream ends with the comment that 'under such treatment it is no matter for surprise that the young creatures should grow rapidly'.[51]

Most feeding regimes were nothing like as intensive as this, but the Hampshire Down wether certainly improved as a rapid converter of sheep food into meat. In 1810 the weight of one of its forebears, the Old Wiltshire, was said to average 22 lb a quarter at 30 months old.[52] In 1853 the Hampshire Down wether averaged 15 lb at only 13–15 months, in 1869 16 lb at 9 months, and in 1878 20–25 lb a quarter at 12 months.[53] These fattening rates compared very well with other sheep breeds. The average for sheep in Britain in 1878 was 18 lb a quarter at 21 months, and for the Southdown wether 18–20 lb at 13–15 months.[54] Some other breeds, such as the improved Leicester and the Cotswold, fattened more rapidly, and on less keep, but the quality of their mutton was inferior to that of the Hampshire Down.[55]

Wool was undoubtedly a useful and sometimes valuable crop during this period, and breeders made determined efforts over the years to improve the quality and weight of fleece. However the downward trend of prices was hardly likely to encourage radical change. Shortwool prices declined 1820–32, rose until 1836 and then gradually fell away again to 1845.[56] The quality may have been improved, but the weight of the Old Hampshire and the Hampshire Down wether fleece remained fairly constant between 1810 and 1878 at 4–5 lb.[57]

IV

The advances in the technique of arable farming, and the continuing efforts to improve the Hampshire Down breed, allowed the sheep farmer a range of options in rearing and marketing his breeding flock, all of which had a quick turnover and offered the possibility of high profit margins. He could concentrate on the production of lamb, killing at about fifteen weeks, on the rearing of fat wether lambs, selling them in the summer or autumn of the year in which

[49] Wilkinson, *loc cit*, p 284.
[50] James Rawlence, 'Farm Reports: 7–Bulbridge and Ugford nr. Salisbury', *JRASE*, ser 2, V, 1869, p 505.
[51] Youatt, 1900, *op cit*, pp 510–12.
[52] Vancouver, *op cit*, p 366.
[53] S Druce, 'On the comparative profit realised with different breeds of sheep', *JRASE*, XIV, 1853, p 212; Rawlence, *loc cit*, p 506; Clarke, *loc cit*, p 564.
[54] Clarke, *loc cit*, pp 478 & 562.
[55] J Wilson, 'On the Various Breeds of Sheep in Great Britain', *JRASE*, XVI, 1856, p 225; Clarke, *loc cit*, p 560.
[56] B R Mitchell & P Deane, *Abstract of British Historical Statistics*, 1962, p 495.
[57] Vancouver, *op cit*; Wilkinson, *loc cit*, p 297; Clarke, *loc cit*, p 564.

they were born, or on the breeding of pedigree rams.

Lamb rearing has an interesting history in southern Hampshire during the first half of the nineteenth century when the area had the reputation of rearing the 'earliest lambs for the London market'.[58] This trade was based on Dorset Horn ewes which were tupped in their native pastures in Dorset and Somerset in May or June. The in-lamb ewes were driven on the hoof to the autumn sheep fairs in Wiltshire and Hampshire, the largest and best known being at Weyhill near Andover on 10 October each year. To give an idea of the scale of this activity, 100,000 sheep were said to be penned per year at Appleshaw Fair, three-quarters of which were Dorset Horn ewes 'heavy in lamb'.[59] Hampshire farmers were amongst the buyers of these ewes, which were driven south and lambed down in November. The system depended on the relatively mild climate of southern Hampshire, and the 'normal custom' was to fatten the ewe and lamb together and sell them both the following spring. The fat lambs were generally sold for the Easter lamb trade, and the ewes sheared and sold by the beginning of May.[60] In the early nineteenth century the profit, including the money for the fleece, was said to be 'double the first cost of the ewe'.[61] Sometimes the ewes were put to a Southdown ram on their native pasture 'which improved the quality and fatting predisposition of the lamb'.[62] James Caird suggested that the trade was in decline in 1852. This was probably linked with the fact that the Hampshire Down, bred on the arable downlands rather than the mixed clay, loam and sand soils on which the Dorset Horns were fattened, was being lambed about Christmas and provided a better quality Easter lamb with fewer weeks of feeding.[63]

[58] Caird, *op cit*, p 90.
[59] *Cyclopedia of Agriculture, Practical and Scientific, II*, J C Morton, ed, p 836; Wilkinson, *loc cit*.
[60] Wilkinson, *loc cit*, pp 273–7.
[61] Vancouver, *op cit*, p 370.
[62] Spooner, *loc cit*, p 307.
[63] Wilson, *loc cit*, p 235; Squarey, *op cit*, p xiv.

Another option was the rearing of fat wethers. 'The management of Hampshire Down lambs offers one of the very best examples of judicious feeding that can be found. The primary object being to get the lambs to the market in autumn, no expense is spared to provide frequent changes of food.'[64] A Hampshire custom spread in the eighteen-thirties whereby breeders in surrounding areas also began to sell their wether lambs in the late summer or early autumn instead of overwintering them, which meant significant savings in pasture and feed.[65] Normally these wethers were bought and 'finished' by farmers from outside the chalk districts. For example, in Essex in the eighteen-forties, Hampshire Down wether lambs were purchased in the autumn and kept 'either in the yards or pastures during the winter, and in the ensueing summer either folded upon the fallows or fattened upon the clover; in the former case they were sold in the ensueing autumn or winter-fed upon turnips, oil-cake or beans'.[66]

Ram breeding could also be lucrative, and because first crosses often inherited the best qualities of their parents, both Hampshire Downs and Southdowns were favoured for crossing with other breeds throughout the country. The resulting cross-bred lambs generally matured rapidly and provided good quality mutton, and the main advantage of the Hampshire was that it had a greater hardiness of constitution than the Southdown ram.[67] A feature of breeding Hampshire Down rams was that they were heavy and robust enough for service in the summer of the year in which they were born. These 7–8 month old prodigies were lambed early in January and subjected to an extraordinarily intensive feeding regime in order to reach over 20 lb a quarter in August.[68] Again, Hampshire Down

[64] Clarke, *loc cit*, p 521.
[65] Squarey, *op cit*.
[66] R Baker, 'On the Farming of Essex', *JRASE*, V, 1845, p 15.
[67] Wilson, *loc cit*; Squarey, *op cit*.
[68] Wilkinson, *loc cit*, p 297; Rawlence, *loc cit*, pp 505–6.

breeders enjoyed a rapid turnover, whilst the ram lambs of other breeds had to be overwintered before they were fit for service.[69] John Wrightson summed up this achievement when he wrote 'I have often declared a Hampshire Down ram lamb, as he appears in the sale-ring . . . late in July or in early August, to be one of the wonders of the world.'[70]

V

Considerable thought and effort was put into flock management, and a 'sheep to the acre all round' was considered to be essential for good farming. Few other animals were kept except milch cows, the workhorses and a few pigs, and the farmer therefore depended 'chiefly on his sheep stock for manure and profit'.[71] The size of flocks varied, but three to four hundred ewes was considered to be sufficient for one shepherd. The aim of many farmers was to avoid overwintering any stock except the ewe flock, and so reserve most of the feed for the breeding ewes and early lambs. Hence of about 400 lambs born January–February 'some of the best wethers (say 100), the farmer picks out for the lamb-fairs at Stockbridge or Overton in July; the remainder he sells from time to time according to his supply of food or requirements for money, at different fairs up to Weyhill, 10 October, or Andover on 17 November, reserving always 140 chilver [ewe] lambs to replace the one-third of his ewes, which, being full-mouthed, he drafts out of his breeding flock year by year'.[72]

The various parts of the flock were generally kept separate throughout the year as each had different feeding requirements. The flock was even further divided after the lambs were weaned in early May. The ram and wether lambs received a daily ration of corn and cake, and were the first to be fed off any newly formed fold. Meanwhile the ewe lambs, breeding ewes and draft ewes only required a maintenance diet, and consequently received no corn or cake allowance and followed the ram and wether lambs by clearing up what remained in the fold. The full-mouthed draft ewes were sold at the July sales or the autumn fairs. Good breeding ewes were sometimes kept on after this age, but generally they were worn out and beginning to lose their teeth through the hard work involved in gnawing the root crops in the fold. The ewe lambs were not regarded as mature enough to breed until they were 18 months old.[73]

There were various methods by which the fodder crops could be supplied to sheep. Some farmers were said to turn the sheep promiscuously into a large fenced-off section of field, which were then allowed to 'eat the roots at pleasure'. Another practice was to enclose the sheep in as much space as they could clear in one day, 'advancing progressively through the field until it was cleared'.[74] The latter was better farming as the sheep distributed their droppings and urine more evenly over the area being manured, and meant that 'staking and setting the field hurdles' were part of the shepherd's daily business. The light wooden hurdles, usually made of hazel in Hampshire, had to be set and fixed in such a way as to keep the whole row steady 'against the action of strong winds and the abrasion of sheep'.[75]

Flocks were afflicted by a range of diseases, but the worst was sheep rot, caused by the liver fluke parasite. The cause of the disease, involving a freshwater snail at one stage and the complex life cycle of the fluke parasite, was not finally understood until the end of the period, in about 1880.[76] Nevertheless farmers and agricultural commentators had a fairly clear idea about

[69] Youatt, 1900, *op cit*, pp 489–90.
[70] Wrightson, *op cit*, p 142.
[71] Caird, *op cit*, p 93.
[72] Wilkinson, *loc cit*, pp 296–7.
[73] Rawlence, *loc cit*; Wrightson, *op cit*, pp 142–5.
[74] Youatt, *op cit*, p 521.
[75] Wilson, *op cit*, I, p 741.
[76] A P Thomas, 'Report of Experiments on the Development of the Liver Fluke', *JRASE*, ser 2, XVII, 1881, pp 1–29.

the conditions most likely to produce rot in sheep. In the early nineteenth century it was said to be caused by 'the low grounds, subject to autumnal floods'.[77] In 1862 the point was made that 'it has long been ascertained that during a certain period of the year sheep are sure to take the rot if placed on irrigated meadows, this being from about June to October'.[78] Some farmers and flockmasters actually took advantage of this, as sheep 'when first touched with the rot thrive mightily in fattening for ten weeks . . . before falling away to nothing but skin and bone'.[79] Success therefore depended on killing the sheep in time, and apparently the mutton was quite edible. During the nineteenth century there were two major outbreaks of sheep rot which decimated flocks in Hampshire and the surrounding area, one during the winter of 1830–31 and the other in 1879–80, as well as innumerable minor outbreaks.[80]

The intensive system of sheep husbandry that has been described made many and varied demands not only on the downland farmer but also on the farm shepherd. He was normally responsible for moving and setting the fold each day, getting the cake and corn rations for the feed troughs, providing veterinary care and keeping the sheep's feet sound and their bodies free from dirt. He was also responsible for lambing in January and February, weaning the lambs in early May, ensuring that the fat wethers were in the peak of condition when the farmer wanted to sell them, and for organizing tupping in August and September.[81] Between 1792 and 1879 the farm shepherd became a highly skilled worker who led a life so very different from his forebears who, not so many years before, had moved their flocks slowly over the sparse heath and open downs.

[77] Vancouver, *op cit*, p 374.
[78] J B Simonds, 'The Rot in Sheep: Its Nature', *JRASE*, XXIII, 1862, p 83.
[79] Lisle, *op cit*, II, p 208.
[80] Thomas, *loc cit*, p 141.
[81] Youatt, *op cit*, pp 512–14.

The Extent and Nature of Parliamentary Enclosure

By JOHN CHAPMAN

IN SPITE of the recent advances in our knowledge of the Parliamentary enclosure movement, notably through the work of Dr Michael Turner,[1] the details of precisely what land was affected remain somewhat obscure. Turner's edition of Tate's 'Domesday' offers figures for most of the English enclosures[2] but, quite apart from those where no figure is given, many are based on the act and award estimates, which can be wildly inaccurate. This has been demonstrated in detail elsewhere for Northern England,[3] but is by no means restricted to the remote uplands, as might be assumed. Substantial errors occur in Sussex,[4] and an examination of some Leicestershire material produced surprising errors even there. Comparison of the sums of the allotments with the award estimates given in Turner for sixteen awards revealed that although eleven fell within 2 per cent the remaining four were all over 14 per cent out, rising to 23.5 per cent at Congerstone. Strangely, in the two worst cases the act estimates were far closer to the true figure. A similar exercise on eleven Kesteven awards found eight without any award figure; one, Eagle, completely accurate; and two over 20 per cent out. The situation with regard to Wales is still worse, for the only list covering the whole country, that of Bowen,[5] is incomplete, in addition to suffering from the same problems as the 'Domesday'.

With regard to the breakdown into types of land affected, the situation is far worse. The act estimates are quite useless from this point of view, since only a tiny handful give this type of detail, and the summaries given in the awards are only marginally better. Though there are now a number of major studies available of some individual counties, or substantial parts of them, these are neither numerous enough, nor necessarily calculated on a sufficiently comparable basis, to give any overall picture of the movement as a whole.[6]

I

This paper seeks to remedy some of these problems by presenting the results of a national survey of the Parliamentary enclosure awards.[7] The data were collected from a 10 per cent sample of all English and Welsh awards, full details of every individual allotment being abstracted for each selected award.[8] In view of the known and suspected variations in enclosure awards in different parts of the country,[9] a simple unrestricted random sample was statistically unacceptable, since there was a substantial danger of drawing, for example, a disproportionate

[1] M Turner, *English Parliamentary Enclosure*, Folkestone, 1980, and *Enclosures in Britain 1750–1830*, 1984.

[2] W E Tate, *A Domesday of English Enclosure Acts and Awards*, M E Turner, editor, Reading, 1978.

[3] J Chapman and T M Harris, 'The Accuracy of Enclosure Estimates: Some Evidence from Northern England', *Journal of Historical Geography*, 8, 1982, pp 261–264.

[4] J Chapman, 'Some Problems in the Interpretation of Enclosure Awards', *Ag Hist Rev*, 26, 1978, pp 111–112.

[5] I Bowen, *The Great Enclosures of Common Lands in Wales*, Chiswick, 1914.

[6] For example, the recent work of E and R C Russell, *Landscape Changes in South Humberside: The Enclosures of Thirty-Seven Parishes*, Hull, 1982, and *Old and New Landscapes in the Horncastle Area*, Lincoln, 1985.

[7] Subsequent to the unions of the respective Parliaments with the English one, there appear to have been one enclosure for Scotland and ten for Ireland. These have been omitted.

[8] I am grateful to the ESRC, then the SSRC, for their financial assistance for this work, and to Dr T M Harris, then my research assistant, for his invaluable help on the project.

[9] Turner, *English Parliamentary Enclosure*, pp 32–62.

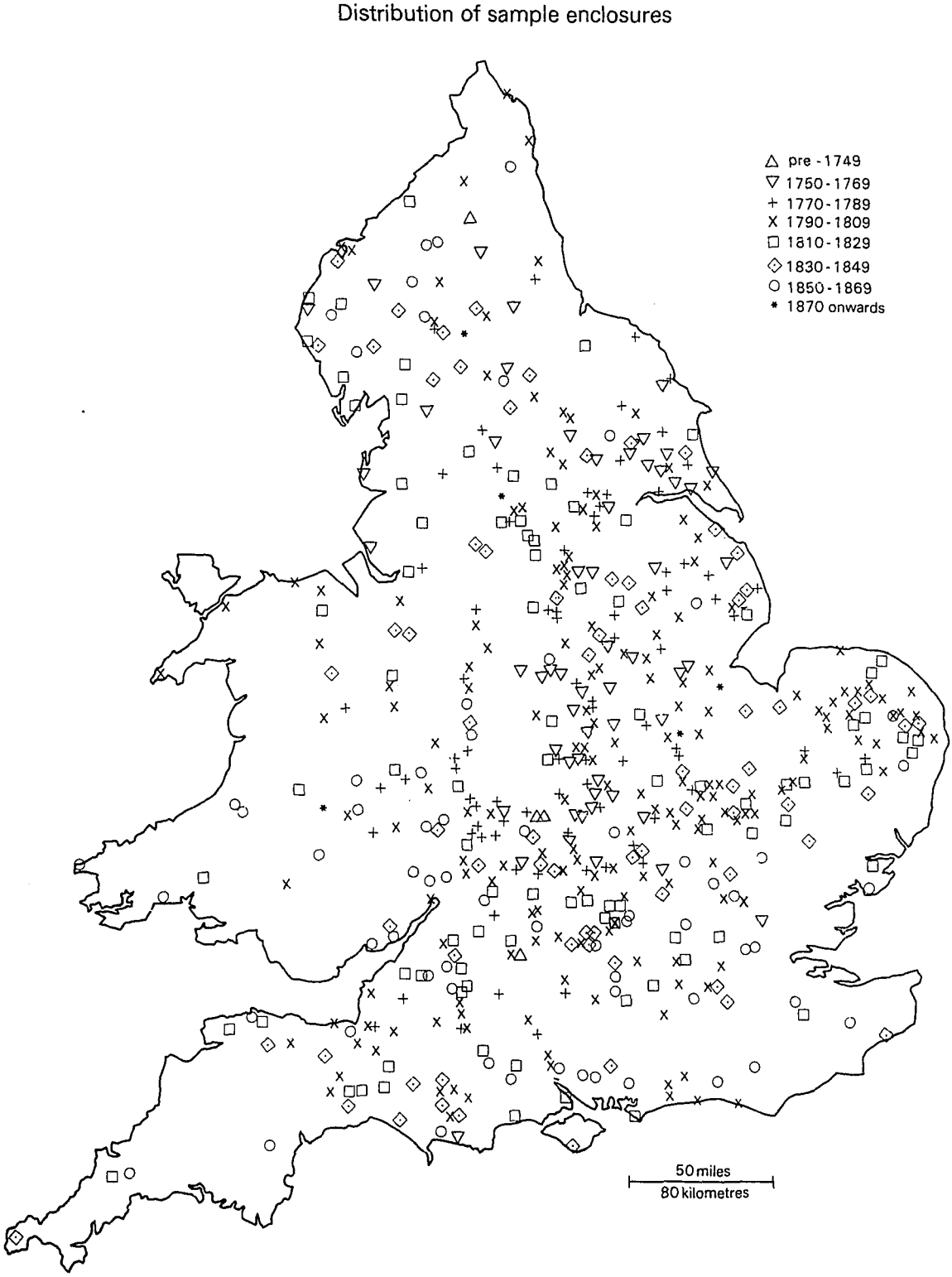

Distribution of sample enclosures
△ pre -1749
▽ 1750-1769
+ 1770-1789
X 1790-1809
□ 1810-1829
◇ 1830-1849
○ 1850-1869
* 1870 onwards
50 miles
80 kilometres

FIGURE I

number of large northern enclosures, or of Midland open field ones. The sample was therefore drawn separately from each county, or, in the Welsh case, group of adjacent counties, thus producing a regional stratification, and ensuring that each region was proportionately correctly represented in the whole. (See Fig 1.)

The definition of an 'enclosure' which was used was that adopted originally by Tate,[10] multiple awards under a single act being regarded as part of the same enclosure. A number of awards examined proved not to fall within the normal definition of enclosure, for example because they consisted entirely of exchanges of already enclosed land[11] or because they were simply regulatory,[12] and these were replaced by reserves, as were any awards which were lost or too defective to be usable.

The adjusted totals of enclosures proved to be 5570, 5341 in England and 229 in Wales. Owing to the effects of rounding in individual counties, the sample consisted of 559 awards, 535 from England and 24 from Wales. As this involved a slight over-representation of Wales, and subsequent analysis demonstrated a number of significant differences between English and Welsh enclosures, most calculations were performed separately for the two countries before figures were amalgamated to produce grand totals. This had the added advantage of permitting comparisons with existing published figures, which normally refer to one or other country individually.

In total, the sample awards affected 892,089.25 acres of land, including old enclosures exchanged or reallocated. 768,449.95 acres lay in England and 123,639.30 in Wales. Taken at face value, these would imply totals of approximately 1.18 million acres for Wales and 7.67 million for England, or a grand total of just over 8.85 million acres for the whole Parliamentary enclosure movement. In practice these figures must be regarded as representing an upper limit, for doubts must be expressed about the validity of some of the enclosures making up the grand total. If the proportion of spurious enclosures discovered in the sample were to be matched in the overall total for England, some seventy awards would be rejected, giving a projected total of 7.57 million acres. The Welsh figures would be unaffected since almost all Welsh awards were examined and the total contains only those meeting acceptable criteria. The same is also true of several English counties, so that although a figure of 8.75 million acres might be taken as the lower limit of the range it seems likely that the true figure would lie closer to the upper limit of 8.85 million.

It must be noted that these figures refer to the total land affected by enclosure, and as such do not equate exactly with the total amount of open or common land abolished by the process. It was a frequent practice at enclosure for landowners to exchange small patches of old enclosed land for the new allotments in order to eliminate awkward detached pieces of their estates, and provision for this was normally included in the acts. Some acts, however, went further, and specified that all detached fields of less than a particular size, usually three acres, should be thrown into the melting pot,[13] while others similarly incorporated any land within the same fence which was owned by more than one owner.[14] Though the acreage involved was usually small, it was by no means negligible, and cases involving larger areas are not rare.[15] In consequence, the total land allotted by the awards exceeds the amount theoretically available for enclosure. Dis-

[10] See, for example, W E Tate, 'A Handlist of Sussex Enclosure Acts and Awards', East and West Sussex County Councils, *Record Publication*, 1, 1950.

[11] e.g. Evington, Leicestershire; and Carisbrooke and Godshill, Isle of Wight.

[12] e.g. Luton, Bedfordshire.

[13] e.g. Llangybi, Monmouthshire. Gwent County Record Office, Enc 1.

[14] e.g. Bosham and Funtington, Sussex. West Sussex County Record Office, Rm 3 DC7; Broadwater, Sussex, PRO CP43/911.

[15] e.g. Romsey Extra, Hampshire. Hampshire County Record Office, Enc 89; Bury, Sussex. West Sussex County Record Office, QDD/6/W18.

regarding certain doubtful areas, which will be considered later, 33,146 acres, or 3.94 per cent of the sample, consisted of such already-enclosed land, and for England separately the figure is proportionately higher, at 4.19 per cent. The totals actually enclosed were thus 736,267 acres for England and 122,676 for Wales, giving implied totals of 7,253,955 and 117,030 respectively. The grand total enclosed would appear to have been over 8.42 million acres.

For England alone the amount of open or common land abolished by enclosure would therefore appear to fall in a range from 7.25 million acres, assuming a maximum number of erroneous enclosures, to 7.35 million, assuming none. Such a figure considerably exceeds those given by many previous authorities, and used in subsequent analyses of the movement. The total of six million acres which has been widely used, for example by Chambers and Mingay and by McCloskey, represents an understatement by almost 18 per cent, and Tate's 1967 figure of 6.5 million is almost 11 per cent under.[16] Even the most detailed recent calculation, that of M E Turner at 6.8 million, is some half a million acres less than the total suggested by this study.[17] For Wales, these figures would lend support to the one million acres which Turner implies may be too high.[18] The implications of this stretch beyond the question of Parliamentary enclosure itself, for if Parliamentary enclosure dealt with more land than previously suggested, the impact of non-Parliamentary enclosure must have been proportionately less. Wordie's recent calculations of seventeenth-century enclosure, for example, appear to make inadequate allowance for that during the eighteenth and nineteenth centuries, and hence overstate the earlier changes, quite apart from any other objections which might be raised.[19]

II

With regard to the type of land involved, the overwhelming majority of awards specify clearly whether the land concerned in any particular allotment was open field, meadow, or common waste. While this division may beg certain questions about the real nature of some open field land immediately prior to enclosure, and the degree to which common waste had been encroached and cultivated, the legal situation, at least, is usually clear. Where the text failed to identify the land type clearly, it was often possible to resolve most of the ambiguities or repair the omissions with the aid of the maps. There remained, however, a hard core of problem cases, where the land fell into more than one category, but the proportions could not be accurately determined. Initially these amounted to 8.66 per cent of the sample and were strongly clustered regionally in East Anglia and the Northamptonshire-Oxfordshire-Buckinghamshire area. Use of estate maps, tithe documents and other records allowed the missing figure to be reduced to 5.8 per cent, a figure which is acceptable, though the regional concentration is a little disturbing. The problem in East Anglia, however, appears to arise largely from the well-known peculiarities of field-systems and tenure patterns in that area.[20] Significantly, many Norfolk acts avoid the conventional references normally made elsewhere to 'open and commonable fields', referring instead to 'intermixed lands', and the use of the various ancillary sources mentioned

[16] J D Chambers and G E Mingay, *The Agricultural Revolution 1750–1880*, 1966, p 77, suggest 'over' six million. See also D N McCloskey, 'The Economics of Enclosure: a Market Analysis', in W N Parker and E L Jones, *European Peasants and Their Markets*, Princeton, 1975, p 128; W E Tate, *The English Village Community and the Enclosure Movements*, 1967, p 87.

[17] Turner, *Enclosures in Britain*, p 21.

[18] *Ibid*, p 27.

[19] See J R Wordie, 'The Chronology of English Enclosure, 1500–1914', *Econ Hist Rev*, 2nd series, XXXVI, 1983, pp 483–505; J Chapman, 'The Chronology of English Enclosure, a comment' and reply by J R Wordie in *Econ Hist Rev*, 2nd series, XXXVII, 1984, pp 557–562.

[20] See, for example, M Postgate, 'Field Systems of East Anglia', in A R H Baker and R A Butlin, *Studies of Field Systems in the British Isles*, Cambridge, 1973.

earlier confirms the view that much of the unspecified land in this county was already enclosed. The movement here was thus more akin to the modern French *remembrement* or the Dutch *ruilverkaveling*, rather than the conventional English enclosures. Such an interpretation would be consistent with Yelling's comments on Norfolk enclosures[21] and, if accepted, would reduce the amount of unspecified land to some 2.5 to 3 per cent.

Excluding the unspecified areas, the remainder was classified into four broad categories: field land; meadow; common waste and pasture; and old enclosed land. The fourth of these has already been referred to, though it may be noted that its relative importance is marginally understated, not only because of the East Anglian problem, but also because old enclosures voluntarily exchanged were sometimes simply 'lost' in larger allotments. Furthermore, many acts specified that recent encroachments on the common, normally under twenty-one years old, should be regarded as part of that common, and the awards then often treated them as such without any special mention. It is unlikely, however, that this could have added more than 0.1 per cent at most to the total.

The question of common meadow is one which has received short shrift in the literature of the enclosure movement. In all the discussion over the relative importance of arable and pasture in the process, the fact that some enclosures consisted entirely or largely of meadow has tended to be ignored. In fact, only three of the sampled awards consisted solely of common meadow, but 228, or over 40 per cent contained at least some and sixty-one, or almost 11 per cent of the sample, were more than 10 per cent meadow. Overall less than 3 per cent of the sample total fell into this category, but locally its significance was greater. It contributed more than 10 per cent to the total for the Holland division of Lincolnshire and almost 10 per cent for neighbouring Huntingdon. It was thus more important than field land in the former, and than pasture in the latter.

The temporal pattern of meadow enclosure follows closely that of open field, which will be discussed shortly. Briefly, it shows a general downward trend, falling from just over 5 per cent of the pre-1750 total to just over 1 per cent in the second half of the nineteenth century. Though the smallness of the figures makes analysis by decade somewhat dubious, a similar trend is detectable at this level, even to the extent of a small percentage rise after the passing of the 1836 General Enclosure Act. Such a close parallel with open field enclosure seems readily explicable, first because meadow was usually, though by no means exclusively, enclosed as part of the general abolition of some kind of open field system, and secondly because legally the process bore a close resemblance to field enclosure: the exact proportions of land held by each individual before enclosure were normally quite clearly established. It is perhaps for these reasons that both at the time and subsequently, meadow has simply been lumped in with field land, though in agricultural terms its role complimented the pasture and waste as a support for stock.

In spite of this, it is obvious that the Parliamentary enclosure movement as a whole was primarily concerned with open arable and open pasture. For England and Wales 33.47 per cent of the identifiable sample was field land and 59.67 per cent pasture, or approaching the one to two proportions postulated by Philpott.[22] For England alone, as would be expected, the arable percentage was higher, at 39.13 per cent. Thus, even with due allowance for the problems already specified and for an element of sampling error, it seems clear that

[21] J A Yelling, *Common Field and Enclosure in England, 1450–1850*, 1977, pp 12–13.

[22] G Philpott, 'Enclosure and Population Growth in Eighteenth Century England', *Explorations in Economic History*, 12, 1975, p 36.

Parliamentary enclosure was primarily concerned with common pasture and waste. For any individual county, the maximum arable percentage was 79.25, for Huntingdonshire, though this was only marginally higher than a group of other Midland counties.[23] At the opposite end of the scale, the sample revealed no arable in nine English counties.

III

A clear geographical pattern emerges from these figures. From a core area of adjacent Midland counties the percentage of arable involved in the enclosure movement falls in a series of steep steps outwards to the extremities of the country. Conversely, waste and pasture rapidly comes to dominate the movement outside this Midland core with, on a county basis, sharp juxtapositions between counties showing a high arable dominance and those highly dominated by pasture. Such a pattern accords in general terms with that outlined by Slater and by Gonner in the early years of this century, and refined more recently by Turner.[24] However, the rate of fall in the proportion of arable is much steeper than implied in these earlier writings, and in particular the arable-dominated core emerges as a smaller, more restricted zone. Even counties such as Oxfordshire and Nottinghamshire fall outside this zone, though arable is marginally the biggest individual component in the former.

Such a pattern carries implications of some form of spatial diffusion process, and thus lends support to the suggestion made but not developed in detail by Turner.[25] However, the nature of the county limits is such that any process of this kind can be obscured, or indeed overemphasized, by the peculiarities of their boundaries. The data were therefore reorganized on the basis of distance from the supposed centre. Inspection of the figures indicated a location somewhere in north-central Northamptonshire as the geographical centre of the high arable area, and an arbitrary choice was made of an exact point in this area from which measurements were made. The distance of each of the sample enclosures from this selected point was then calculated, and the awards were regrouped according to the distance band within which they fell, the boundaries of the bands being at 50-kilometre intervals. The totals for each land type were then recalculated for each of these 50-kilometre bands. The pattern which emerged from this strongly reinforced the original conclusions (see Fig 2). The percentage of arable involved in enclosures clearly falls sharply with each succeeding band, apart from a minor hiccup at 300–350 kilometres, where the number of awards involved had fallen greatly.[26] It may be noted that only in the two innermost bands does the amount of arable exceed that of pasture and that in all the five outermost pasture accounts for more than 75 per cent of the total. There is thus a very sharp spatial division of the enclosure movement between a relatively small central area of the country where arable enclosure was the norm and a much larger outer area where attention focused essentially upon common waste.

There is obviously also a temporal, as well as a spatial, aspect to this pattern. The mean date of enclosure for these distance bands rises steadily and consistently from 1792 in the innermost to 1825 between 300 and 350 kilometres; only the outermost band, with a mere two enclosures, breaks this pattern. This may be illustrated more clearly by reorganizing the data into 20 year periods, for the arable percentage then falls steadily from 63.63 before 1750 to nil after 1870 (see Fig 3). In this case the one exception to the

[23] Buckinghamshire, Leicester, Northampton, Rutland and Warwick all exceeded 75 per cent.

[24] G Slater, *The English Peasantry and the Enclosure of Common Fields*, 1907; E C K Gonner, *Common Land and Inclosure*, 1912; Turner, *English Parliamentary Enclosure*.

[25] *Ibid*, pp 99–100 and 126.

[26] The outer ring at 350–400 km has been omitted, since it contains only two awards.

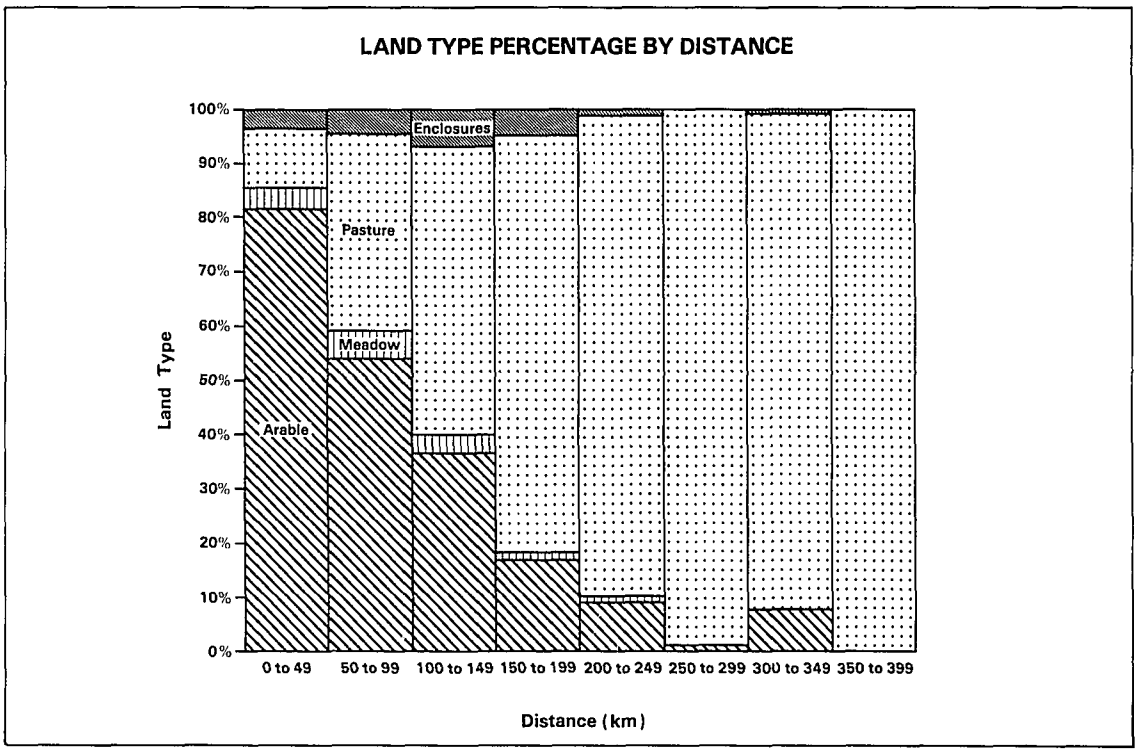


FIGURE 2

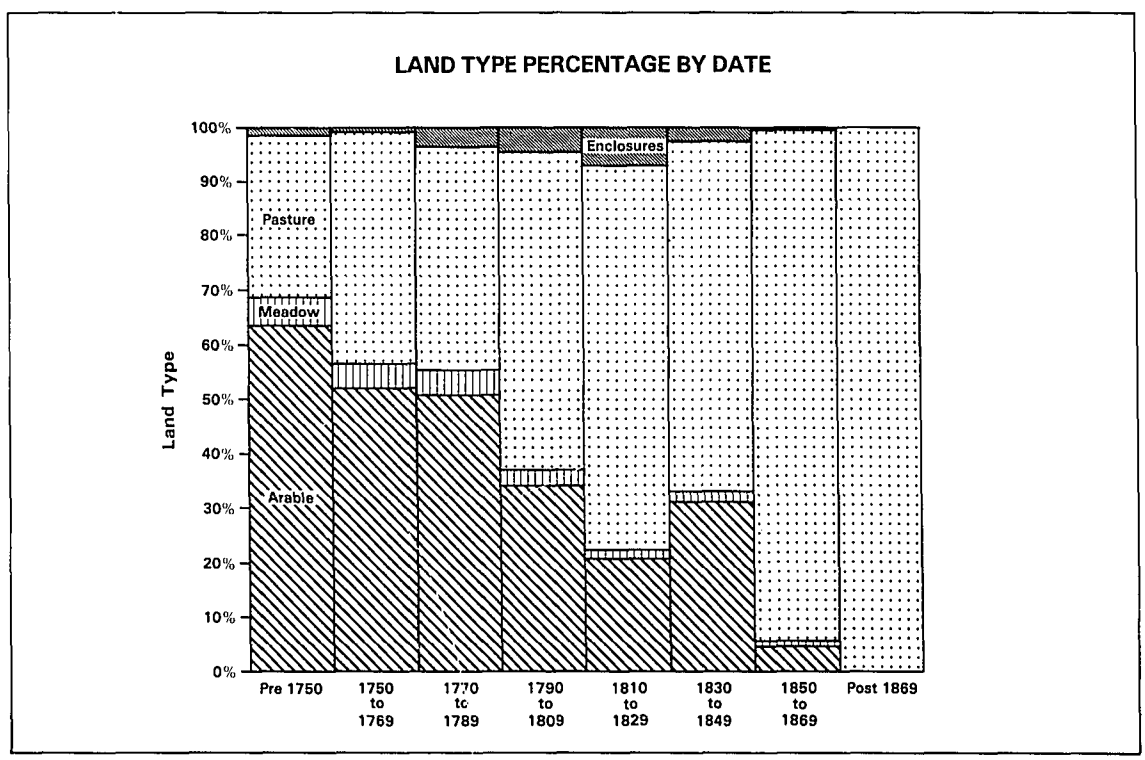


FIGURE 3

trend, as might be expected, is in the period 1830 to 1850, when the effects of the 1836 General Act produced a slight rise. Although the decline in the relative importance of arable in the process with time has been well documented in the literature,[27] these calculations emphasize a number of points. First, it seems clear that the decline was a steady and continuing one, rather than reflecting a sudden response to any external event, such as the Napoleonic Wars.[28] Secondly, even the 1836 General Act, specifically designed to boost field enclosure and indeed theoretically restricted solely to it, failed to produce any dramatic change, for the proportion, though rising briefly, never attained as much as one third of the total. Thirdly, even at the time of maximum emphasis on arable, not far short of 40 per cent of the land involved fell into other categories.

IV

It might be argued that these conclusions are simply a reflection of the obvious fact that the amount of open arable available to enclose declined sharply with distance from the Midland core. If the use of Parliamentary enclosure exhibited a simple diffusion process, spreading outwards with time from the centre, then clearly the percentage of arable dealt with in each time period would fall for that reason alone. In reality the situation appears more complex.

One of the more surprising features revealed by this investigation was the degree to which individual enclosures were strongly polarized into those which were largely concerned with open arable and those which were largely of open waste. Most contained either more than 60 per cent arable, or less than 25 per cent, with only fourteen awards, or 2.5 per cent of the sample, falling between these figures.[29] It thus becomes possible to regard most enclosures as falling into either an 'essentially arable' or an 'essentially pasture' group.

The implications of this finding may perhaps be best illustrated by means of boxplots showing the distribution by date of the predominantly pasture and predominantly arable enclosures for each 50 kilometre band (see Fig 4). This allows a direct visual comparison, not only between arable and pasture within the same region, but also between the patterns for either group in different regions. In accordance with convention, the limits of the boxes have been drawn at the 'hinges', or quartile values, and the 'whiskers' representing the outlying values have been omitted in order to focus attention on the main time period involved for each group.[30]

From this it can be seen that in all cases the median enclosure year for the 'arable' group is much earlier than for the 'pasture', with only one case where the gap is less than ten years. In other words, at any given distance from the central core, a predominantly arable enclosure was likely to be undertaken at a substantially earlier date than a predominantly common waste one. Furthermore, arable enclosures tend to cluster much more closely about the median. Thus, within any given area, field enclosure took place within a relatively limited timespan, whereas enclosure of common and waste was a far more drawn-out process.

Comparison of the plots for the same category through time reveals further significant features. For the arable group, though there is a marked time-lag between

[27] *Ibid*, pp 63–93.

[28] This point was developed more fully in a paper entitled 'Structural Change in Eighteenth-Century English Agriculture', presented to the *Permanent European Conference for the Study of the Rural Landscape*, Rastede, 1985, and to be published in the *Proceedings* (forthcoming, 1987).

[29] These figures may be marginally affected by those awards containing substantial amounts of unspecified land.

[30] The limits of the boxes are represented by the 'hinges', or quartiles. See P F Velleman and D C Hoaglin, *Applications, Basics, and Computing of Exploratory Data Analysis*, Boston, Mass, 1981, pp 73–74 and 79–81. The values outside the boxes have been omitted for clarity. The notches included on the diagram give an indication of the confidence levels of the conclusions, but only for comparisons between any two pairs. See R McGill, J W Tukey and W G Larsen, 'Variations of Box Plots', *The American Statistician*, 32, 1978, pp 12–16.

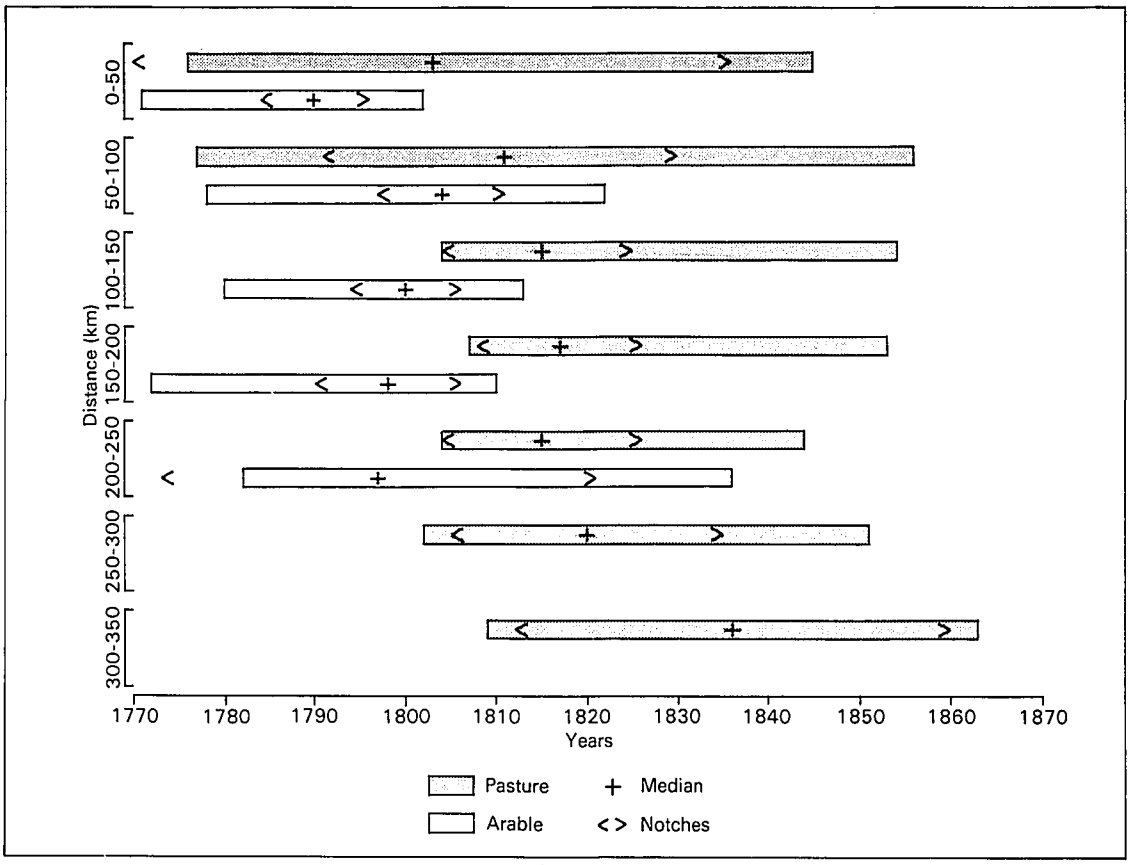


FIGURE 4

the centre and the next ring, subsequent rings show an almost identical median date. In contrast, the waste group shows a general increase in date with distance. Thus it would seem that the use of Parliamentary means to enclose open field, though it began earlier in the midland core, spread rapidly to all parts of the country, with distance from that core being of no significance; for waste enclosures, on the other hand, the further the area to be enclosed lay from the core, the longer the delay in enclosing was likely to be.

Taken together, these two conclusions inevitably mean that the time lag between arable and waste enclosures widened with distance. As can be seen from the boxplots, the main part of the arable movement within the central core can be dated to 1771, with waste following only five years later; similarly the median dates are only thirteen years apart. In the 200 to 250 kilometre band, however, the beginning of the main arable movement may be dated at 1782, twenty-two years before the waste, and the time-lag of the median values is eighteen years.

V

In summary, a number of suggestions about the nature of the Parliamentary enclosure process emerge from this investigation. First, it would seem that the total amount of land affected by the movement, and even the amount of open or common land actually enclosed, was somewhat larger than most of the published figures would suggest. Secondly, it is clear that the movement, taken as a whole, was principally concerned with land reclamation, and the reorganization of open arable into compact, individually held plots was a secondary feature. The enclosures of the Midland open field

C

belt, often regarded as the 'typical' enclosures, are unrepresentative. Thirdly, arable dominated the early part of the movement, though to nothing like the extent to which waste dominated the later; from the start of the Napoleonic Wars onwards the waste was the principal target of the enclosers. Fourthly, the patterns of enclosure for mainly arable and mainly waste enclosures show significant regional differences, with the former tending to occur throughout the country at roughly the same date, apart from a small core area, whereas the latter lagged markedly with distance.

These conclusions must emphasize the need for caution in seeking general explanations for the Parliamentary enclosure movement. Many of the recent macro-level analyses have tended to focus almost exclusively upon the utility or otherwise of the open fields, and the consequent advantages and disadvantages of their abolition.[31] If, however, common and waste dominated the movement, as this paper has attempted to demonstrate, the whole question of the functioning of the open fields, though important, becomes of lesser significance. Much of the explanation for the general form of the Parliamentary enclosure movement must be sought in factors encouraging an extension of the cultivated acreage.

However, the different patterns of field and waste enclosure might suggest that the movement was not one but two, and that two different explanatory frameworks are required. The clustering of most field enclosures within a relatively short timespan would appear to answer one of the principal criticisms raised by Dahlman against the work of Cohen and Weizman and of McCloskey, namely that if the open field system reached some sudden crisis point landowners would have reacted rapidly.[32] Most appear to have done so, especially since it can be shown that some apparent laggards had in fact been attempting to obtain enclosures for long periods before the final passing of the acts, but had been delayed by local complications.[33] It may therefore be postulated that open-field agriculture was generally under stress by the 1760s,[34] and that once the concept of using an act of Parliament had become firmly established in the minds of landowners, it was adopted nationwide. As for the initiation of the use of acts of Parliament in the Midland core, the evidence from this work would support Turner's contention that the system was under particular stress in this area, and that here shortage of pasture was the trigger.[35] Certainly the vast majority of the early sample in the Midlands was characterized by very small areas of common waste, and any desire to exploit a market for stock products on a large scale would have made enclosure imperative.

For waste enclosure, any explanation must incorporate an attempt to account for some element of spatial diffusion through time. The mechanisms responsible for this are not clear, but since some waste was normally included in field enclosures the idea must have been widely familiar in the Midlands at an early date. Its transfer to mainly waste enclosures would thus have been a minor and obvious step. Elsewhere, where open fields were relatively more sparsely distributed, the procedures for Parliamentary enclosure were often unfamiliar at an early date, and outside landowners had to instruct their local agents in how to go about the business.[36] In these areas, no general body of local expertise was built up by the occasional early field enclosures; nor were the wastes – large moorlands, for

[31] e.g. D N McCloskey, 'The Enclosure of Open Fields', *Journal of Economic History*, 32, 1972, pp 15–35.

[32] C J Dahlman, *The Open Field System and Beyond*, Cambridge, 1980, pp 58–64; J S Cohen and M L Weitzman, 'Enclosures and depopulation: a Marxian analysis', in Parker and Jones, *European Peasants and Their Markets*, pp 161–178; McCloskey, 'The Economics of Enclosure'.

[33] See, for example, J Chapman, 'The Parliamentary Enclosures of West Sussex', *Southern History*, 2, 1980, pp 85–87.

[34] The relative merits of the explanations for this offered by Cohen and Weizman and by McCloskey are beyond the scope of this paper.

[35] Turner, *English Parliamentary Enclosure*, pp 145–151.

[36] e.g. West Tanfield. North Yorkshire County Record Office, associated papers to enclosure.

example – necessarily very similar in physical character to the commons absorbed as part of the open field system. It may be postulated that actual demonstrations of the effectiveness of enclosure of commons *in the locality* were necessary to stimulate a major enclosure movement, and that this idea spread but slowly.

Such suggestions do not negate the idea that the overall form of the process was stimulated by, for example, interest rates,[37] nor do they deny the obvious truth that the decision as to when to enclose, or indeed whether to do so, was ultimately made for each locality by individuals, on the basis of their own judgements and perceptions. However, neither of these explanations on its own would appear to offer a satisfactory explanation of the patterns presented here and these speculations might help to fill the gap.

[37] McCloskey, 'The Economics of Enclosure'.

Notes on Contributors

MR SIMON A C PENN read medieval and modern history at the University of Birmingham before receiving an SSRC research studentship enabling him to work towards a PhD thesis on fourteenth-century Bristol. The thesis is now in the final stages of completion. Until recently he was a research fellow at the University of Birmingham working on a study of wage-earners and wage-earning in late fourteenth-century England. This forms part of the ESRC research programme on the history of prices and incomes in pre-industrial England.

DR GAVIN BOWIE works for the Hampshire County Museum Service, and is currently curator of the new Eastleigh Museum, which opened last year. He has been researching into and lecturing about aspects of modern agricultural history since 1978, mainly in his spare time. He has just completed an assessment of the role and function of watermeadows in the rural economy of Wessex, 1640–1850, and is currently investigating the world of enriching and exciting manures in English agriculture in the first half of the nineteenth century.

DR JOHN CHAPMAN is a Senior Lecturer in Geography at Portsmouth Polytechnic. He has published papers on the development of the Portsmouth area and has undertaken research on agricultural change in Britain in the nineteenth century. For some years his principal research has been concerned with a nation-wide survey of Parliamentary enclosure, and has produced a number of articles on this topic.

DR E J T COLLINS is Director of the Institute of Agricultural History and Museum of English Rural Life, and member of the Department of Agricultural Economics and Management in the University of Reading. Having published extensively on modern British agricultural history, notably on labour and technology, he is currently editing volume VII of the *Cambridge Agrarian History of England and Wales*, 1850–1914, and completing his research project on the history of agricultural edge tools, and a historical and contemporary survey of five agricultural estates in southern and midland England for the Ernest Cook Trust.

(continued on page 46)

The Rationality of 'Surplus' Agricultural Labour: Mechanization in English Agriculture in the Nineteenth Century

By E J T COLLINS

PRIOR to the third quarter of the nineteenth century the impact of machinery in agriculture was slight compared with that in manufacturing industry. Some operations such as barn work and hay and corn harvesting had been largely mechanized by 1880 but, up to the Second World War, many were still performed by hand labour and large numbers of workers were still required for seasonal tasks such as hop- and fruit-picking and vegetable cultivations.

There are, of course, many technical and economic reasons why the pace of mechanization in agriculture was so relatively slow. Because of the small average size of farm workloads and the discontinuous nature of crop production many farmers could not realize the economies of scale needed to justify the substitution of fixed capital for labour. Unsuitable terrains were another obstruction to the use of machines in field work, as also, up to at any rate the 1930s, were the difficulties of applying inanimate power to direct haulage in place of the horse.

The failure to adopt machines of proven ability, especially where they appear to have had a clear cost advantage over older methods, is often attributed to rural conservatism, alias inertia. But there was another, arguably much more important brake on technical progress, namely, a belief that the social costs of mechanization, expressed in terms of wage rates, levels of employment and labour relations, might outweigh the economic benefits. Indeed, the 'Machinery Question', one of the principal theoretical concerns of Classical Economics in the early nineteenth century,[1] in many parts of southern Britain remained an issue long after the Swing Riots, up to and beyond the Great War. The question as to choice of technique was throughout the period central not only to agricultural efficiency but to social welfare and the functioning of the cottage economy.

The root of the problem lay in the facts: one, that agriculture being a residual employer, the size of the population it had to support, directly or indirectly, either on the payroll or the parish, was governed not by the size of the labour requirement but by the numbers seeking work. And two, that in agriculture, in contrast to manufacturing, machines did not contribute directly to higher output and were essentially saving of labour. In the period up to 1850 urban and industrial employment did not expand fast enough to take off all the rural population increase.[2] Throughout, labour productivity and wage rates in agriculture were lower than in industry due to the relative immobility of agricultural labour and the failure of the agricultural resource structure to adjust to economic progress.[3] Unquestionably, the problem of maintaining levels

I am grateful to Professor W N Parker for his most helpful comments on the original paper prepared for the Conference, 'Nineteenth century agrarian structures and performance', at the University of Montreal, June 1984.

[1] For an informed discussion on the 'machinery question' see, Maxine Berg, *The Machinery Question and the Making of Political Economy 1815–1848*, Cambridge, 1980.

[2] See, J Saville, *Rural Depopulation in England and Wales, 1851–1951*, 1957; W A Armstrong, 'The influence of demographic factors on the position of the agricultural labourer in England and Wales, c1750–1914', *Ag Hist Rev* 29, 1981.

[3] For a theoretical discussion, see, E M Ojala, *Agriculture and Economic Progress*, Oxford, 1952; J R Bellerby, *Agriculture and Industry: Relative Income*, 1956.

of employment would have been most acute in the middle stages of industrialization when, for the first time, machines became widely available and the agricultural population was still expanding or but very slowly declining. In practice, it must often have been difficult to maximize profits, wages and employment, that is fully to utilize machines while at the same time find alternative well-paid jobs for all the workers thereby displaced.

The question is: how important was technological unemployment as a 'push' factor in rural migration? Marx regarded agricultural mechanization as a propellant in the creation of the industrial work force. Lenin thought the intensification of production might increase the demand for labour in the short run, but he too believed it would decline once agriculture became more fully organized on capitalist lines and mechanization became general. Hasbach, too, was convinced that in the Victorian period the increase in the use of machinery and in the size of farms had thrown large numbers of labourers out of work in southern districts.[4]

This paper will pose the alternative question of how, which is to say, by what combination of techniques – manual and mechanical – and with what implications for wages and labour productivity, farmers were able to reconcile profits and employment in the labour-flush, low-wage districts of southern Britain in the nineteenth century.

I

Farmers knew only too well the connection between the scale of techniques and the size of the labour requirement and, up to the mid-1860s, when individual parishes ceased to be responsible for maintaining their own poor, between the level of employment and the size of the poor rate. The curious blend of economic self-interest and moral principle which characterized farmers' attitudes towards labour and employment throughout the nineteenth century was rooted in Marshall's dictum: 'the poor's rate of a village falls principally on the farmer, and if he does not employ the poor he must support them in idleness'.[5] The Swing Riots dampened the enthusiasm for machines, and the memory of them served as a reminder that indiscriminate mechanization was a threat both to public order and the social good. Thus, as a rule, farmers preferred to give work rather than charity, sometimes at the cost of deliberately passing over opportunities to save labour. As Nassau Senior explained: 'A threshing machine would not cost the wages of one man for a year and would save the wages of two. But the two men are there and must be employed or relieved, so they are set to work with flails.'[6] Prior to 1850 responsible opinion was hard set against the use of machines when they offended against the code of the countryside and the unwritten law that the onus of finding work should be spread as fairly as possible among all employers in the parish. Under the Old Poor Law the 'roundsman' and 'labour rate' systems were standard devices for work-spreading while, in some parts of England, husbandry covenants specifically prescribed labour-using methods so as to preserve employment.

On the other hand, and a major weakness of a system based so largely on voluntary restraint, sense of obligation often stopped at the parish boundary. 'The farmers are kind enough to their own folk, yet naturally care but little for the riff-raff of other parishes . . .' confessed C S Read in 1858.[7] Prior to the Union Chargeability Act, the burden of

[4] H Fukodome, 'Karl Marx on agricultural mechanization in England in the mid-nineteenth century', *Keizaigau KenKyu*, Kyushu University, Japan, 48, 1983; W Hasbach, *A History of the English Agricultural Labourer*, 1908, pp 256, 264, 275.

[5] W Marshall, *Rural Economy of Norfolk*, 2nd edn, 1795, p 44.

[6] Nassau Senior, *Industrial Efficiency and Social Economy*, ed S Levy, 1928, II, p 242.

[7] J C Morton, *Hand Book of Farm Labour*, 1868 edn, p 105.

the poor rate was unfairly distributed between 'open' and 'close' parishes, and between the towns and outlying villages. The social cost of mechanization was small where large numbers of 'foreigners' were employed, as it was the source not the host parish that was responsible for relieving any resultant unemployment. It was said of farmers on the thinly populated Berkshire Downs that they drew their additional workers from the workhouses of the valley towns and, after six weeks, cast them out. C S Read reckoned the greatest advantage of reaping machines was that he was now able to dispense with the services of 'strangers'.[8]

Employers felt the greatest obligation towards their regular workers. They would be expected to 'find a corner somewhere' for the old and infirm who sometimes received full wages, and sometimes were treated as 'three-quarter' or 'half' men, but were certainly overpaid compared with the work done by the other labourers. By the same token, farmers who purchased machines did not always use them to full advantage. There are innumerable examples of where, initially, threshing and harvesting machines were employed only for wheat leaving the barley and oats to be cut or beaten out by hand, and of farmers who allowed their 'harvest companies' to 'borrow' the reaper free of charge in order to safeguard their earnings. Some indeed, kept a machine simply *in terrorem*, to secure themselves against the difficulty of 'unreasonable' demands as to wages at times of pressure. Where hand-tool methods were kept up it was often with a view to providing employment, for which reason the flail was held in reserve on even the largest farms, just as up to the 1880s in Flora Thompson's part of Oxfordshire a small field of wheat used always to be set aside for the few women who still cared to go reaping though the Irish had often to be called in to finish the job with scythes.[9]

As the labour market tightened so, from the 1850s, attitudes towards machines began to soften. Progressive agricultural opinion came round to the view that capital accumulation was beneficial in that savings re-invested constituted an increased demand for labour. After 1850 machines could be justified on the grounds that the labour supply was diminishing so that the labour saved need not be thrown out of work but could be redeployed elsewhere on the farm. This neo-classical view did not long survive the onset of the Great Depression, but whilst anxious to reduce their labour bills, farmers continued to adjust their method-mix so as to create employment in winter and at the same time allow their labourers to earn extra money in summer to compensate for low earnings at other seasons. Thus in the late nineteenth century the owner of a steam plough might still harvest his corn with a scythe and bagging hook and occasionally bring out the flail. In the 1840s it was remarked that a Manchester manufacturer would not be easily induced to employ men to impel his machinery – but 'a dogged farmer is capable of harbouring any stupidity. He offers a premium for a steam plough . . . and at the same time rejects threshing by machinery.' On the other hand, whereas in the towns the social cost could be widely spread over a large number of ratepayers, in an agricultural parish the men thrown out of employ had to be maintained by the very persons who had purchased threshing machines. As late as 1914 custom still required that farmers should pause before substituting machines, 'when men are available and wages not too high'. Conversely, the structure of the labour market in northern England and south Scotland, based on farm servants engaged on

[8] A Redford, *Labour Migration in England 1800–1850*, 2nd edn, Manchester, 1967, p 90; C S Read, 'Improvements in Norfolk farming', *JRAS*, XIX, 1858, p 293.

[9] Flora Thompson, *Larkrise to Candleford*, 1954 edn, pp 256–7; and for further discussion on farmers' attitudes towards machinery: E J T Collins, 'Harvest technology and labour supply, 1790–1870', *Econ Hist Rev*, 2nd ser, XXII, 1969; 'The diffusion of the threshing machine in Britain, 1790–1880', *Tools and Tillage*, II, 1972.

annual or six-monthly contracts, ruled out the possibility of work sharing which existed when labour was employed on a daily basis. As was pointed out, men who could not find work simply had to leave the parish, taking their bondager with them, thereby reducing the risk of labour surplus.[10]

II

On his part the labourer looked with an evil eye on what he regarded as infringements of the rights of labour. In return for low wages the farmer was expected to provide as much work as possible, and all innovations which threatened to reduce earnings and employment were viewed with suspicion. Opposition to labour-saving was levelled not just at machinery but also hand tools. In the early nineteenth century, for instance, new designs of flail were objected to on the grounds that, though 'a famous go' by the piece, their greater speed would 'spoil many a day's earnings'. Likewise, the substitution of the faster-working scythe and heavy 'bagging' hook for the sickle and reap-hook met with much opposition in the harvest field. Machine wrecking by no means ceased with the Swing Riots. Indeed, village folklore is far richer in tales of broken harvesting machines than of broken threshers. All manner of devices – files, iron bars and wooden spikes in the field and sand in the bearings – barred their progress. In one district of Hertfordshire, as late as the 1890s, it was 'no uncommon practice' for the labourers to burn reapers and binders in the middle of the night and, at Beenham in Berkshire, one farmer had to have his reaping machines guarded by the police from a gang of about twenty workmen who had formerly taken the harvest by hand. Long after they had come into general use threshing machines were still despised in the low-wage districts to the extent of their having to be watched over with dog and gun, while the sheaves might still sometimes be packed with flint stones so as to smash the drum. But sabotage was often subtle; the labourers, it was said, pretending not to understand mechanical things and showing little willingness to overcome difficulties until, that is, convinced of their propriety.[11]

Resistance to machines was most pronounced in those operations which were deemed most critically important to the functioning of the cottage economy. Though arduous in the extreme and 'downright slavery', in the early–mid-nineteenth century threshing by hand was a main source of income in the period November to March, so that the flail or 'poverty stick', came to symbolize the right to work and independence of the parish. The hay, corn and potato harvests, on the other hand, stood for full-employment and, for the labourer, assisted by his wife and children, the opportunity to maximize family earnings. 'The cottagers', wrote Walter Rose, 'regarded the work as their right. Cutting the corn was the big event of the year, a task anticipated and arranged for. It was their opportunity of earning a few extra pounds; and not to have this extra money meant something like chaos to their carefully planned lives.'[12] Richard Jefferies wrote of Wiltshire corn villages where, at harvest-time, 'scarcely anyone is left; every man, woman and child is out in the field'. In the West Country the hay harvest and in the Home Counties the potato and pea harvests were the 'labourers' gold mine'. In Kent and Surrey the hop-picking season was eagerly looked forward to as being the 'turning point in their means for the year; it interposes like a screen between them and the work-houses;

[10] *Farmers Magazine*, August 1841, p 102; *Report and Minutes of Evidence of House of Lords Select Committee on the Poor Laws*, 1830–31, pp 254–5; E P White (ed), *The Standard Encyclopedia of Modern Agriculture* (nd), VII, pp 225–7; Alistair Orr, 'Farm servants and farm labour in the Forth Valley and South East Lowlands', in T A Devine (ed), *Farm Servants and Labour in Lowland Scotland 1770–1914*, Edinburgh, 1984, pp 29–54.

[11] Collins, 1969, *loc cit*; *Countryman*, vol II (1928), p 48; *ex inform* Prof E L Jones, La Trobe University; Thomas Williamson, *Agricultural Mechanism*, 1810, p 296.

[12] Walter Rose, *Good Neighbours*, Cambridge, 1942, p 27.

and if it fails them, they have, too frequently no alternative but to throw themselves on the Union for the winter . . .'[13] Many households were sustained by migratory work, which was an important source of income in large 'open' villages where, even in summer, there was often a lack of employment early or late in the season or between the hay and corn harvests. A feature of the period 1850–1870 was the speed with which the threshing machine displaced the flail in precisely those areas where, a few years previous, following the Swing Riots, a virtual moratorium had been declared on the use of them in order to keep the peace. Labourers' attitudes are here very instructive. Hand-threshing was arguably the hardest and most punitive of all farm tasks and few would have submitted to its toil but for that it gave employment at times of the year when other work may not have been available. When, after 1850, the labour market tightened, and with greater prospect of alternative forms of winter work, the labourer gladly relinquished it. By the 60s it was commonly remarked how men would not go into a barn as formerly, preferring it seems almost any job, in the worst of weathers, to the drudgery of the threshing floor. For much the same reason, that it made for easier work, the harvesting machine was welcomed as long as earnings and employment were unaffected. In the early 1850s, at one of the first trials of reaping machines, though refusing to admit that it was superior to the scythe, the labourers denied it would injure them: the reaper would 'only do work which was at present done by the Irish'.[14] By the 1880s, the most serious complaint was that the laid corn had to be cut by hand while the machine did the easy work!

III

That farmers may have had at their disposal more labourers than were strictly necessary had important implications for wage rates and labour productivity. Wages tended to fall as the supply of labour increased but only to the level of the 'social' or 'natural' wage – the acceptable minimum determined by the cost of subsistence and by custom – which may sometimes have exceeded the 'equilibrium' or 'market' wage. Whether the poor rates were a charge to the 'Wages Fund' was a moot point for economists, but farmers regarded wages and poor rates as alternative forms of remuneration paid for out of the same pocket. Yet, a large and elastic supply of labour did not mean necessarily that too much labour was being spent, only that perhaps too many labourers were spending it. A well-stocked labour market had certain compensations and it could be argued that there were positive economic benefits, at least to arable farmers, of a reservoir of labour-power. Because labour requirements fluctuated over the course of the year due to the seasonality of crop production, labour supply and demand on the individual farm were expressed not in terms of just two intersecting schedules and a single wage rate, but of a sequence of demand and supply schedules, one for each task. The division of the agricultural year into winter slack and summer rush meant that whereas there may have been a surplus of labour in the off-season there may have been labour shortages at the work peaks. What exactly was meant by 'surplus' and 'shortage' is a nice point, it being rather unclear from contemporary statements whether these refer to the physical supply – too many or too few workers in the absolute sense – or to the elasticity of supply around a given wage. It is clear, though, that labour was not subject to diminishing returns at every point, and that a zero or negative marginal productivity of labour in winter was more than fully compensated for by positive returns at other seasons. As was explained: just as it is wrong to call a soldier supernumerary when he is not fighting, 'if a man is actually necessary in harvest but not for the rest of the year, he

[13] R Jefferies, *Hodge and his Masters*, 1949 edn, pp 287–94; *Morning Chronicle*, 13 Feb 1850, p 5.

[14] Collins (1972), *loc cit*; *Farmers Magazine*, Sept 1853, p 199; J C Clutterbuck, *The Agriculture of Berkshire*, 1861, p 42.

must be kept for the year for the sake of the harvest'.[15]

Arable farmers, particularly, were prepared to subsidize wages over the winter so as to be able to command a large supply of labour – men, women and children – and so be able to realize increasing returns in the summer. An important factor was that many key summer operations, such as hoeing, weeding, and harvesting, were normally paid for by the task or piece. In piecework, as against day work, the number of workers employed was a matter of indifference to the farmer as long as the work was done in an efficient manner within a certain period of time. Indeed, the greater the number of workers, the lower the wage rate, the quicker the job, the smaller the risk of crop losses, and the larger the output. The advantages of piecework were greater when the task was done by hand. A disadvantage of machines was that labour coefficients were more fixed whereas with hand tools variable quantities of labour could be employed at zero or negative cost to the employer. Thus, for as long as there existed a store of labour there may have been good economic reasons, as well as social, why farmers held back on mechanization, and why, after 1850, they should have viewed with such alarm the drying up of what they had come to regard as an inexhaustible resource. The great complaint in the 1860s and 1870s was that labourers' wives and children, and the young single men whom they had supported over the winter – who together comprised the bulk of the labour reserve – were increasingly reluctant to do farm work in the summer when their services were most in demand. A large supply of labour conferred also positional advantages: in farming communities the number of hands and of dependants was a measure not only of economic importance but also political influence and social prestige.

But for agriculture to be able to absorb such large numbers of workers meant that labourers had to be prepared to accept low wages, and employers likewise a low standard of work output. Low wages and low labour productivity ran together.[16] As was explained, a certain number of labourers had to be employed and they, the farmers, 'do not find it in [their] interests to work them very hard'.[17] Moderate work (and low wages) were preferred to hard work (and high wages) because the former made for more continuous employment. Labour productivity, therefore, varied with the numbers seeking work and, as James Caird pointed out, to raise the work output of the few and feed them well, could only 'diminish the employment of the many for whom work must be found'.[18] Standards of labour productivity were kept artificially low in order to provide subsistence for as large a number of people as possible. The claim, in the 1820s, that low wages so dampened the efforts of day labourers that '4 or 5 of them amounted to one in task work' may not have been an exaggeration. Among progressive farmers there lurked the suspicion that cheap labour was inefficient and that the supply of effort was closely linked with the level of wages, a proposition which gained favour in the third quarter of the nineteenth century when comparisons began to be drawn between work outputs in the high-wage and low-wage regions of Britain. In 1874, the presumed superiority of the northern labourer was attributed by Francis Clifford to the rigorous resolve of employers 'to have money's worth for money (and) care in noting when labour has been rendered superfluous by machinery'.[19] 'A superabundance of an inferior article', it was

[15] *Baxters Library of Agricultural and Horticultural Knowledge*, 3rd edn, Lewes, 1834, pp 6–7.

[16] For a more detailed discussion of wages and labour productivity, see, E H Hunt, *Regional Wage Variations in Britain 1850–1914*, Oxford, 1973; 'Labour productivity in English agriculture 1850–1914', *Econ Hist Rev*, 2nd ser, XX, 1967.

[17] *Farmers Magazine*, April 1847, p 357.

[18] James Caird, *English Agriculture in 1850–51*, 1852, p 515.

[19] F Clifford, 'The labour bill in farming', *JRAS*, 2nd ser, XI, 1875, p 94.

argued, 'makes it unnaturally cheap.'[20] The wage-gap between north and south narrowed after 1870, but in many parts of southern and south-central England labour relations were soured by the belief on the one part that the labourer was incapable of 'improvement' and on the other that employers wanted only cheap labour and deliberately kept their men down. In the Great Depression, as after the Napoleonic Wars and again after 1920, farmers tended to link wages with profits, and low wages with low cost–low output methods of farming, a vicious circle which has been broken, and even then not completely, since the Second World War, when agricultural labour, hitherto cheap, became an expensive factor of production and higher wages were associated, as to an extent they had been in the 'high farming period' between 1850 and 1875, with rising output and mechanization.

IV

The agricultural labour market was a complex organism so structured that it was unlikely ever to have been in a state of equilibrium with supply and demand perfectly in balance. First and foremost, it was not one but a multiplicity of labour markets separated by space and time, frequently overlapping, and comprising many different categories of worker each with its own supply curve. Supply and demand tended in the short run to fluctuate and the convergence and divergence of the schedules was both a major source of disequilibrium and a factor which very much influenced the timing of mechanization. The major causes of discontinuity in agricultural labour markets were seasonality and the trade cycle.

Seasonality is a phenomenon central to the functioning of agricultural labour markets and contemporary data show that in the third quarter of the nineteenth century labour requirements in mixed-arable farming in the summer period were at least 30 per cent and, at the work peaks, normally the corn harvest, upwards of 60 per cent larger than in the winter period.[21] The labour requirement, however, fluctuated from year to year, in some tasks by as much as 30–50 per cent. The demand for hoe-labour, for instance, was much greater in a wet year than a dry. In the corn harvest, a heavy crop might require upwards of 20 per cent and when badly laid and twisted upwards of 50 per cent more labour than a light standing crop. Speed of ripening was of critical importance and, in hot dry seasons, when the entire crop might ripen simultaneously over a wide area, it could disrupt the flow of labour between different districts and lead to a loss of grain through shedding. Even with the machine, a badly laid crop might have to be cut by hand, thus increasing the demand for labour. Notwithstanding the now widespread use of machinery, weather conditions and the state of the crops could still be of consequence even in the late nineteenth century. In 1893, a notoriously dry year, there was little work and much unemployment because of the failure of the hay, corn and root harvests. In 1894 abundant crops and much laid corn led to labour shortages and strikes. Drought returned in 1895 and in some districts even regular hands could not get a harvest. The next two years were much more productive and the demand for labour exceptionally buoyant, especially in 1898 when the corn ripened too quickly and being heavy and badly laid had often to be cut by hand.[22] And if demand for labour fluctuated sharply so also did supply. The most crucial factor on the supply side was the trade cycle. Short-term fluctuations in the level of industrial activity affected the rate of rural migration which ebbed and flowed with the expansion and contraction of employment

[20] H J Little, 'The agricultural labourer', *JRAS*, 2nd ser, XIV, 1878, p 505.

[21] J C Morton, *Handbook of Farm Labour*, 1868 edn, *passim*; *Royal Commission on the Employment of Children, Young Persons and Women in Agriculture, 1867*, App. pt 2, Second Report, Evidence of the Assistant Commissioners, 1869, pp 327, 370, 430 and *passim*.

[22] *Labour Gazette*, monthly agricultural reports.

in the non-agricultural sector. The rate of outflow increased during the upturns and in a major recession slowed down but may even have become negative due to large numbers of migrants returning to their home parishes. The effect of cyclical fluctuations was especially pronounced in industries such as building, brickmaking, dockwork and general labouring, a large proportion of whose workforce consisted of casual labourers, and which competed directly with agriculture at the work peaks.[23]

The importance of 'pull' factors in rural migration is sometimes understated by social historians who emphasize the 'push' factors of low wages, poor working conditions and the displacement of workers by machinery. Rural migration is fundamental to economic progress and to the process whereby resources are reallocated between sectors. Studies of agricultural labour in post-war Britain show a positive relationship between the movement of labour out of agriculture and the level of industrial employment.[24] The decline of the agricultural workforce after 1850 was linked to the growth of employment in non-manufacturing industry – in trade, transport and building – and a shift of the centre of gravity of new investment southwards towards the Midlands, South Wales and London, all of which encouraged migration from the low-wage districts of southern Britain. There is evidence too of a two-way flow of population between the town and the countryside in broad sympathy with the movements of the trade cycle. Casual workers, who comprised a large proportion of the total workforce, were especially important to the functioning of agricultural labour markets. Occupationally and geographically very mobile, their work rhythms were irregular and often seasonal. From the 1830s and 1840s, triggered off by the railway boom, ever increasing numbers of young farm labourers began to wander 'abroad' in search of temporary employment in the mines, quarries, brickworks and building sites. By the 1860s farmers were complaining bitterly about the loose-footedness of their younger workers, who eschewed regular employment, stayed at home in the winter when their services were of little use and migrated away in summer when they were most required. The casual labour market was exceptionally active during upswings of the trade cycle, when large numbers of farm workers were diverted into other outdoor trades only to drift back to agriculture in the downswings. Such counter-flows were much in evidence in the recession of the late 1860s.[25] In south-east England it was reported that, 'Since the last monetary panic [1865] the labour current has turned and workmen are now plentiful in the country.' In Norfolk, number of labourers having now returned, they were 'unusually abundant'. In Berkshire it was noticed that whereas previously there had been a great drain of young men from country districts, 'since the stoppage to a large extent of engineering works, the discharge of soldiers, and the railway companies being not very prosperous, there has been rather a reaction and this winter [1867–8] we have seen more young men out of employ than for some time past'. This trend was reflected in the poor law statistics which record a sharp increase in adult able-bodied males receiving relief in the rural unions. Yet, within two years those same workhouses and casual wards were virtually empty, and in the great labour panic of 1872–4, agriculture experienced its greatest crisis, heightened by a resurgence of trades unionism and

[23] For further discussion of the casual labour market, see S Pollard, 'Labour in Great Britain', in P Mathias and M M Postan (eds), *Cambridge Economic History of Europe*, VII, Cambridge, 1968, pp 97–979 *passim*; G Stedman-Jones, *Outcast London*, Penguin 1984 edn, chaps 2–6.

[24] K Cowling *et al*, *Resource Structure of Agriculture: An Economic Analysis*, Oxford, 1970, chap 3, and p 90 fn.

[25] *Ibid*, p 401; *Farmers Magazine*, Oct 1879, p 299; H Evershed, 'Report on the agriculture of Kent, Sussex and Surrey', *Journal of the Bath and West of England Society*, 3rd ser, III, 1871, p 17; C S Read, *The Education and Wages of the Agricultural Labourer*, Norwich, 1867, p 7.

culminating in the strike and lock-out in the eastern counties in 1874.

V

In his classic text on unemployment, published in 1907, William Beveridge stated that in agriculture the pressure on the labour market due to trade fluctuations was 'hardly noticeable', it being a relatively stable occupation.[26] Both agricultural output and the demand for food being relatively inelastic, agriculture was not subject to the same degree of business fluctuation as other industries. But as we have seen, in many key operations, especially in arable farming, the labour requirements fluctuated from year to year due to bio-climatic factors while labour supply tended to expand and contract with shifts of the trade cycle.

The implications for agricultural mechanization of autonomous shifts in labour supply and demand were not insignificant. A steady deterioration in the agricultural labour market due to rural migration or rising agricultural output could have been met by an orderly uptake of machines and a planned reduction in the size of the workforce commensurate with the growth in urban and industrial employment and movement of labour out of agriculture. Yet, because of the instability of labour markets mechanization was seldom a smooth and orderly process, but irregular and abrupt. Farmers did not as a rule view mechanization as part of a programme of agricultural improvement but rather as a response to shifts in the labour market. As was complained, they bought machines only when they had to, not to increase profits nor to change the pattern of production, but to save labour in perhaps just one farm operation. This is to say that mechanization was more often 'induced' and was essentially a response to changes in relative factor costs. Thus machines tended most often to be purchased not when farm profits were highest and farmers could most easily afford them, but at times of labour shortage. Rising wages, strikes and labour shortages tended to coincide with cyclical peaks. There were widespread shortages of harvest workers in 1836, 1839, 1845 and 1846 and local shortages in 1834 and 1841 which accords remarkably well with the movement of the Gayer, Rostow & Schwarz index of industrial activity. In the third quarter of the nineteenth century shortages were reported in 1853, 1856, 1857, 1859, 1864, 1866, 1867 and 1872–4, showing the same coincidence. The relationship between labour supply and shifts of the trade cycle was uncannily precise even in the 1890s. An abundance in 1892–4 was followed by a contraction from 1895–6. In 1897 there was a scarcity even in the winter when in southern and eastern England it was difficult to find 'odd men' for threshing work. The years 1898–1900 were the most difficult since the great labour panic of the early 1870s and in terms of industrial activity the most buoyant, notably in the construction industry. There were reports too of the non-appearance of the Irish many of whom deserted agriculture for other work, and of the diversion elsewhere of numbers of other migrant workers.[27]

A study of farm machinery in nineteenth-century Oxfordshire based on farm sale notices has demonstrated a marked rise in the number of machines in the mid-1840s, late 1850s and mid-1860s, and of reaping and mowing machines in the early 1870s. Trends in machinery sales show a similar pattern. In 1859–60, for example, Burgess and Key sold nearly 1800 reaping machines compared with only 1000 between 1851 and 1858. Three manufacturers sold between them 98

[26] W Beveridge, *Unemployment*, 3rd edn, 1912, p 64.

[27] For harvest labour supply, see, E J T Collins, *Harvest Technology and Labour Supply in Britain 1790–1870*, unpublished PhD thesis, University of Nottingham, 1970; *Labour Gazette*, monthly agricultural reports (1890s). For cyclical movements, see, A D Gayer, W W Rostow and A J Schwarz, *The Growth and Fluctuation of the British Economy 1790–1850*, Oxford, 1953; J R T Hughes, *Fluctuations in Trade, Industry and Finance*, 1960, pp 28–30; C H Feinstein, *National Income, Expenditure and Output of the United Kingdom, 1855–1965*, Cambridge, 1972, Tables 51 ff.

reaping machines in 1858, 495 in 1859, and 1310 in 1860. The total number of reaping machines in use increased from an estimated 4000 in 1859 to 80,000 in 1874 of which perhaps as many as half had been purchased since 1870. Other evidence suggests an upsurge in the use of self-binders and hay-sweeps in the later 1890s.[28] This chronology is confirmed by contemporary farm accounts. Clearly, there was a close correlation between the state of the labour market and the uptake of labour-saving machinery.

The sequence now becomes clear. Mechanization was both cause and effect of instability in agricultural labour markets. Machines were introduced as a reaction to shortages of labour at high points in the trade cycle with the result that in the troughs when the labour current turned there were now more workers chasing fewer jobs, and therefore more unemployment.

VI

Technological unemployment appears not to have been a major social problem in English agriculture in the nineteenth century, although, as has been argued, it was not always immediate and the effect of the lag may have been to understate its importance. The social costs of mechanization were minimized because machines were not always used to full advantage and because farmers were prepared to employ more hands than were strictly necessary in order to make work. Probably very few farmers could calculate exactly the effect on their budgets of substituting capital for labour and in their attempt to optimize profits and employment it is unlikely that either was used efficiently. Whether technical change was 'autonomous' or 'induced' is a moot question, but empirical evidence suggests that in agriculture labour-saving innovation normally occurred as a direct response to changes in relative factor prices independent of changes in production.[29]

Over much of rural England the essence of the employment problem in the nineteenth century was that labour was over-supplied, or at least abundant. There was no great inter-change of labour between the agricultural districts of southern and eastern England and the industrial north and midlands nor, compared with other occupational groups, did large numbers of agricultural labourers migrate overseas. After 1850 the rate of rural migration accelerated and the wage gap between regions began to narrow. Whilst in the main there was an inverse correlation between wage rates and migration, this was by no means perfect nor everywhere the case. Birth rates in rural areas were higher than in urban areas with the result that disproportionately large numbers of young males were obliged, prior to migration, to seek work in agriculture. And, also, as already explained, rather than discharge their surplus labourers, farmers in low-wage areas would often create work in order to retain them, thereby perpetuating the vicious circle of low productivity and low incomes.[30] In the face of what would seem to have been strong economic incentives to migrate away, agricultural labour was perversely immobile with the result that between 1850 and 1900 average agricultural wage rates rose by only 50 per cent, whereas national average wage rates rose by more than 80 per cent.[31] Indeed, it could be that one of the main reasons why labour was slow

[28] J R Walton, 'A study in the diffusion of agricultural machinery in the nineteenth century', *Research Papers*, School of Geography, University of Oxford, 1973; J C Morton, 'Some lessons of recent agricultural experience', *Journal of the Bath and West of England Society*, 3rd ser, IX, 1861, p 228; J C Morton, 'On the forces used in agriculture', *Journal of the Society of Arts*, 1859, p 57; *Farmers Magazine*, Jan 1875, p 5.

[29] For a review of the theoretical problems, see C-A Olsson, 'Relative factor prices and technical change', in L Jörberg and N Rosenberg (eds), *Technical Change, Employment and Investment*, University of Lund, Sweden, 1982; W E G Salter, *Productivity and Technical Change*, Cambridge 1960, chaps 5, 10, 11, 12.

[30] Armstrong, *loc cit* p 73. For the connection between wages and migration see, E H Hunt, *Regional Wage Variations*, chap 7.

[31] B R Mitchell and P A Deane, *Abstract of British Historical Statistics*, Cambridge, 1962, pp 343, 349–50.

to migrate was that instead of reaping the full cost-benefits of mechanization, farmers chose to maintain employment at an artificially high level in order not to deplete their 'labour store'.

To confirm the foregoing analysis one should, of course, establish from quantitative evidence within a formal model the point on the marginal costs curve where long run profit considerations fade into personal or social ones, a task which must be left to the cliometricians.[32] This paper has suggested that in England agricultural mechanization did not result either in a mass exodus of labour from the countryside, nor in large-scale technological unemployment, at least not among regular farm workers. It is argued that over much of southern Britain, notably in the arable districts, there were good economic as well as social reasons why farmers may have eschewed machines in favour of more labour-using methods, and have hoarded a 'store of labour' which, surplus to requirements in the slack times, could be used to advantage at the work peaks.

[32] I am grateful to Professor Parker for clarifying this point.

Notes on Contributors

(continued from page 35)

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RACHEL HELLIER was born into a Yorkshire farming family in 1930. She took a degree in agriculture at Oxford (MA 1952), followed by a DipEd (1961) and a BSc in Economics (London, 1975). She was an Agriculture Officer for the West Riding County Council until 1974, and for the last ten years of her sadly curtailed life a Senior Lecturer in Agriculture at Askham Bryan College, York. Her research into agricultural history was largely a spare-time activity and remained unpublished. Her papers came at her death to BARBARA HUTTON, FSA, President of the Vernacular Architecture Group, who was then Chairman of the North Yorkshire and Cleveland Vernacular Buildings Study Group, of which Miss Hellier had been a founder member and an enthusiastic supporter. Miss Hellier's studies of farmsteads and of individual farm buildings are filed at the Yorkshire Archaeological Society, Leeds, with the other records of the North Yorkshire Group.

Growth and Structural Change in the English Dairy Industry, *c*1860–1930[1]

By DAVID TAYLOR

AFTER years of neglect the English dairy industry is now receiving the recognition it deserves from historians.[2] From the latter decades of the nineteenth century, changes in both the demand for and supply of agricultural produce led to a fundamental restructuring of English agriculture. Dairying became the most valuable sector and liquid milk production the most important single enterprise.[3] Thus, P J Perry writes that 'it is scarcely possible to find an area of Britain where dairy farming was not on the increase during this period.'[4] In similar vein, C Ó'Gráda, noting the growth of and structural change in dairying, observes that this 'specialisation in liquid milk production made perfect sense' in the circumstances of the time.[5] Without dissenting from the general line of argument it is necessary to sound a word of caution. There is a real danger, even in the more specialized literature, of neglecting temporal and regional variations that are an essential feature of change.

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

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

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

[3] The details are as follows:

Percentage Contributions to Gross Agricultural Product

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

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

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

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

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

increase in numbers in the first half of the 1870s, though this reflects, in part, a recovery from the effects of the cattle plague of the 1860s. However, in the second half of the decade, twelve counties, including the major dairying areas of Cheshire, Gloucestershire, Shropshire, Somerset, Staffordshire and Wiltshire, experienced a decline in numbers. For the most part, the 1880s were years of expansion. With the exception of Middlesex (and Huntingdonshire in the first half of the decade) every county increased its dairy herd, in some cases quite substantially. In contrast the 1890s proved to be problematic in many parts of the country. In the first half of the decade twelve counties experienced a fall in numbers. Again, major dairying counties – Dorset, Gloucester, Somerset and Westmorland – were affected but so too were relative newcomers, such as Berkshire. The second half of the decade saw declining numbers in fifteen counties, seven of whom had experienced falls in the earlier period. Although the worst was over by the turn of the century, ten counties saw a diminution in their dairy herds in the period 1901–5. This time, however, losses were concentrated in the newer dairying areas such as Bedfordshire and Norfolk. Expansion characterized the following years but the immediate pre-war years saw decline in seven counties. These figures reveal a clear contrast between the late 1870s, when problems were centred on the old dairying districts, and the 1890s and early 1900s when it was newer areas that were more seriously affected. On top of this can be seen a number of regional variations. Middlesex, unsurprisingly, saw a steady decline in numbers checked only in the late 1890s. In the east of the country the number of cows and heifers in milk or in calf in Huntingdonshire began to decline in the early 1880s and, after a brief recovery in the second half of that decade, continued to fall until the immediate pre-war years. This fact reflects, more than anything, the problems of beef production. Similarly, in Rutland, numbers fell throughout the 1890s and early 1900s but did not recover to the 1880s level until after the Great War. More to the point are the problems experienced in the south-western counties of Dorset, Gloucester, Somerset and Worcester. The latter experienced a sluggish overall growth rate with serious reversals in the 1890s and again before the war. In Gloucestershire numbers scarcely changed, the slight gains of the 1880s being wiped out by the falls of the 1890s. Even in Somerset, and to a lesser extent Dorset, though numbers increased in the long term, there were appreciable setbacks in the late 1870s and the 1890s.

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

I

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

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

Although not a serious threat to the best English cheeses, imported Cheddars were reliable in terms of quality and compared favourably with the bulk of the home make which was not of prime quality. Of equal, if not greater, importance was the price factor. Little is known of retail prices but with imported cheeses wholesaling at between 10*s* and £1 less per hundredweight than average cheese in the 1870s and 1880s it is not unreasonable to assume that there was an appreciable (if not equal) difference in retail prices.[9] Even when price differentials had been greatly reduced by the end of the century greater reliability still tilted the balance in favour of imported cheese in comparison with ordinary English cheeses. The trend of imported cheese prices was clearly downward. In the late 1860s and early 1870s prices hovered around the 60*s* a hundredweight mark but by the mid-1890s they were in the region of 45*s*. The decline, however, was not uniform. 1879 and 1885 saw price falls of some 15 per cent while in 1895 prices fell by just under 10 per cent. Such sharp short-term fluctuations, superimposed on a long downward trend, created conditions in which ordinary cheese making was no longer profitable. Only producers of best quality cheeses and specialist makes could hope to survive.

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

[7] There are major problems in estimating milk yields and usage in the third quarter of the nineteenth century. For a detailed consideration of these problems and an attempt to estimate the size and structure of the English dairy industry see D Taylor 'The Development of English Dairy Farming, c1860–1930', unpublished DPhil thesis, Oxford University, 1971, chap iv, and for a summary of the main findings, D Taylor 'The English Dairy Industry, 1860–1930', *Econ Hist Rev*, 2nd ser XXIX, 1976, pp 585–601.

[8] *Census of Agricultural Production, 1908*, PP 1912–3, x, p 56.

[9] Generalizations are difficult to make given the paucity of data. The figures in this paragraph are drawn from the yearly *Agricultural Statistics, Report on Wholesale and Retail Prices*, PP 1903, LXVIII, p 150 and information given to the Royal Commissions on Agriculture, especially *Minutes of Evidence*, PP, 1881, xv, QQ 1836–1838 and *Minutes of Evidence*, PP, 1894, xvi, pt iii, Q 42, 271.

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

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

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

A similar pattern emerges when one looks at Derbyshire and Staffordshire. In the latter, cheese making was on the decline in the 1860s but the shake out was accelerated in the subsequent decade. As a consequence, as the Richmond Commission was informed, farmhouse cheese making was all but finished.[12] In fact, there was a brief revival in the mid- to late-1880s but this was not long lasting. Similarly, in Derbyshire the decline dated from the 1860s, with 1865 an important short-term stimulus. By 1880 it was estimated that cheese making in the county had declined by 50 per cent compared with 1870. Moreover, during the 1880s the trend continued with an almost total abandonment of farmhouse cheese making by dairy farmers living within five miles of a railway line.[13] Only in the less accessible upland areas of the north-west of the county did traditional dairying persist.

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

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

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

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

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

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

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

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

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

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

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

[18] Details taken from Kelly's Directories for Wiltshire.

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

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

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

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

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

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

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

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

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

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

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

[19] T Hewer, *North Wiltshire Herald*, 19 December 1868.
[20] Rev H G Bailey, *ibid.*
[21] *North Wiltshire Herald*, 14 March 1868.
[22] *Royal Commission, Minutes of Evidence*, PP, 1894, xvi pt ii, Q 15,891.

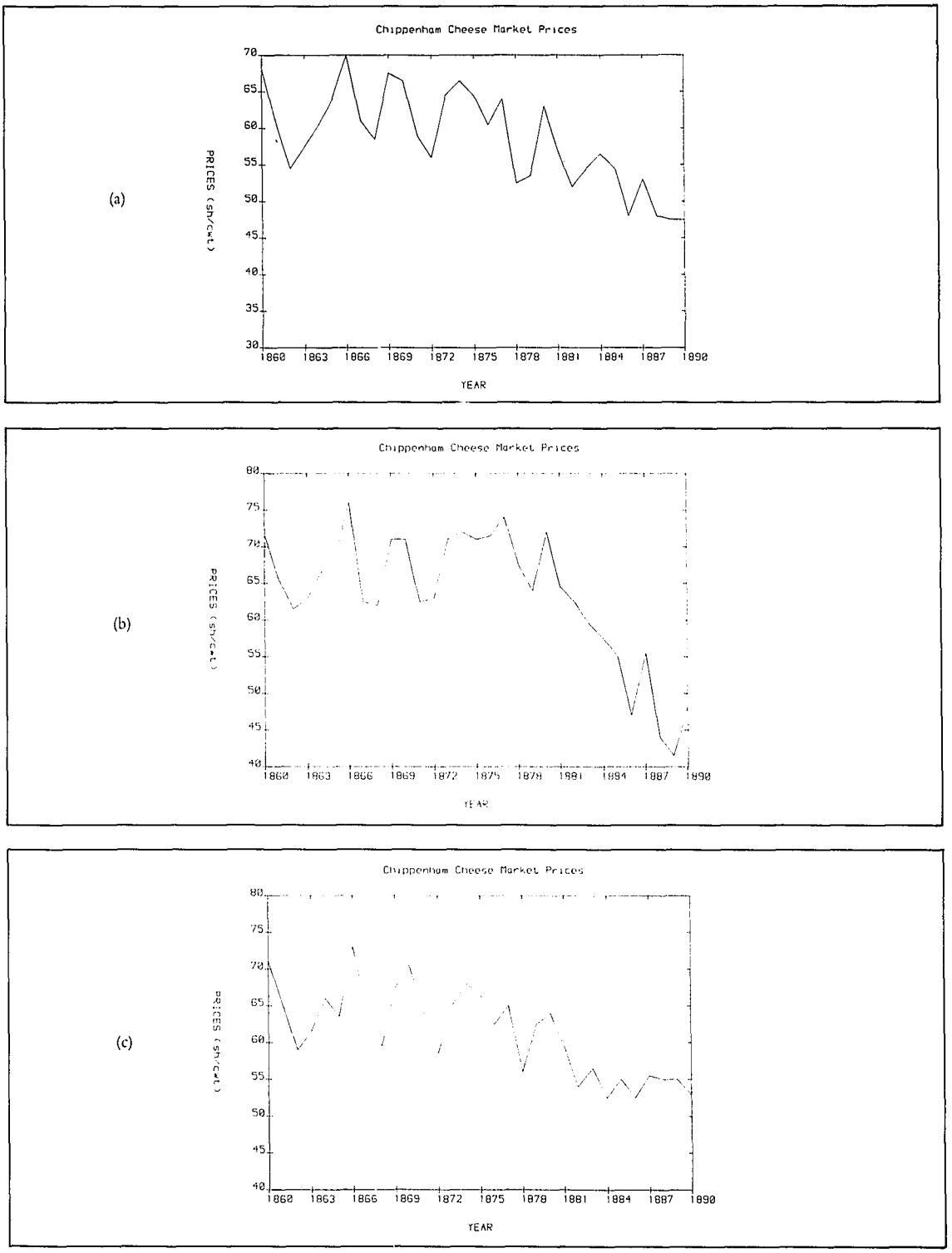


FIGURE 1

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

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

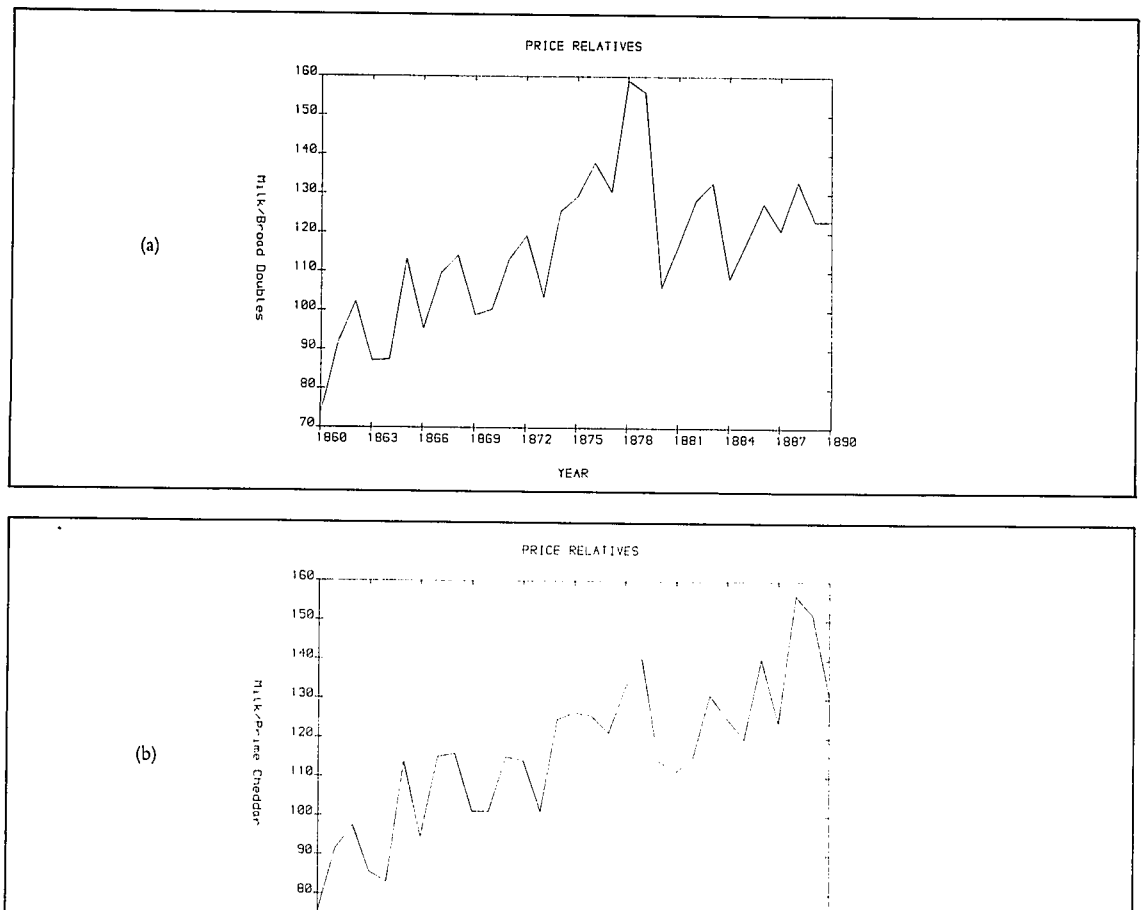


FIGURE 2

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

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

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

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

During the 1920s the percentage of milk devoted to cheese making hovered around the 5 per cent mark, but this is not to suggest that there was any revival. On the contrary, the late 1920s and early 1930s saw the final stage in the decline of farmhouse cheese making in England as a further flood of imports swamped the market and dragged prices down to ruinous levels. In 1933/4 there were only 1324 farmhouse cheese makers holding a licence from the Milk Marketing Board, using a mere 18.8 million gallons of milk.[23] Of all the farmhouse cheese made 52 per cent was Cheddar and 30 per cent Cheshire. Lancashire cheese accounted for a further 14 per cent and of the remainder Wensleydale accounted for 2 per cent, Caerphilly 0.8 per cent and Stilton 0.4 per cent. With the exception of Caerphilly, which was made on a larger scale than before the Great War, these figures give a reasonable impression of the importance of the various cheeses at the turn of the century.

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

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

[24] *Census of Agricultural Production, 1908*, PP, 1912–3, x.

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

Not surprisingly, by the early twentieth century butter making was only important in those outlying areas where the liquid milk trade was impracticable. By the 1890s butter making was no longer important in the Vale of Aylesbury and the same was true of much of Somerset, though less so of Dorset. Devon and Cornwall in the south-west and the Lakeland counties of Cumberland and Westmorland were the remaining strongholds. The pattern remained largely unchanged in the 1920s with butter making being 'practically confined to small-scale production for local requirements in districts out of range of the liquid milk market. . . '.[26] Profitable butter making in Cornwall was very much the exception to the rule. For the most part the story was one of steady decline and the loss of markets to foreign imports. As with cheese making the potential of technical and organizational advances (exemplified by the co-operative creameries of Denmark) was never realized in England. However, in neither case should this be seen as failure for there was an attractive alternative that enabled the dairy farmer to sidestep the challenge of his continental or antipodean rival. In the growing trade in liquid milk was to be found a solution that was attractive to the dairy farmer and other members of his family.

II

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

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

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

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

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

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

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

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

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

Rail-borne milk was first transported to London, Manchester and other large cities in the 1840s. The volume grew in the next decade and the basis of a supply and transportation structure was in being before the outbreak of cattle plague in 1865 which had a devastating effect on urban cow-keepers, especially London. The 1870s and 1880s saw a marked increase in the liquid milk trade. Not that this expansion was without its problems. The liquid milk trade and, in particular, the trade with London was overstocked in the late 1870s and again in the mid-1880s, especially after the collapse of cheese prices in 1879 and again in 1885. The trade remained in the doldrums for several years. Indeed, a further collapse in cheese prices in 1895 led to a clear oversupply in the following year. The situation improved in the early twentieth century, though the problem of short-term oversupply, particularly during the summer months, was never fully resolved.

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

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

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

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

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

Looking at the neighbouring counties of Oxfordshire and Berkshire one sees a similar early involvement in the liquid milk trade. In 1870 Berkshire supplied London with almost a quarter of its rail-borne milk, while Oxfordshire accounted for just under 40 per cent. Although the relative importance of Oxfordshire had diminished by the mid 1880s, the absolute volume of milk transported from the two counties had grown markedly. The Vale of White Horse in Berkshire was one of the major milk producing areas in the country, while from around Thame in Oxfordshire through Princes Risborough to Beaconsfield there was a further heavy concentration on milk selling. In Buckinghamshire traditional dairying persisted longer, but by 1894 Aubrey Spencer reported that in the Vale of Aylesbury butter making, once the mainstay of the district, had 'gone out of favour and the majority of farmers sell milk'.[34]

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

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

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

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

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

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

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

Elsewhere in the country one can discern similar responses. In Derbyshire there was a move into milk-selling dating from around 1860. The cattle plague of 1865 was a major short-term stimulus. The 1870s saw a major change-over, given a further boost by the collapse of cheese prices in 1879. By 1881 it was estimated that over half, and possibly as much as three-quarters of the milk produced in the county, was sold in liquid form. By the end of the decade the vast majority of dairy farmers had abandoned traditional manufacturing, but such was the rate of change that the milk trade was depressed, often severely so, in the late 1880s and early 1890s.[39] A similar pattern developed in Staffordshire where cheese making was all but finished by the early 1880s.[40] Both counties sent considerable quantities of milk to London but it would be wrong to neglect the importance of more local markets. Nowhere was this more the case than in Lancashire. Particularly in the south of the county, where transportation was no problem, there had been a steady shift into the liquid milk trade from the late 1840s.[41] Even neighbouring Cheshire, very much a cheese-making stronghold, could not escape entirely the effects of the growing urban demand for milk. As early as 1845 Palin noted that he could find no butter or cheese manufacturer in the dairy farms between Runcorn and Manchester. Twenty years later, W H Heywood, who farmed at Dunham Massey, Altrincham, demonstrated that milk selling was more profitable than cheese or butter making. However, one must not overstate the extent of change in these years for one reference to Cheshire farming in the 1880s could talk of 'railway milk . . . being almost unknown'. Sadler, seeking to explain this, emphasized the psychological barriers to change.

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

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

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

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

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

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

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

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

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

The transformation in dairying districts was supplemented by the development of milk production in other pastoral areas with established livestock husbandry skills. In Leicestershire, for example, there was a move into the liquid milk trade in the late 1880s and 1890s.[44] Milk was sent to London and also to Newcastle. In Nottinghamshire, Shropshire and Warwickshire, similar patterns can be discerned, though the milk trade remained relatively limited in the latter.[45] Similarly, in many eastern counties milk selling became important as either land was converted to pasture or as arable dairying was developed. Essex best exemplifies both cases. The collapse of arable farming in the county and the influx of migrants from south-west Scotland led to a marked shift in farming practice as milk-selling to London became a major concern.[46] This new trade was largely responsible for the 50 per cent increase in the county's dairy herd between 1882 and 1892. The 'Scotch' system involved a considerable substitution of labour for capital but it was essentially a low pressure system with low costs and low yields. However, this was not the only avenue to success. Perhaps more striking were the achievements of Edward Strutt who farmed the estate of his brother, Lord Rayleigh in the Chelmsford/Maldon district of Essex. The estate was predominantly arable when Strutt took it over in 1876. Detailed accounts have not survived for the first decade but by 1886/7 milk already accounted for one-third of gross output, though corn accounted for some 40 per cent. By the end of the decade these figures had been reversed and by the mid 1890s milk accounted for around 50 per cent of gross output and corn less than 30 per cent.[47] With the exception of 1892/3, a profit was made in every year. Unlike the Scots, Strutt's system was intensive arable dairying. Pasture was kept to a minimum but large acreages of roots were grown for winter feed. At the same time an extensive building programme was completed and attention was paid to the production of high quality clean milk.

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

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

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

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

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

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

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

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

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

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

It is easy to overstate the success of the new trade compared with traditional dairying. There was always a market for fine quality cheese and butter. Further, by the end of the century the liquid milk trade was oversupplied. Although one cannot speak with precision, because of the absence of reliable data, it would appear that, especially in the 1890s, liquid milk production was attractive, not because of the inherent profitability (as was the case in the 1870s), but because of its rapid rate of turnover and the limited capital needs. Finally, it is important to stress the problems involved in the transition to the milk trade. Even for the traditional dairy farmer there were additional costs, chiefly involving the transportation of milk to the nearest railway stop and rail charges themselves. For farmers extending dairying enterprises the problem of laying down and monitoring pastures (or developing forms of zero grazing), erecting new buildings and ensuring an adequate supply of skilled labour for milking could be major obstacles. Given these problems, the pre-war progress of dairying was steady rather than spectacular.

III

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

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

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

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

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

However, the new awareness of the dietetic value of milk was not translated into a significant increase in demand during the 1920s. In contrast, the supply of milk increased markedly. The high price of milk was an obvious attraction and many dairy farmers rushed in. It was not simply a question of restocking, or even of increasing the stocking density on old pasture lands, though both happened. Supplies were augmented from new milk producing areas. However, it was in the traditional dairying county of Gloucester that the greatest increase in dairy herd size took place. By 1930 there had been an increase of 40 per cent over the pre-war level. No other county could compare with this. Nonetheless, in Wiltshire, Hampshire and the established dairying county of Shropshire there were increases of between 25 and 30 per cent. Similar increases were recorded in the newer dairying areas of the south and east, notably Norfolk, Kent, Suffolk and Sussex. Increases of between 20 and 25 per cent (compared with a national average of 14 per cent) were achieved in a further nine counties, of which Berkshire, Oxfordshire and Staffordshire were already established dairying areas. In the Midlands, stimulated by the industrial growth of Birmingham and the Black Country, Nottingham, Warwickshire and Worcestershire took the lead. Two other eastern counties – Rutland and Huntingdonshire – saw similar increases as did the northernmost county in England, Northumberland.

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

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

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

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

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

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

He continued,

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

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

IV

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

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

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

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

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

This is not to say, however, that structural change took place smoothly or without difficulties. The natural hazards of weather and disease could bring ruin.[55] The burden of rail costs was a constant source of complaint. Labour scarcity, the difficulties of getting good milkers, restricted developments in certain parts of the south-west.[56] Technical and financial constraints limited change in the east particularly. Finally, there were the problems of an unregulated trade: marked short-term fluctuations and periodic glut. These were very real problems that hampered the smooth transformation of agriculture. Moreover, the interplay of factors varied considerably from region to region. Consequently, change took place at different times and at different speeds across the country. However, the complexities of the process of change and the difficulties encountered by the dairy farming community cannot, in the final analysis, obscure the success of the liquid milk trade in these years. Indeed, appreciation of these complexities and difficulties adds to, rather than detracts from, the achievements of the oft-despised 'dirty boot farmers'. Without the liquid milk trade the plight of English agriculture in the late nineteenth and early twentieth centuries would have been dire indeed.

[55] Historians, preoccupied with long term trends, often overlook the impact of short term factors. While it would be wrong to blame the difficulties of agriculture solely upon the vagaries of the weather or the accident of disease one should not minimize the impact. For example, the cattle plague of 1865/6 caused large-scale casualties in London and the major 'dairying counties' of England. Between 1869 and 1894 rinderpest is estimated to have been responsible for over 100,000 fatalities. Foot and mouth disease broke out in every year from 1869 to 1886 and was particularly serious in 1869/71, 1874/5 and 1876/7. Pleuro-pneumonia was rampant in 1865/6 and again in 1870/1. Dairy cattle were also afflicted by contagious abortion, milk-fever and mastitis. The latter was commonplace and almost accepted as part of the natural order. Further milk yields and production costs were adversely affected by severe winters in 1879/80, 1880/1, 1886/7 and 1895/6: by cold and wet summers in 1877, 1878 and especially 1879 as well as in 1903; and by severe summer droughts in 1887, 1892, 1893, 1895, 1896, 1901 and 1911, it was not without reason that farmers were much concerned with such 'accidentals'!

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

Early Modern Agriculture: a new harvest gathered in

By E A WRIGLEY

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

It is sometimes said of a particular work that it is impossible to do justice to it in a review, usually for reasons of space. Composite works of exceptional length, such as the fifth volume of the *Agrarian History*, pose especially acute problems. Even in a comparatively lengthy review, individual consideration of the contributions of nineteen different authors is scarcely feasible, especially when between them they have penned about 700,000 words, or their equivalent in tables, etc, at a rough count. But another feature of this work causes a greater difficulty if justice is to be done to it. The preface, written in early 1983, refers to the work having been ten years in the making. In a sense, however, since the planning of the series as a whole began in January 1956, the work must reflect decisions taken over a thirty-year period. Moreover, individual authors finished their contributions at different dates, so that even if each volume is treated in isolation, it must be exceedingly difficult to avoid unconscious injustice in writing of a given author's contributions. Perhaps, therefore, it is as well to begin this review by stating unambiguously that it is certain to be unjust since I shall write both of its organization and content from a 1986 vantage point. To do so may be manifestly unfair to an author who may for good reason have laid down his pen in the later 1970s (as appears to have been the case in at least one instance). Similarly, in writing of the organization of the book, it is absurd to make the implicit assumption that it was clear in 1973 what direction research would take over the next thirteen years. Not to do so, however, would make for an excessively tortuous exercise in which the wish to be fair might prove hopelessly at odds with clarity.

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

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

course, widely employed, notably manorial documents and those related to the payment of tithes, but the bulk of the telling detail was derived from inventories. The analysis of inventories enabled confident statements to be made about trends in flock size or in the relative importance of the main cereals. Inventories were invaluable both in providing a quantitative underpinning to the description of the regional farming systems, and in giving authority to statements about the nature of agricultural change between the mid-seventeenth and mid-eighteenth centuries. They were also very useful in the exploration of another topic well treated in the first volume, the interlinkage between agriculture and other forms of economic activity. Although naturally subordinated to the description of local farming, care has been taken to describe the nature and prevalence of local manufacture and mining, both as a general phenomenon of the region and as it impinged on the activities of individual yeomen and husbandmen, whose households at their death often contained implements and stocks of materials affording precise evidence of the extent of non-agricultural activity on the farm. In passing one might note how arbitrary later distinctions and conventions can be. The making of cheese from milk is often regarded as an activity within the agricultural sector whereas the spinning or weaving of wool may be classed as manufacturing, yet both represent the further processing of a primary agricultural product to make it useful to the final consumer.

The regional chapters also represent a vast storehouse of miscellaneous information which will be of great value to both agricultural and economic historians – on the early history of the potato as a substantial crop in the north-west (pp 23–4, 64); on the stinting of commons as a cheaper alternative to their enclosure (pp 117–18); on the means adopted to lengthen the period in each year during which cows were in milk (p 233); on the reasons why tenant farmers might prefer short to long leases (pp 114–15); on the circumstances which led to the substitution of wheat for barley (p 179); and so on.

Minor deficiencies do occasionally obtrude. It would be a well-informed scholar, for example, who could define the differences not merely between tups, hoggs and wethers, but gimmers and dinments as well, when reading about sheep; or who would be confident that he had grasped the import of the remark that the cattle 'still ran over the rowens and etch, on the ollands and summerleys, as well as on permanent pasture' (p 235). The resort to esoteric terms is sufficiently common to suggest that it would have been wise to include a glossary of terms somewhere in the volume.

Inevitably, too, in the course of twelve regional chapters averaging thirty-five pages in length, there are times when the text grows tedious as the contents of yet another inventory are summarized, or the agricultural ecology of a sub-region described. But any tendency to pile Pelion upon Ossa on the part of the individual authors must have been firmly curbed by the editor and the overall impression of part I is of an effective use of space to excellent effect.

Part II is less successful. The ordering of the two parts suggests that part I was intended to provide a rich empirical base and that part II would draw out the significance of what had been earlier described. The organization of part II is topical, each chapter dealing with a particular aspect of the history of the period – agricultural innovation; the marketing of produce; landlords and estate management; rural building; market gardening; agricultural policy on the part of the state; prices, wages, rents and profits. A chapter is devoted to each of these subjects (or, to be precise, two chapters in the case of landlords and estate management and rural building; in each case Wales is covered separately from England). In addition there is what is in effect a short chapter on tithes, though not designated as such, in the body of the work, and appendices dealing with

weights and measures; land measures; and the statistics of prices and wages, together with scattered data on output, productivity and overseas trade in agricultural goods.

Several of the chapters are splendid achievements. Thick's account of the rapid development of market gardening, for example, is admirable. From exceedingly modest beginnings in the sixteenth century market gardening grew at great speed in the following century. As in so many other spheres of economic activity, the growth of London was an especially important catalyst both by affording a large market and by providing a large return flow of human and animal manures and waste products such as soot to enable even the least promising soils to yield abundantly, sometimes the year round with the assistance of glass cloches. Market gardening was the point of entry for many crops and cropping practices which ultimately helped to transform full-scale agriculture. The seed trade developed in close proximity to market gardening and not only helped to alert farmers and growers to the existence of new or improved varieties of useful crops but began to print and distribute sales catalogues and instructions about cultivation.

Similarly, Chartres's chapter on the marketing of agricultural produce is most informative and impressive, being especially successful in conveying a vivid sense of the extent of change during the century 1640–1750. He is equally at ease with evidence pointing to the growth of an integrated national market; with the gradual rise in the proportionate share of export demand within the total to peak levels exceeding 10 per cent of total production by the end of the period (in the case of grain); with the nature and implications of transport changes; and with the development of new marketing methods and stuctures as the farm gate and the inn yard began to supplant fairs as the main sites for bargaining and sale. Chartres also shows an appreciation of the fundamental importance of attempting some estimates of the size of the physical output of agriculture and of its animal stocks (tables 17.4 and 17.5, pp 444–5), displaying a willingness to attempt the kinds of measurement which, however difficult, are essential to discussions of national agricultural structure and change over the period.

Thirsk's two chapters in part II, on agricultural policy and on innovations and their diffusion, display a characteristic depth of scholarship, made accessible by a felicitous pen, and enlivened with much telling detail. She ranges very wide in the chapter on public policy from government concern about the shrinkage of domestic timber supplies under the Commonwealth to the reasons why cheese producers were active in promoting river improvements, while at the same time succeeding in conveying a clear sense of the sea-change taking place in government thinking about the proper balance between public and private initiative. Her chapter on innovation covers ground in part traversed previously but reorganizing the information to link effectively both with the regional chapters in part I and with some of the topical chapters of part II, notably that on horticulture by Thick.

Bowden in his chapter on prices and wages extends over a further century his earlier work on Tudor and early Stuart trends, marshalling very large quantities of data in the chapter and its related statistical appendix. He deals at length with many facets of the behaviour of the series he has compiled – secular trends, annual movements, regional differences, seasonal patterns, commodity terms of trade, etc. The work will be of great benefit to all those in need of long-run data, especially relating to price, though their value is limited for many purposes by being listed solely in an indexed form in almost all his tables.

Bowden's forays into interpretation are not always felicitous. For example, the issue of the relationship between price behaviour, corn yields and the weather deserves

re-examination. Price data are relatively good and show a marked tendency to 'clump' with runs of high or low prices occurring more frequently than would happen if annual fluctuations were random, but it is dangerous to assume that prices were mirroring similar runs in yields (p 56). It can be shown, for instance, that in nineteenth-century France, for which both price and yield data are available, prices behaved in a manner very similar to that to be observed in earlier English price data, but yields showed no similar tendency. Their fluctuations were random: there is no evidence that there were any runs in the yield data other than those which would arise from time to time by chance.[1] There is also good reason to be doubtful about the justification for the view that patterns in weather fluctuations underlay both yield and price behaviour. Again, some statistical inferences appear dubious. Years that were good for wheat were bad for hay and vice versa, in Bowden's view. There is good reason on general grounds to believe that this view is correct. The method employed to test it, however, would only be appropriate if the two series were each trendless, but hay prices were significantly higher in the second half of the period than in the first, while the reverse was true for wheat. Or to take a wider issue, Bowden's assumptions about the relationship of bad harvests and increases in mortality, and especially about a link between poor harvests and plague outbreaks (pp 58–9) do not accord well with recent research.[2]

Clay's expertise in matters relating to landlords and their estates ensured that his chapter would be authoritative and fully informed; nor is it lacking in evidence of the far wider range of knowledge recently deployed so successfully.[3] Moreover, it is a pleasure to read; an example of much learning carried lightly. To accommodate national differences in this case, as also in the case of the chapters dealing with rural building, Wales is treated in a separate, parallel chapter.

The chapters on rural building, though fascinating *in se*, and replete with excellent plans, elevations, perspective sketches and photographs, nevertheless bring to the fore a problem relating to the strategy of the enterprise. The choice of the adjective 'agrarian' to describe the scope of the series as a whole indicates that it was intended to cover a broader canvas than simply agricultural history. Rural building was unquestionably an important aspect of the rural scene, though perhaps not so prominent a feature as to justify devoting to it a sixth of the main text of the two parts, excluding the appendices. But a number of other topics seem to suffer from under-representation, so that the balance and strength of the work as a whole is affected. It is time to consider such wider issues.

First, the work would have benefited from being placed in a wider setting, both chronological and geographical. Over the seventeenth and eighteenth centuries as a whole English agriculture achieved a degree of advance which stands in strong contrast to comparable trends on the continent. Population grew substantially faster over these two centuries than in other European countries, yet there is reason to believe that the agricultural labour force rose very little. Most of the growth in population was urban or in that sector of the rural labour force which found its main income outside agriculture. England remained largely self-sufficient in food throughout which implies that there were large gains in productivity per head in agriculture.[4] It is

[1] E A Wrigley, *People, Cities and Wealth. The Transformation of Traditional Society*, Oxford, forthcoming, ch 5, 'Some reflections on corn yields and prices in pre-industrial economies'.

[2] The issue has attracted a vast literature. There is a useful set of recent essays on the subject to be found in R I Rotberg and T K Rabb, eds, *Hunger and History. The Impact of Changing Food Production and Consumption on Society*, Cambridge, 1985.

[3] C G A Clay, *Economic Expansion and Social Change: England 1500–1700*, 2 vols, Cambridge, 1984.

[4] E A Wrigley, 'Urban growth and agricultural change: England and the continent in the early modern period', *Journal of Interdisciplinary History*, XV, 1985, pp 683–728.

also probable that over the period as a whole yields per acre roughly doubled, a notable achievement in itself, but all the more so if labour inputs were increasing very little. England proved adept at avoiding the kind of difficulties over declining marginal returns which Ricardo was later to specify so firmly.[5] While it is true, of course, that volume V of the *Agrarian History* covers only the central half of this longer period, it forms part of a series covering events from the pre-Roman times to 1939, and much that happened in 1640–1750 needs to be considered in a longer perspective if its significance is to be appreciated.

Such wider issues have always received a good deal of attention and it would have been valuable to have had them reviewed in the light of the empirical findings brought together in volume V. In addition, the arguments and evidence marshalled by Jones and John, the careful empirical yield studies of Overton, and the econometric work of Crafts and more recently Jackson, all represent work carrying important explicit or implicit inferences for the period 1640–1750.[6] Jackson's work is too recent to have been used in the volume, and parts of the relevant writings of Crafts and Overton are also of recent date, but such modes of argument if not their particular formulations could have been considered.[7]

Second, and perhaps in part because of the lack of a wider perspective, some topics were treated only in passing when their importance suggests that a fuller and more formal treatment was called for. It is surprising, for example, that enclosure is not treated at greater length. It has long been a major element in the discussion of early modern English agriculture, and much land was enclosed between 1640 and 1750.[8] The assessment of the significance of enclosure is very problematic. Even its definition has remained controversial, but, if only because of the importance which has at times been attributed to it, it appears to justify explicit discussion.

There are other topics which were relatively neglected. Rural society in the seventeenth and eighteenth centuries is sometimes depicted as moving from a situation in which the land was worked by husbandmen and yeomen to one in which the characteristic English system of landlord, tenant farmer and labourer was the norm. This is a caricature of a much more complex reality, but one whose limitations might have been re-examined in the light of recent research.[9] Some illuminating work has been published in recent years on related topics. For example, the history of the institution of service in husbandry throws much light on the changing nature of social structure in the countryside, and on the characteristic career pattern of the agricultural labour force.[10] Female participation in the agricultural labour force, and the conventions regarding the sexual division of farm work is a topic of importance which might have been addressed with advantage.[11] And, reverting to an issue

[5] D Ricardo, *On the Principles of Political Economy and Taxation*, ch 2 'On rent', in *The Works and Correspondence of David Ricardo*, ed P Sraffa with the collaboration of M Dobb, I, Cambridge, 1951.

[6] See for example, the pair of articles, E L Jones, 'Agriculture and economic growth in England, 1600-1750: agricultural change', and A H John, 'Agricultural productivity and economic growth in England, 1700–60', *Journal of Economic History*, XXV, 1965, pp 1–18, 19–34; M Overton, 'Estimating crop yields from probate inventories: an example from East Anglia, 1585–1735', *Journ of Econ Hist*, 39, 1979, pp 363–78; N F R Crafts, 'Income elasticities of demand and the release of labour by agriculture during the British industrial revolution', *Journal of European Economic History*, 9, 1980, pp 153–68; R V Jackson, 'Growth and deceleration in English agriculture, 1600–1790', *Econ Hist Rev*, 2nd ser, XXXVIII, 1985, pp 333–51.

[7] For example, Deane and Cole reviewed the implications of estimates of eighteenth-century population growth, food imports and exports, changing consumer preferences, yield trends, *et sim* in P Deane and W A Cole, *British Economic Growth 1688–1959: Trends and Structure*, Cambridge, 1962, pp 62–75.

[8] See especially J R Wordie, 'The chronology of English enclosure, 1500–1914', *Econ Hist Rev*, 2nd ser, XXXVI, 1983, pp 483–505. Wordie estimates that almost twice as much land was enclosed in the seventeenth as in the eighteenth century (table 7, p 502).

[9] This debate received a new injection of vigour in the form of the controversy following the publication of R Brenner, 'Agrarian class structure and economic development in pre-industrial Europe', *Past and Present*, 70, 1976, pp 30–74.

[10] A Kussmaul, *Servants in Husbandry in Early Modern England*, Cambridge, 1981.

[11] There is a valuable review of the literature on this topic as well as an important new contribution to the topic itself in K D M Snell, *Annals of the Labouring Poor. Social Change and Agrarian England, 1660–1900*, Cambridge, 1985, chs 1 and 6.

which illustrates the value of keeping in mind international comparisons, any evidence or reflections concerning the significance of the ratio of livestock to land would have been welcome. The work of O'Brien and Keyder, for example, suggests that this may have been one of the distinctive advantages of English agriculture compared with French at a later date.[12] Whether it was a difference of long standing; and whether any change in the ratio was associated with rising yields via better manuring, or with gains in labour force productivity via the substitution of animal for human muscle, may be problems of great difficulty in the present state of knowledge, but such issues deserve to be identified and discussed if only to serve as a stimulus to future research.

Third, one might question where the boundaries of the 'agrarian' circle should be drawn. If it is proper to devote much space to rural building, may it not also be proper to consider other aspects of rural society? For example, the mode of operation of the poor laws was of the greatest importance to members of rural society, a large proportion of whom were likely either to be in receipt of relief or contributors to the rates. A substantial number at different points in their lives fell into both categories. The nature of what is sometimes termed the moral economy of rural society in different parts of England constitutes another topic of the highest interest, especially to those who view this as a feature of rural life subject to gradual erosion with the spread of capitalist attitudes into local economies. Much has been written over the period during which this volume was in preparation about the rise of proto-industry in rural areas. It is reasonable to doubt the final value of some formulations of the concept of proto-industry, both as to its attributes and genesis, but the concept has been so widely used in writing about the development of rural society that it is curious to find that it figures so modestly in this volume. A similar comment might be made concerning the value of the distinction between 'open' and 'closed' parishes. And if rural housing is a topic demanding attention, why not, say, rural dress and rural diet?

Criticism of the type in which I have indulged is easily made and often most unfair. For unimpeachable reasons the original planning of collective volumes often proves impossible to implement. And an already massive work would have grown to monstrous proportions if it had been extended to cover a fuller range of topics. There are great riches within the covers of the two volumes. Even if there are some sins of omission, there are few of commission. Yet an enterprise like the *Agrarian History* is apt by its prestige to colour the general perception of the nature of a subject and its agenda for a generation. In this regard volume V is not an unqualified success. Somewhere between Tudor times and Regency England, English agriculture succeeded to an extraordinary, perhaps unprecedented degree in raising productivity per acre while simultaneously also greatly increasing output per head.[13] It is doubtful whether any other country in Europe came close to matching this achievement. For reasons which Adam Smith, writing towards the end of the period, was to set out so forcefully, success in the countryside had much to do with the increasingly remarkable and ultimately revolutionary change in train elsewhere in the economy.[14] Volume V covers the central

[12] P O'Brien and C Keyder, *Economic Growth in Britain and France, 1780–1914*, 1978.

[13] It is probable that both cereal yield per acre and output per head roughly doubled during this period. There is a convenient survey of eighteenth-century yield estimates in M Turner, 'Agricultural productivity in England in the eighteenth century: evidence from crop yields', *Econ Hist Rev*, 2nd ser, XXXV, 1982, pp 489–508. Earlier data are also briefly surveyed. See also the further debate in M Overton, 'Agricultural productivity in eighteenth-century England: some further speculations', and M Turner, 'Agricultural productivity in eighteenth-century England: further strains of speculation', both in *Econ Hist Rev*, 2nd ser., XXXVII, 1984, pp 244–51 and 252–7. On output per head, Wrigley, 'Urban growth and agricultural change', esp pp 698–702 and 717–21.

[14] See, for example, A Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, ed E Cannon, 1904, pp 430–1.

section of this long period, but somehow the wider issues which are of such compelling interest, and which should inform the discussion and description contained in the regional and topical chapters, do not come into focus. We have some excellent portraits of trees but the wood is only visible intermittently.

Notes and Comments

WINTER CONFERENCE, 1986

As is now customary the Winter Conference was held jointly with the Historical Geography Research Group of the Institute of British Geographers. Five papers were delivered on the theme of 'Agricultural Censuses and Statistics'. The first, by J J N Palmer, on 'Computer Mapping of Domesday England', was given to the accompaniment of two microcomputers which generated maps of Domesday England. B A Holderness followed with an assessment of 'The Political Arithmetic of Arthur Young', while after lunch M E Turner spoke on 'The 1801 Returns and the Livestock Enquiries' and R J P Kain reported on his 'Atlas and Index of the Tithe Files of England and Wales'. The final paper of the day — B M Short, 'Lloyd George's Domesday: the Countryside of England and Wales in 1910' — discussed a source with which most of the audience were unfamiliar yet which seems to have enormous potential for the study of the Edwardian countryside. The Society is grateful to Dr Michael Turner for organizing a successful conference and for arranging the 1987 Winter Conference which will be held on Saturday 5 December.

SPRING CONFERENCE, 1987

Full details and a booking form for the 1987 Spring Conference, which is to be held in the Northern Counties Hotel, Portrush, Northern Ireland, should be inserted in this copy of the *Review*.

ANNUAL GENERAL MEETING, 1987

The 35th Annual General Meeting of the Society will be held at 9.00 am on Tuesday 7 April 1987 at the Northern Counties Hotel, Portrush, Northern Ireland. Nomination forms for officers and members of the Executive Committee should be inserted in this issue of the *Review*. Nominations should reach the Secretary *no later than* Tuesday 1 April 1987. It was agreed at the 1986 AGM that those nominating candidates for the Executive Committee should supply a twenty-word statement about each candidate to be circulated at the AGM of the Society.

WOODLANDS IN BRITISH HISTORICAL GEOGRAPHY

The summer residential conference of the Historical Geography Research Group of the Institute of British Geographers will be held in Oxford from 3 to 5 July 1987. Further information is available from Dr M Williams, School of Geography, Mansfield Road, Oxford OX1 3TB.

A Model Farm at Scarthingwell near York in 1793 and in 1986[1]

By RACHEL HELLIER and BARBARA HUTTON

TOWTON and Scarthingwell lie at the western edge of the Vale of York where the magnesian limestone hills begin to rise out of the plain. The land to the west is good loam on limestone, while to the east there is first fen, then strong clay, and further away still a subsoil of running sand. In the late eighteenth century Admiral Lord Hawke, victor of Quiberon Bay in 1759, and in 1766 First Lord of the Admiralty, took the title of Baron Hawke of Towton from the estates he had built up in this area. His son the second Baron Hawke who succeeded to the title in 1781, was interested in the technicalities of modern farming and built a handsome new home farm at Scarthingwell. This was visited by the authors of the *General View of the Agriculture of the West Riding of Yorkshire* in 1793,[2] who described it in the following terms:

> Here we beg leave to notice the suite of farm offices lately erected by the Right Honourable Lord Hawke, which affords an elegant pattern for his neighbours. His Lordship has built for his own use a large farmyard, conveniently formed and situated, with a threshing machine, a mill for grinding rape cake, stables for 25 horses and 32 oxen, besides cowsheds, barns for hay, corn etc. The whole is surrounded by walls 9 ft high, and divided by the barns, stables etc. into four yards, two of which have ponds, besides the pumps. The stables for the horses are placed on the East and West sides of the farmyard, which is free from buildings on the South, and sheltered on the North by the barn and oxhouses, which separate it from the principal stackyard. This yard is divided from the two others by open hay barns, tiled with slate eaves and with chimnies also of brick to let out the steam. The average of the boarded granaries amounts in length to 160 feet, and in bredth to 21 feet. There are trap doors in them to let down the corn, when sacked, into waggons which may be loaded and locked up at the same time. The corn in the yard is stacked on wooden frames placed on stone pillars and capes. When we saw it, Lord Hawke proposed to make further improvements on it, and to build a house for his steward. The whole indeed forms a complete, elegant and convenient suit of farm offices, covering from one to two acres of ground, and is in every respect becoming a nobleman who justly considers the cultivation of the earth as the most useful and necessary of human employments.

The central part of the Scarthingwell Home Farm buildings and the farmhouse, are still standing and in use as a working farm, though not in the way they were used in 1793 (Figure 1). The buildings are designed in a striking architectural style characterized by Diocletian windows, circular bullseye vents, and round arches all framed in solid limestone blocks standing proud of the ashlar walling (Plates I and II). The central building along the north side of a double foldyard is the great barn, some 40 feet long roofed in twelve bays, with two waggon entries under porches, and at each end a stable for sixteen oxen with crop storage space above. The oxhouses extend into outshots on each side separated from the central space by square stone piers; at the east end the oxhouse has been added into the main floorspace of the barn in recent times. Over the two waggon entries there were originally large pigeonhouses; Mr Pick, the present owner, remembers the last of these collapsing some fifteen years back, and it was found to have a substantial deposit of dung on the floor, the production of which was its original purpose. Brick piers that supported the weight of the pigeon houses have been removed to make larger entries to the barn.

[1] This research was begun by Rachel Hellier before her untimely death in 1984. The photographs were taken by her.

[2] By Rennie, Brown and Sheriff, for the Board of Agriculture, here referred to as *General View*. Extract quoted begins on p 10.

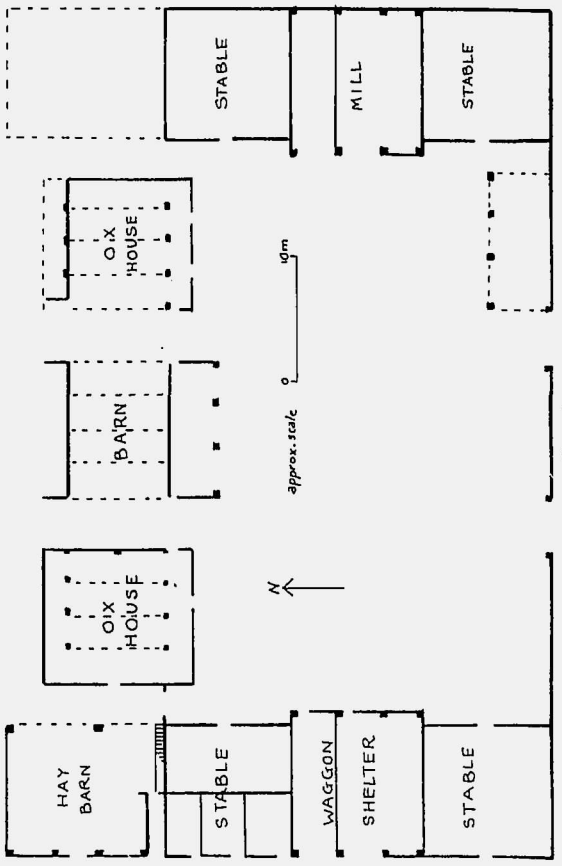


FIGURE I
Sketch plan of the farm layout in 1980–86

The double foldyard has along the west side a granary over two stables flanking a waggon shed with arched doors, and the trapdoors by which sacks of corn could be delivered from the granary to the waggons below are still there. The granary itself, however, is roofed with low tiebeams which would seriously impede anyone trying to carry a sack, and the only way up into it was by a steep wooden stair, now replaced by rather less steep concrete steps, though it would still be difficult to hump a heavy sack up them. At the north end of this range is a hay barn, built of limestone where it could be seen, but with brick piers at the back; a further, narrower building to the north of the haybarn has collapsed and been cleared away.

At the east side of the double foldyard is a range of building exactly similar in appearance, the centre of which contained a horse wheel behind three open arches. The heavy beam that held the axle of the wheel remains but there is no indication which way the drive ran. Presumably on one side of the wheelhouse was the mill, for threshing and for cutting cattle cake, whilst the rest of the range was stabling. There is a similar granary above this range. At the north end there was a further building which was destroyed by fire some time ago; this would have been the second haybarn. Between the two and behind the great barn was the stackyard, enclosed along the north side by a high stone wall. The staddles mentioned in the *General View* are still lying in the corner of the stackyard or used as ornaments in the farmhouse garden.



PLATE I
Cattle shelter against the south wall in the southeast corner, 1980



PLATE II
Inner face of the east range, with one stable converted as a dwelling and shelter removed, 1981

There was a third foldyard to the west of the double yard, walled on the north and south sides and enclosed on the west by the farmhouse and its garden. The farmhouse is large but designed in a quite plain style without the architectural detail of the farm buildings. To the east of the double yard there was a fourth foldyard, of which nothing now remains except a ditch beyond its eastern boundary.

The first edition Ordnance Survey map, at a scale of six inches to the mile, which was surveyed in 1845–6, shows a plan of the farmstead at Scarthingwell which does not differ greatly from the present (Figure 2). There are two cattle shelters against the south wall of the double yard, one of which remained up to 1980 and is shown on the 1986 plan. On the OS map there is a north-south building partly dividing the double yard into two. The narrower extension at the northern end of the west range is shown, and this is matched in the east range. At the southern end of the east range there is a building running east, probably on the southern boundary of the lost fourth yard. There is a building against the north wall of the great barn, just where one would expect to find a wheelhouse for threshing, and presumably it is possible that there were two horse wheels, one adjoining the barn for threshing and another under the east granary for processing cattle feed. There is also a narrow building running north from the eastern oxhouse. No buildings are shown on the north sides of yards three and four, nor on their outer sides, so perhaps these yards were enclosed only by walls and the 1845–6 map shows all the buildings that were originally erected.

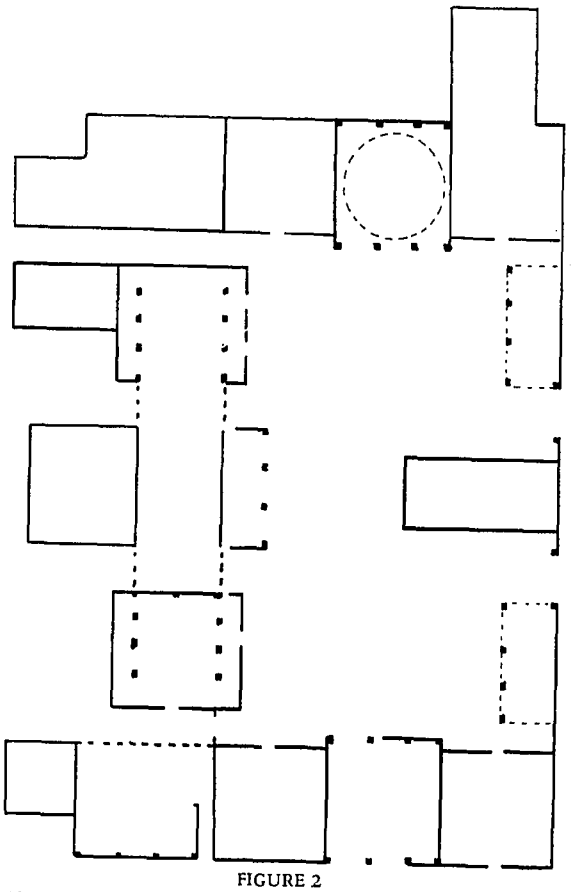


FIGURE 2
Sketch plan to same scale of layout, derived from 1st edition OS map, 1845–6

As well as the description of the buildings quoted above, there is in the appendix of the *General View* a further account of Scarthingwell, this time concerned with the system of farming:[3]

> Waited upon Mr Beck, steward to Lord Hawke, upon his estate of Scarthingwell and Towton. His Lordship has taken about 1600 acres into his own hands; and is very properly putting it into good order by fallowing, manuring and laying parts of it down with grass seeds, with a view to let it in proper sized farms to substantial tenants. Besides the manure raised on this farm, his Lordship has expended yearly above £300 in purchasing manure, principally dung, from the towns and villages in the neighbourhood and by water from Hull, York etc.
>
> The soil upon Lord Hawke's estate is of many different kinds: it is good loam in general: there is also clay upon limestone; strong clay upon blue till; hazle earth upon sand; and about 50 acres of moss or peat earth. About a fourth part is kept in pasture, though less pasture in general is kept. Lord Hawke cultivates sainfoin, red clover and trefoil, with white clover and hay seeds. He bred 350 sheep last year, and has this year increased his breeding ewes to 440; they are of the Oxford and Gloucestershire polled breeds; they have a cross also of the Bakewell and Fowler breeds; and the wethers are fed off when shearing at 38 shillings

[3] p 44.

[£1.90] each. He folds his ewes always from Mayday to Michelmas. He feeds also a few Scotch and Irish cattle.

The general rotation of crops is turnips, barley, clover and wheat. His plan now adopted, is to sow half his clover land with 12 pounds of red clover per acre; to mow it once, and then feed it. The other half is sown with 6 lb of white clover, 3 lb of rib-grass and 6 lb of trefoil per acre, and fed but not mown. By this rotation of crops, red clover is sown but once in 8 years on the same land. His plan is to lay 150 acres with sainfoin, the seed of which he sows with his barley; and has sometimes sowen it on a clean fallow, when the ground laid down with sainfoin would have been broken up for wheat had it been sown with clover, he breaks up an old, worn-out pasture ground [instead] and sows it in the spring following with oats; after which it is fallowed, and falls regularly into course, instead of the ground sowen down with sainfoin. The manures used are rape-dust, pigeon, farmyard and bought dung, soot, rape and bone-dust. Lord Hawke ploughs with two oxen abreast, without a driver, and sometimes with horses, but depends principally, and almost entirely, upon oxen for his ploughing and harrowing. His land in hand is all inclosed; inclosures vary from 8 to 30 acres. There are some pastures from 5 to 8. We think small arable enclosures hurtful in a corn country; and Lord Hawke is altering the size of his fields from 15 to 20 acres. Mr Beck is of the opinion that inclosing is very beneficial, and can never decrease population. Lord Hawke has land in a common field, for which he only got 5*s* 9*d* [29p] per acre, and can let the same land, when it is now divided and inclosed, at 20*s* [£1]. Wages are high; house servants cost, in board and wages, £30 p.a. Draining is much required here; but for want of a law to oblige neighbours to clean out their contiguous ditches, it cannot be done to advantage; although Lord Hawke is attempting it, and has induced many to drain with him. Paring and burning are practised on old grass land, and thought an excellent method of breaking up all coarse sward. Lord Hawke approves of it on low grounds, but on high ground thinks burning unnecessary, and rather detrimental.

The home farm itself, now called Old Hall Farm and owned by Mr G Pick, in 1986 had 200 acres which is much less than Lord Hawke had in hand in 1793, but the earlier figure of course included land being improved before letting to tenants. The rest of the former Hawke estate is no doubt now divided into independent farms; for example, Mr Pick's brother farms from a steading adjoining Old Hall Farm on the west, with limestone buildings that could be of a very similar date, although vernacular in style and not designed by an architect. In the village of Towton there is at least one house architect-designed in exactly the same style as the buildings at Scarthingwell Old Hall Farm, which must also be part of the former Hawke estate.

Mr Pick at present grows some 140 acres of wheat and barley, 25 acres of rape, 20 of sugar beet and the rest of his land down to peas. He fattens a score of beef cattle, Hereford × Friesians. For this the original buildings are wholly inappropriate. The great barn is a machinery store, though until the pigeonhouse, supported on its brick piers, was removed there was not room to get the larger machines into the barn. The lofted west end is practically useless, and the east end has been converted by removing the oxhouse and opening the whole space up. The remaining oxhouse is used for cattle, as are the stables and the space in the east range where the mill once was. The granaries are useless, except for miscellaneous storage, and their floors are no longer sound. One end of the eastern range, however, has been converted sympathetically into an attractive modern dwelling for Mr Pick's assistant.

In the double foldyard there is a small pole barn, filling about half the open area, and a large modern pole barn, partly enclosed, has been built in the stackyard. The haybarn is also used for baled straw.

Naturally these large, stone-built and pantile-roofed buildings are very expensive to maintain as well as being inconvenient; but Mr Pick appreciates their outstanding historic interest as well as their handsome appearance, and is therefore prepared to make do with them as best he can.

No other farm in the West Riding is described in so much detail in the *General View*, and it is particularly fortunate that so much of this one has survived to be compared with the original description.

Acknowledgement
I am very indebted to Mr G Pick, the present owner, for showing me the farm and explaining it to me.

Agriculture and Society in Early America

By JAMES T LEMON

A PERUSAL of the last fifteen years of *Agricultural History*, this journal's American counterpart, would almost lead one to believe that agriculture in the colonial period never existed! Few articles on the period spanning nearly two centuries have appeared since papers from the 1967 Colonial Agriculture Symposium were published in 1969. A limited number of important studies have appeared elsewhere in a variety of forums, especially the leading period journal, *The William and Mary Quarterly*. The few agricultural historians dealing with the era apparently have decided to seek debate and recognition there, rather more than with the scholars writing in *Agricultural History* with its traditional stress on the nineteenth-century midwest and south. The Director of the Institute of Early American History and Culture, the *William and Mary Quarterly*'s publisher, has recently called for greater interest in practices of farmers on the land. Certainly what, how and when people did work on the land remains somewhat opaque. A recent overview of 'The Domestic Economy' has pointed to gaps and contentious issues.[1]

Perhaps one reason for the relative neglect of agriculture has been a persistent sense among many that before 1790 or at least 1750 particularly in the northern colonies, little of importance happened. Certainly, most farmers and their families carried on low-risk diversified production, much for home consumption using primitive tools in a kind of shifting cultivation, referred to below as extensive long fallow agriculture. By later standards, external markets were limited. Local and intraregional trade was modest. Aggregate growth was largely a consequence of the expansion of settlement inland, rather than by intensive convertible husbandry, urbanization, manufacturing, or agricultural production for overseas. The most highly commercialized areas, the Chesapeake and South Carolina, experienced little urbanization in the usual sense of concentrated non-agricultural populations. The rates of development (intensification) by nineteenth-century measures were minuscule if at all and almost too subtle to detect. But, while per capita growth was tiny, after the trying initial formative years, all colonies established a high material standard of living in world terms. Overall, production exceeded need, though the poor in cities and even some rural areas bore the brunt of unfair distribution.

This general statement obscures the intensity of recent debate on the social and economic context of farming. While it is true that actual practices of husbandry and production have received too little attention, much energy has been thrown into an argument on how 'modern' these farmers were. On the one side, some social historians have stressed familial and communitarian values and action and hence have tended to ignore the material, and have played down commercial activity. In the most recent studies, the question has not been so much

[1] Since the Symposium discussion, aside from reviews, only fourteen articles dealing with the period up to about 1790 have appeared in *Agricultural History*, averaging about one per year. This is not the base for debate! Indeed, a symposium on 'Science and Technology' in volume 54, 1980, did not include the colonial period. Thad W Tate, 'The Perception and Modification of the Natural Landscape: An Interpretation of Early American Agriculture and Forestry', Paper, Organization of American Historians, 1984. Richard B Sheridan, 'The Domestic Economy', in Jack P Greene and J R Pole (eds), *Colonial British America: Essays in the New History of the Early Modern Era*, Baltimore, 1984, pp 43–85. The several state and regional historical journals also should be consulted.

whether people traded or not, since it has been accepted that they did, but whether the quality of trading differed then from later 'capitalism'. Increasing recognition of a far greater degree of local trading of goods and labour than earlier scholars noted has brought this to the fore: were these interchanges within a reciprocal community model or within an abstract or at least external market mechanism? Probably the answer is both, though how much 'personal' or 'impersonal' remains problematic. Like some historians in Britain who have sought the grand transition from feudalism to capitalism within a narrow range of time, several in the United States have argued for a transition from the 'independent mode production' or the like (not feudalism, which never appeared firmly through institutions in America) to 'capitalism'. Historians, it seems, are anxious to find a decisive deep change and then initially through *mentalité* rather than institutionally. If 'America was not born free, rich, and modern', when did it become so? If 'far from turning into modern entrepreneurs, Puritan men became rural patriarchs in towns remarkable for their cohesion and stability', how did their descendants somehow become capitalists? Many brief periods have been put forward as the time of massive change in consciousness: 1680s, 1740s, 1790s and even 1830s. While it can be argued that in all these periods substantial changes did occur in certain regions, these writers beg the question of what conditions in prior periods set up changes. Surely 'before' there were some entrepreneurs and 'after' some who were not particularly economistic.[2]

Perhaps clearer perspectives will be reached through assessing early American experience with British developments between 1600 and 1800. Debates on *how* American and British societies differed are only beginning — as indicated by a conference in September 1985 bringing together scholars from both sides of the Atlantic in Williamsburg, Virginia. The long-term sense that America was 'new' and 'exceptional' is likely to be challenged at least to a considerable degree through such a process. Obviously differences will remain but perhaps the traditional isolationist stance of many Americans, including scholars, will be modified. Britain and Europe have to be seen as a context for events and processes in the New World, in the setting of political and military agendas and of a price system affecting all rural inhabitants of America.

Quantitative analyses will not resolve these large problems. But over the past fifteen years or so, seemingly intractable data have yielded results through diligent numerical probing together with judgements based on qualitative material. Certainly we do know more about regional differences, population, production, consumption, trade and growth, even while some issues remain contentious.

Regions and population

From the tiny early seventeenth-century seaboard settlements, early Americans had spread over a vast area by the time of the war of independence: strung out along more than 1000 miles of the Atlantic seaboard from Maine (then still part of Massachusetts) to Georgia and contiguously up to 200 miles inland. Beyond the Appalachians, occupation of the Ohio Valley was beginning. In the eighteenth century a ten-fold increase in population was matched by a ten-fold expansion over the land. After some unsuccessful attempts, several colonies had been permanently established in the early seventeenth century by the English (Virginia 1607 and in New England from 1620 onward, Maryland (1634)), the Dutch (New Amsterdam in 1625, Hudson Valley, and the Delaware Valley — all taken by the British in 1664), the French (Port Royal 1607 and Quebec 1608), and the Swedes in the Delaware Valley. By the time Pennsylvania

[2] The quotations are from the most recent affirmation that the colonial era was different (at least in New England), Joyce Appleby, *Capitalism and the New Social Order: The Republican Vision of the 1790s*, New York, 1984, p 7.

was established in 1681, with the exception of Georgia, all of the thirteen colonies that collectively declared independence in 1776 had been partly, some even largely, settled. Besides, the sugar islands of the West Indies and Newfoundland cod were very important to the material needs of Britain. In turn, by 1775, the colonies together took the bulk of British exports.

By then, the population in what became the United States had risen to about 2.5 million (about a fifth or so black), or about a third of that of England and Wales, whereas in 1700 the 250,000 reached only about 5 per cent. (By 1800 the United States population would reach a level of about half of Britain's, 5.3 to 10.5 million.) Obviously, then, population growth in America was much faster than in Britain, but the ever-expanding area was much vaster than in the tight little island so that densities remained much lower. Even small Rhode Island did not exceed the more populous parts of England. As for urban populations, after the initial establishment of cities anchoring the lifelines to the metropolis, the urban population as a proportion fell until the late eighteenth century, when the pace of commerce and manufacturing quickened. By then, the points of original settlement had grown and most had coalesced well before this time.[3]

Because of the melding of the colonies, regionalizing the mainland is a complex task. From a strictly political/administrative perspective the lines were reasonably clear if often controversial; the colonies were discrete. But economic, social and cultural dimensions complicate discussions. A gross distinction made in the mid-eighteenth century based on slavery and climate was North and South, then more finely, New England, the Middle Colonies, and Upper and Lower South. The relevance of the term 'Middle' especially is still being debated, though most economic discussions would stress the importance of New York and Philadelphia as centres, with East and West Jersey divided between the two. Also, New York's regional economic power gradually penetrated to the east as far as the Connecticut valley, undermining the notion of New England as a homogeneous region too. The South is divided into the Tidewater Chesapeake tobacco region of Virginia and Maryland, and the Lower South growing rice/indigo focused on Charleston and Savannah. North Carolina eventually shared something of both. But the back-country of the Southern colonies from Maryland to Georgia took on a different quality, as much Pennsylvanian because of mixed agriculture as Southern. Slaves, who began to replace English indentured servants rapidly after 1680 on the tidewater, were less obvious in the backcountry. Further, after 1750 wheat production, strongly identified with Pennsylvania, penetrated not only the backcountry but the Chesapeake area. After 1780, when short-staple cotton production began to expand rapidly to the west in the Deep South, Virginia was transformed from a tobacco colony to a staple producer of wheat and slaves for King Cotton. These developments re-accentuated differences between north and south.[4]

[3] US Bureau of Census, *The Statistical History of the United States for Colonial Times to the Present (Historical Statistics of the United States, Colonial Times to 1970)*, New York 1976, Series Z. Jim Potter, 'Demographic Development and Family Structure' and Richard S Dunn, 'Servants and Slaves: The Recruitment and Employment of Labor', in Greene and Pole, *op cit*, pp 123–94. Robert V Wells, *Revolutions in Americans' Lives: A Demographic Perspective on the History of Americans, Their Families, and Their Society*, Westport, Conn, 1982. But recently, 'The Population of the United States 1790: a Symposium' in *William and Mary Quarterly*, 3rd series, 41, 1984, pp 85–135, calls into question the accuracy of the 1790 census and therefore by extension estimates of earlier population levels, particularly of national origins.

[4] Robert D Mitchell, 'The Formation of Early American Cultural Regions: an Interpretation', in James R Gibson (ed), *European Settlement and Development in North America: Essays on Geographical Change in Honour and Memory of Andrew Hill Clark*, Toronto, 1978, pp 66–90 and 'American Origins and Regional Institutions: the Seventeenth-Century Chesapeake', *Annals of the Association of American Geographers*, 73, 1983, pp 404–20. Douglas Greenberg, 'The Middle Colonies in Recent American Historiography', *William and Mary Quarterly*, 3rd series, 36, 1979, pp 396–427 (hereafter *WMQ*, all 3rd series). Robert J Gough, 'The Myth of the Middle Colonies', *Pennsylvania Magazine of History and Biography*, 107, 1983, pp 393–416. James Lemon, 'Spatial Order: Households in Local Communities and Regions', in Greene and Pole, *op cit*, pp 86–122.

Thus, critically analysing the regions leads one into more complicated patterns, indeed, so much so that the notion 'culture hearth', promoted by cultural geographers, is hard to maintain: they can obscure and hinder assessment. Nonetheless, time-honoured regional categories, such as the Home Counties and the Midlands, are hard to displace and probably never will be.[5]

Settlement and local communities

The occupation of the New World by Europeans was of epic proportions. Whatever compelled Englishmen and others to cross the Atlantic—whether by the build-up of population after the Black Death and so the colonization of frontiers within Britain and Europe, the Reformation, the secularization of monasteries in England, nationalism, the rapid increase of capital in the form of gold and silver from what became Latin America or other grand forces—led to a new and vaster frontier. The farming populations followed in the wake of adventurers seeking quick returns: the farmers could obviously not gain as much, but they established enduring societies.

The new frontier expanded at the expense of the indigenous peoples, who came to suffer the indignity of being called Indians after a people half way around the world. Not only that, the various Indian nations slowly at first but inexorably lost their homelands. Even before permanent settlers touched land, European diseases had taken a devastating toll. Recent estimates raising the native population north of the Rio Grande by a factor of ten to ten million (or more speculatively to nearly twenty million) just before contact obviously suggest an even greater decimation by disease than hitherto assumed. That only 10 to 20 per cent remained undoubtedly made the task of settling far easier than it would have been with all native populations intact. The settlers saw the land as essentially there for the taking. Many Indian old fields were present when the English arrived in Virginia and Massachusetts. The natives were demoralized even further by the white man's insistence on holding the land in freehold by individuals and working it by households rather than by communities, no matter how radically sectarian. Although the natives continued to trade with one another and with Europeans, indeed increasingly so as Europeans sought furs, they could not quite bring themselves to accept goods in monetary terms. Even their wars were not based on territories or the defeat of the enemy, but on symbolic status. But they did contribute the great gifts of maize, beans, squash, pumpkins and by the early eighteenth century via Europe the potato, all, except the last, better adapted to the hot summers than some European crops.[6]

The settling of Europeans undertaken by various agencies such as companies and proprietors resulted in somewhat different modes of settlement, but fundamentally all were based in private ownership. In New England, while the fishing ports initially were largely made up of males, rural settlement was mostly composed of fairly comfortable nuclear families, with very few servants, from East Anglia and some other English regions. By contrast, the Virginia Company and its agents gathered up the wandering surplus males of the West Country from the streets of Bristol and shipped them to the Chesapeake. Until a more vigorous economy and a slower growing population in England were better able to absorb the poor later in the seventeenth century, these men provided the bulk of the labour there. For most in the early years it was a short-lived experience. After 1680 slaves came to replace servants though not totally in Virginia, Maryland and South

[5] Wilbur Zelinsky, *The Cultural Geography of the United States*, Englewood Cliffs, NJ, 1973.

[6] James Axtell, *The Europeans and the Indians: Essays in the Ethnohistory of Colonial North America*, New York, 1981. Henry F Dobyns, *Their Number Become Thinned: Native American Population Dynamics in Eastern North America*, Knoxville, 1983, argues for the higher population level. Daniel K Richter, 'War and Culture: The Iroquois Experience', *WMQ*, 40, 1983, pp 528–59.

Carolina. The sexes gradually became demographically balanced. The Middle Colonies were largely settled by families. In Pennsylvania many Scottish and Germans (most in families) came under indentures. One recent measured estimate suggests that half of whites coming to British North America (including the Caribbean) — about 350,000 — between 1580 and 1775 arrived as servants. About 257,000 slaves reached the mainland by 1780, only about a sixth of those hauled to the West Indies. But West Africans on the mainland had a far greater chance of survival: by 1775, they had nearly doubled to 575,000 whereas on the sugar islands they added up to only a quarter of those brought over.[7]

A majority of settlers occupied enclosed farms as nuclear families under fee-simple tenure. Collective ownership and management were rare. This is not surprising. In England by 1600 just under a half of the land had been enclosed, by 1700 nearly three-quarters. In America the process was instantaneous or nearly so. The long-term trend in a socially-stickier Britain could much more easily be achieved in America. This could hardly be otherwise after John Winthrop, Governor of the Massachusetts Bay Company, promised late in 1629 just before the great migration: 'every adventurer to enjoye his freedom and lande, and to trade in any commoditye at his pleasure', even while enjoining these individualists to live in harmony. If the leaders were allowed independent action then others took the opportunity too. In fact, even before then, the Pilgrims of Plymouth had dispersed from their village and abandoned communally-managed agriculture: 'to have compelled would have been thought a great tiranie and oppression'. In 1640 the General Court of Massachusetts repealed an unenforceable 1635 law requiring farmsteads to be located within a half mile of the meeting house. In practice, it took some years to enclose holdings by fences, while blazes on trees or stone monuments marked metes between bounds. (Fencing of cultivated fields to keep out wild and domestic animals was, of course, urgent.) Those relatively few places with home lots and/or open fields and common pastures eventually experienced dispersion. Yet it is to New England where scholars have looked for strong community life among the Puritans.[8]

In New England, the distribution of land by local officials often continued by lot, though often considering the degree of affluence, moral uprightness, and need of settlers. The leaders of some towns (the equivalent of parishes or townships) more than others seem to have maintained greater control by giving land in sequential allotments. Where this resulted in scattered patches of land, considerable pressure built up for trading to consolidate holdings. Holdings would seem to have been irregular, except along rivers, notably the Connecticut, where orderly long lots were surveyed. The French practised the same along the St Lawrence, the Detroit and lower Mississippi rivers.[9]

Speculators controlled some of the settling, as in the whole of eastern Connecticut. A dozen large entrepreneurs with capital were among the first 'adventurers'. At least in the case of Springfield, on the Connecticut River, William Pynchon and then his son John even

[7] Daniel Vickers, 'The First Whalemen of Nantucket', *ibid*, pp 560–83. David G Allen, *In English Ways: The Movement of Societies and the Transferral of English Local Laws and Custom to Massachusetts Bay in the Seventeenth Century*, Chapel Hill, 1981. James Horn, 'Servant Emigration to the Chesapeake in the Seventeenth Century', in Thad Tate and David Ammerman (eds), *The Chesapeake in the Seventeenth Century: Essays on Anglo-American Society*, Chapel Hill, 1979, pp 51–95. Dunn, *op cit*. David W Galenson, *White Servitude: An Economic Analysis*, New York, 1981.

[8] J R Wordie, 'The Chronology of English Enclosures, 1500–1914', *Econ Hist Rev*, 2nd ser, XXXVI, 1983, pp 483–505. Massachusetts Historical Society, *Winthrop Papers*, 5 vols, Boston, 1929–1947, vol 2, p 176. Darrett B Rutman, *The Husbandman of Plymouth: Farms and Villages in the Old Colony, 1620–1692*, Boston, 1967. John Demos, *A Little Commonwealth: Family Life in Plymouth Colony*, New York, 1970. Joseph Wood, 'Village and Community in Early Colonial New England', *Journal of Historical Geography*, 8, 1982, pp 333–46. Lemon, 'Spatial Order', *op cit*, p 92.

[9] Philip J Greven, Jr, *Four Generations: Population, Land, and Family in Colonial Andover, Massachusetts*, Ithaca, NY, 1970. Bruce C Daniels, *The Connecticut Town*, Middletown, Conn, 1979.

set up a fur-trading 'company town' where up to half the men were tenant-clients. Whether this was exceptional or not remains to be seen. Quite a contrasting picture at Dedham not far from Boston, with a greater amount of poorer land, has been presented. A more egalitarian pattern of resident freeholders seemed to hold. In commercially-minded Essex County north of Boston well-endowed settlers leased land to tenants, most of whom came after the great migration to Massachusetts tapered off after 1640. If in the seventeenth century servants numbered less than 5 per cent in rural Essex, tenants may have run as high as a quarter. Leaseholding followed 'the most modern of English practice' — written contracts unencumbered by manorial complications. Some leases were developmental, that is, tenants were required to improve properties, often with some measure of compensation. Many of their sons would become independent freeholders in newly settled areas, fewer near home. Although for over a decade Dedham has prevailed as the stronger image of local seventeenth-century New England, a more diverse pattern is beginning to emerge.[10]

In other colonies distribution and ownership system varied somewhat, though within a fee-simple framework. In Virginia, initially, large entrepreneurs settled the less affluent largely through a head right system whereby they acquired 50 acres for every settler they brought over. Surviving servants themselves received 50 acres. Maryland was similar. By the eighteenth century speculators organized settlers, though people often went in groups to new areas. As elsewhere, overlapping initial surveys often led to the courts. More broadly, the litigiousness of the English found a ready home in America for lawyers, a reality persisting there to the present perhaps even more than in other English-speaking countries. Tenancy among whites, though they still composed a minority, became widespread, many living in permanently mean circumstances as on Maryland's proprietary lands. The attempt to organize the Georgia colony of 1730 on communal lines failed quickly.[11]

In Pennsylvania William Penn, the proprietor, sold land assigned by his land office to 'First Purchasers' and companies in England who in turn speculated by organizing migrants to settle. During the first twenty years, while Penn's plea to settle in villages went unheeded, an orderly generally contiguous pattern of settlement occurred. Settlers moved into regular, already laid out, mostly rectangular townships and holdings. This geometric pattern presaged the late eighteenth- and nineteenth-century federal survey template for rapid settlement of the trans-Appalachian West. But from 1700 to 1785 settlement was the responsibility of speculators or their agents, and then often of nuclear households or groups. Complaints were frequent of individuals squatting without title. By 1735 one of the Penns' surveyors was mystified by the archaic prescription of settling: 'I ... observe that Lands are to be laid out according to the method of townships, to which method I am ... [a] stranger.' The townships were set up *after* settlement rather than before. As a result, the spatial pattern of lots became much less orderly as the first individuals

[10] Stephen Innes, *Labor in a New Land: Economy and Society in Seventeenth-Century Springfield*, Princeton, 1983. Kenneth A Lockridge, *A New England Town: The First Hundred Years, Dedham, Massachusetts, 1636–1736*, New York, 1970. Allen, *op cit*. Daniel Vickers, 'Fathers and Sons: Farm Labor in Essex County, Massachusetts, 1630–1675', *WMQ*, forthcoming. Lucy Simler, 'Tenancy in Eighteenth-Century Chester: The Best Poor Man's County', *WMQ*, forthcoming.

[11] Kevin P Kelly, '"In Dispers'd Plantations": Settlement Patterns in Seventeenth-Century Surry County, Virginia', in Tate and Ammerman (eds), *op cit*, pp 183–205. Robert D Mitchell, *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville, Va, 1977, chapter 3. Gregory A Stiverson, *Poverty in a Land of Plenty: Tenancy in Eighteenth-Century Maryland*, Baltimore, 1977. Carville V Earle, *The Evolution of a Tidewater Settlement System: All Hallow's Parish, Maryland, 1650–1783*, Chicago, 1975. Harry Roy Merrens, *Colonial North Carolina in the Eighteenth Century: A Study in Historical Geography*, Chapel Hill, 1964. Peter O Wacker, *Land and People: A Cultural Geography of Preindustrial New Jersey: Origins and Settlement Patterns*, New Brunswick, NJ, 1975. D W Meinig, *The Shaping of America: a Geographical Perspective on 500 Years of History*, I, *Atlantic America, 1492–1800*, New Haven, 1986.

coming into a new area surveyed the best land usually with access to a stream. Township lines frequently followed topographic features rather more than arbitrary lines as earlier. As elsewhere hiving off from older settlements often occurred in groups, frequently of the same religious congregation. Many Pennsylvanians were soon off to the valley of Virginia, because speculators and the large holdings of other settlers prevented denser settlement.[12]

Tenancy was frequent in the Middle Colonies particularly on the better lands. During the latter part of the eighteenth century in southeastern Pennsylvania, according to tax lists, nearly a third of householders were tenants at any one time. Recent work suggests even higher levels of non-landholders unrecorded by tax collectors. Aside from single freemen, those without land were composed of a few substantial tenant farmers with considerable security, smallholders who had to sell their labour, and married 'inmates' living in with householders. The last — non-householders — only came to be recorded in tax lists about 1750, though court records are revealing some earlier. New analyses of Pennsylvania (and Massachusetts) also suggest a good deal of bioccupational activity or by-employment, such as weaving and cabinet-making among most residents very early, probably from the beginning of settlement. Perhaps only a small minority were exclusively farmers. In New York's Hudson Valley tenancy was widespread on the few huge patroons (estates) of Dutch and English landlords. There it was generally a benign institution. Overall, given the availability of land even if by no means free, few landlords could enforce rack-renting, no more than they could in the nineteenth-century mid-west. On the other hand, the minority of poor tenants with little land contributed to more concentrated milling and factory operations beginning in the late eighteenth century. Still, that wages were persistently higher than in England, suggests that labour was relatively scarce (a long-held view), yet also that it was sought vigorously, notably at times of sowing, harvesting and threshing (a frequently unrecognized view).[13]

Over such a vast area, holdings varied considerably in size — from tiny plots to vast speculative tracts. But what is striking in Pennsylvania at least was the limit put on partitioning as reflected in population densities and recorded by probate courts. Recent work confirms earlier analyses that most of the first settlers took up 300 to 500 acres. These were then split into 80 to 125 acres for the second generation (whether by gift before death or by will). Most of the third generation would have to go off to the frontier, though often to land earlier bought by their fathers or grandfathers. In a real sense, land was banked for future generations, though often it was rented out in areas accessible to markets. It is indeed interesting that the populations of townships in southeastern Pennsylvania levelled off notably after 1760. Besides, neighbours appointed by county probate courts were reluctant to 'spoil the whole' through partition after a certain level. This clearly social concern has been referred to as a sign of the 'lineal family', that is, that parents were preoccupied with handing on property to their children. (While it has sometimes been argued that in New England, partitioning occurred to a great degree, population densities in 1790 would appear to have been no higher there than in Pennsylvania.) These procedures help to explain why over the long run population increases were matched by an equal proportion of land — as noted earlier, about a ten-fold increase of both between 1700 and 1775. It also helps to explain the

[12] James T Lemon, *The Best Poor Man's Country: A Geographical Study of Early Southeastern Pennsylvania*, Baltimore, 1972, New York, 1976, chapters 2, 4. Mitchell, *Commercialism and Frontier*, *op cit.*

[13] Lemon, *Best Poor Man's Country*. Simler, *op cit.* Eric Nellis, 'Labor and Community in Massachusetts Bay: 1630–1660', *Labor History*, 18, 1977, pp 538–42. Sung Bok Kim, *Landlords and Tenant in Colonial New York: Manorial Society, 1664–1775*, Chapel Hill, 1978. Paul W Gates, *Landlords and Tenants on the Prairie Frontier: Studies in American Land Policy*, Ithaca, NY, 1973.

relatively large proportion of holdings remaining in forest in older settled areas and, as we will see, the relatively low intensity of agriculture up to about 1790.[14]

Although settlement was dispersed, local communities were formed, overseen by counties. If varied they were recognizably like those in England such as Terling in Essex. Despite varied English origins, much has been made of localities in early New England organized into municipalities known as towns and congruent with the religious congregation worshipping in a central meeting house. Most scholars have characterized civil life as quiet and orderly during the first two generations, with élite selectmen exercising a minimal civil authority. By the eighteenth century strife has been seen as more common.[15]

Religious life has been considered tranquil in earlier years of these homogeneous towns, even though the prevailing Calvinism meant some were excluded from membership. The chief crises in the earlier years of Massachusetts revolved around those espousing unorthodox notions, and some were expelled. Most scholars have argued for a 'declension', that is a retreat from zeal after the first generation as Puritans became Yankees, as the communities' spirit fell before a growing individualism. A major step in that direction was taken early in the 1650s when the 'half-way covenant' was adopted allowing children of saints, but without a religious experience, to become members of the congregations. Later shifts, most pointedly in the Salem witch trials in 1692, have been seen as yet another stage in the working toward commercialized individualism as the Atlantic and seaport trading life penetrated the rural towns. One can argue, however, for a weakening of communitarianism as soon as the initial need for public participation in the orderly setting up of the towns and indeed for commerce was fulfilled. Therefore, the view of people living in 'Christian Utopian Closed Corporate' peasant communities accepted widely only a decade or so ago considerably overstates the reality for most or indeed any towns. Households and local government may have exhibited a strong patriarchal tone, but that quality persisted long after the seventeenth century. Networks beyond town boundaries, county courts mediating local disputes, and intra-regional trade have become more apparent in recent writing, undercutting the notion of closed homogeneity.[16]

In the Middle Colonies distinctive national and religious communities appeared, some initially coincident with minor civil divisions. But in West Jersey and Pennsylvania, local Quaker hegemony generally broke down quickly as English and Welsh Anglicans, Welsh Baptists, then Scotch-Irish Presbyterians, German Lutherans and Reformed, Mennonites and Amish and others arrived. Local township government did not remain strong after counties were granted administrative as well as court powers by the legislatures. Much of community life revolved around the various congregations, in many townships creating diverse networks. The more exclusive groups with tighter discipline and providing mutual aid (but not living collectively), seem to have been more economically successful

[14] Lemon, *Best Poor Man's Country*, chapters 2, 3. 'Lineal family', James Henretta, 'Families and Farms: *Mentalité* in Preindustrial America', *WMQ*, 35, 1978, pp 3–32, but who overstates its importance relative to economic institutions. Cf exchange between Henretta and Lemon, *WMQ*, 37, 1980, pp 688–700, and in my view some misplaced comments in T H Breen, 'Back to Sweat and Toil: Suggestions for the Study of Agricultural Work in Early America', *Pennsylvania History*, 49, 1982, pp 241–55. Population densities, Lester Cappon, Barbara Bartz Petchenik and John H Long (eds), *Atlas of Early American History: The Revolutionary Era, 1760–1790*, Princeton, 1976. But see note 3 above.

[15] Keith Wrightson and David Levine, *Poverty and Piety in an English Village: Terling, 1525–1700*, New York, 1979. Bruce C Daniels (ed), *Town and Country: Essays in the Structure of Local Government in the American Colonies*, Middletown, Conn, 1978. Lucy Simler, 'The Township', *Pennsylvania Magazine of History and Biography*, 106, 1982, pp 41–68, 46–53. Lemon, *Best Poor Man's Country*, chapter 4.

[16] Puritans and puritanism continue to be debated as in *WMQ*, 41, 1984, pp 3–61. The terms from Lockridge, *New England Town*. On courts, David Konig, 'English Legal Change and the Origins of Local Government in Northern Massachusetts', in Daniels (ed), *op cit*.

with more in the upper ranks and fewer of the 'poorer sort'.[17]

In the South, the Church of England was much more visible in the countryside than in the North, though pluralism increased especially through Baptist and then after 1750 Methodist vigour. Curiously, Maryland, granted to the Catholic Calvert family as proprietor, exhibited much the same quality as Virginia. The élite planters who gradually gathered more power were mostly Anglican and dominated parishes and county government. South Carolina was similar though the backcountries of all colonies were more populist. One great difference for the south was the presence of slaves after 1680, altering community relations especially in tidewater settlements. Although the vast majority of small farmers did not own slaves, they supported the rich in keeping blacks in line as a permanent underclass.[18]

Finally, regarding settlement and community, I have stressed religion strongly. The colonies were established at a time of high religious and national consciousness in Britain. The Pope may have been deposed as English society disengaged from Europe, but the fear of the papacy remained. Within this context theological and liturgical 'experimenting' became rampant. The resulting pluralism was taken to America where then and subsequently charismatic leaders promoted varieties of evangelicalism, yet had to tolerate one another as no denomination could maintain or achieve dominance. Rural communities experienced diversity of religion, pursued as much for emotional as for moral or theological reasons. A strong strand of religion stressing salvation still conspicuous today was, it seems, locked in at the beginnings of America.[19]

Agriculture and the rural economy

In the latter half of the eighteenth century, English travellers and indigenous reformers complained mightily of the sloppy agricultural landscape. Positive statements were few. After 1750 continuous cropping did become more common, but intensive convertible husbandry was to become widespread only after 1790 in long-settled areas. Productivity had been more than adequate in most areas within a relatively loose style of agriculture. Even the oft-cited New England agricultural 'crisis' in the latter half of the eighteenth century supposedly brought on by Malthusian pressure on an uninnovative agriculture is now being questioned. As in England, urban demands did eventually induce greater attention to practices, though mechanization and improved care of the land came slowly.[20]

Among the natives the dominant mode of agriculture was long fallow or shifting cultivation without livestock. As far north as Maine and the St Lawrence Valley, Indians had used this method, creating fields of up to 600 acres or more around their nuclear villages. By girdling, trees were killed. Around the dead trees, maize was sown in hills, followed by beans and squash. Tobacco was grown by some peoples. Eventually the fallen trees would be burned contributing potash and a further renewal of the soil. Even the addition of fish as fertilizer

[17] Essays in Michael Zuckerman, *Friends and Neighbors: Group Life in America's First Plural Society*, Philadelphia, 1982.

[18] Essays by William H Seiler, Lois Green Carr and Robert Wheeler in Daniels, *op cit*. Edmund S Morgan, *American Slavery — American Freedom: The Ordeal of Colonial Virginia*, New York, 1975.

[19] Far too little, American scholars have compared the religious and community experience of New Englanders with that of the English. See Michael G Finlayson, *Historians, Puritanism, and the English Revolution: The Religious Factor in English Politics before and after the Interregnum*, Toronto, 1983.

[20] William Strickland, *Observations on the Agriculture of the United States*, London, 1801; G Melvin Herndon, 'Agriculture in America in the 1790s: an Englishman's View', *Ag Hist*, 49, 1975, pp 517–31; G E Fussell, 'An Englishman in America in the 1790s', *ibid*, 47, 1973, pp 114–18; *American Husbandry*, Harry J Carman (ed), New York, 1939; Jared Eliot, *Essays on Field-Husbandry in New England and Other Papers* [1750s], Harry J Carman and Rexford Tugwell (eds), New York, 1934. Critics of 'crisis', Bettye Hobbs Pruitt, 'Self-Sufficiency and the Agricultural Economy of Eighteenth-Century Massachusetts', *WMQ*, 41, 1984, pp 333–64; Winifred B Rothenberg, 'The Market and Massachusetts Farmers, 1750–1855', *Journal of Economic History*, 61, 1981, p 312; Robert A Gross, 'The Problem of the Agricultural Crisis in Eighteenth-Century New England: Concord, Massachusetts, as a Test Case', paper, American Historical Association meeting, 1976, already versus his own (and widely and long held) view in *The Minutemen and Their World*, New York, 1976.

did not, however, prevent the decline of productivity over time. After several years, new fields would then be created. Eventually, perhaps owing as much to increasingly inaccessible wood supplies and waste accumulations, as to a total reduction of fertility, villages were moved. Villages held large tracts of land for hunting and fished the streams.[21]

In contrast to the Indian mode, the settlers replicated European livestock and crops, even while adding maize and other Indian plants, and methods. Whereas the natives had domesticated only dogs, beginning with the first ships, Europeans brought cattle, horses, pigs, sheep, goats and fowl. Settlers became far less reliant on game birds and animals and fish for meat. They could use dairy products and rely on oxen and horses for labour. Wheat, rye, oats, barley, flax, hemp, fruit, garden crops, and grasses were grown in the earliest settlements, though with varying success depending on climate and interest. As in Europe, women were responsible for the kitchen garden, fowl and milking, the men for the fields and most activities associated with livestock, whereas native cropping was largely in the hands of women, while men hunted (and fought). Even though the settlers adopted the sowing of maize in hills during much of the era, the ways did diverge.[22]

Although direct references to pre-1750 practices remain elusive, it does appear that settlers also adopted to a degree long fallow cultivation, albeit within private rather than communal holdings as among the natives. And many cattle, horses, and especially pigs became feral, nearly as wild as deer. Late nineteenth- and early twentieth-century accounts are based on hearsay as often as on documents. Heavy reliance has been placed on the biased travellers' accounts late in the eighteenth century and from inferences. A rare local statement in 1797 by a farmer in Thornbury Township, Chester County, only twenty miles from Philadelphia and first settled a century before, described to relatives in England the 'old method' before farmers stopped clearing 'fresh' land.

> Our land is mostly good, but we have dropped our old method of farming. We used to break up our fields in May, cross or stir them in August, and sow them with wheat and rye in September. This was done once in three or four years in rotation; in the intermediate spaces between they were pastured. The land would produce from twelve to twenty bushels per acre. This way was followed until the land ran out, as we call it. We planted corn, sowed barley, oats, and flax, likewise buckwheat, in small portions of land allotted for that purpose, which took the greatest part of our dung to manure it; our meadows got some, and we had very little left for our winter grain. We followed this old way until we could scarcely raise our bread and seed. But there is as much superstition in husbandry as there is in Politics or Religion, therefore those that broke off from the old rule were laughed at by those who were bigoted in the old way.[23]

Given the ability of Pennsylvania to export wheat and flour, this view seems overstated. But even so, other commentators noted that corn, hemp, flax, hops and

[21] William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England*, New York, 1983.

[22] Some works with at least some focus on agriculture, not noted elsewhere in these footnotes, include: Howard S Russell, *A Long, Deep Furrow: Three Centuries of Farming in New England*, Hanover, N H 1976, a rather unanalytical work, but bringing together a great deal of material; Carl Bridenbaugh, *Fat Mutton and Liberty of Conscience: Society in Rhode Island, 1636–1690*, Providence, 1974; Bruce C Daniels, 'Economic Development in Colonial and Revolutionary Connecticut: An Overview', *WMQ*, 37, 1980, pp 429–50; Douglas R McManis, *Colonial New England: An Historical Geography*, New York, 1975; Ulysses P Hedrick, *A History of Agriculture in the State of New York*, Albany, 1933; Herbert G Schmidt, *Agriculture in New Jersey: A Three-Hundred-Year History*, New Brunswick, NJ, 1973; Stevenson Fletcher, *Pennsylvania Agriculture and Country Life, 1640–1840*, Harrisburg, 1950; Paul G E Clemens, *The Atlantic Economy and Colonial Maryland's Eastern Shore: From Tobacco to Grain*, Ithaca, NY, 1980; Gloria L Main, *Tobacco Colony: Life in Early Maryland, 1650–1720*, Princeton, 1983; Max G Schumaker, *The Northern Farmer and His Markets*, New York, 1975; Laurel Ulrich, *Good Wives; Image and Reality in the Lives of Women in Northern New England, 1650–1750*, New York, 1982; Joan M Jensen, *Loosening the Bonds: Mid-Atlantic Farm Women, 1750–1850*, New Haven, 1986. The traditional works are Percy W Falconer and John I Falconer, *History of Agriculture in the Northern United States, 1620–1860*, Washington, 1925 and Lewis C Gray, *History of Agriculture in the Southern United States*, 2 vols, Washington, 1933.

[23] Thomas Cheyney to John Waldren in England, 26 October 1796, Chester County Papers, 1684–1897, Folder 183, Historical Society of Pennsylvania, Philadelphia, quoted in part in John S Futhey and Gilbert Cope, *History of Chester County, Pennsylvania ...*, Philadelphia, 1881, p 339. In same collection, folder 87, Robert Parke to Mary Valentine in England, 10 December 1725, describing some practices.

potatoes reduced the 'first fatness' of the soil, necessary because it was said wheat would run to straw, then for several years fall-sown wheat was broadcast. After harvest in late June or early July, livestock would graze on the stubble, weeds and if they were lucky on spontaneous white clover. After the land ran down it would be turned over to rubbish fallow for three or five years. Implying even longer fallows were references to 'sapling' land. Indeed, overall, wheat yields were noted by many at around 10 bushels to the acre, perhaps only half those of England. Presumably a similar path was followed with other crops, though maize was harder on the soil. Extensive occupation of ever more land was the basic reason: low population levels and hence low intensity of production on relatively large holdings.[24]

In the South, tobacco was even a harsher sapper of nutrients. In All Hallows' Parish, Maryland, tobacco land would be fallowed even longer; after three or four years of tobacco, followed by a year or two of corn, it would be allowed to stand until trees reached lumbering dimensions, that is, fifteen or twenty years in that area with a long growing season. The soil would be renewed by decaying leaves and by haphazard dunging.[25]

Livestock running loose in forest was described by commentators. Pigs, beef cattle, and even horses roamed the woods near settlements and on range land in the unsettled backcountry in the winter as well as summer. Severe weather in the north especially would cull the unhardy, suggesting not only low labour inputs but an abundance of livestock. Unfortunately, tax returns do not specify these as carefully as they do working horses, oxen, or dairy cattle. Pigs were not assessed, though they were recorded in estate inventories. How many ran 'wild' in the unsettled forests is anyone's guess.[26]

Low grain yields and large holdings with uncultivated tracts imply low labour and capital inputs but a strong desire for maintaining *large holdings*. Wheat yields averaging only 10 bushels to the acre, from one bushel sown, suggest as much. Although some leases specified the fertilizing of grain fields, it would seem that it was not often applied to grains or even tobacco. Large holdings and low population densities also suggest that there was little urgency to clear more than 20 to 50 acres at any one time. The movement to new lands by second and subsequent generations relieved the pressure. Tenants on small plots were a modest counter pressure. Assuming tax rolls to be more or less correct, the low densities of population by English standards after two or three generations of settlement (say five families per square mile) up to 1775, and the still extensive forest (even if not virgin timber on the best land) are understandable. Given the low level of markets relative to land potential, it is little wonder that intensification of holdings came slowly. It almost seems as though middle and upper rank landholders saw themselves as 'barons' over vast acreages whether cultivated or not, with a concern for providing for their offspring.

It would be a mistake, however, not to note points of intensification before 1750 in terms of land use and labour. On farms themselves, permanent garden plots and orchards, whose production is hardly ever calculated (nor can be easily), added to the abundant diversity of living though entailing hard work. By 1725 potatoes were firmly entrenched, undoubtedly helping the less affluent to eat well too. Irrigated meadows became common. Folding of sheep did occur. Market gardening, dairying and fattening of livestock developed around ports. Ignoring the whole farm, the fields

[24] Lemon, *Best Poor Man's Country*, esp. pp 169–76. The 1960s works of A H John, E L Jones, E Kerridge, G E Mingay provided useful points of comparison for my study. Cf Breen, 'Back to Sweat and Toil', *op cit*.

[25] Earle, *op cit*, pp 24–37, 127–31. Clemens, *op cit*, p 189.

[26] Earle, *op cit*, pp 120–6.

of tobacco in production themselves demanded high labour inputs. Perhaps the most important technical innovation occurred in rice production in South Carolina and adjacent Georgia and North Carolina. Perhaps, as recently argued, West African blacks taught English planters, most of whom came via Barbados, how to grow rice. By the mid-eighteenth century production was enhanced by flooding paddies by cleverly using the tidal flow of heavier salt water to push the lighter fresh water through the sluices. But rice and indigo acreages were small.[27]

At the end of the eighteenth century, the Chester County, Pennsylvania, farmer quoted above noted that a shorter sequence of three or four years developed, when wheat was sown no more than two years in succession, followed by a year of spring grain then fallow. Even though in the 1790s, according to some commentators, no clear rotation pattern had emerged and bare fallows remained common, intensification was becoming apparent. By then the more aggressive upper middle farmers had clearly introduced clover, then lucerne (alfalfa) into rotation systems. Clover replaced weeds as the ground cover and soil builder in wheat fields. Only then too were ploughs with iron-clad mould-boards introduced in any serious way. Before then, hoes and wooden ploughs ensured only shallow cultivation as holdings began to be subdivided further, woods diminished, and in the nineteenth century even disappeared from the best lands.[28]

Productivity and consumption have been measured though comparative analyses have been few. Perhaps the perception that early Americans had more than adequate foodstuffs, and therefore met no real problems, has dampened interest in household and regional needs and yields. Also the data, though abundant enough, is quite intractable. Estate inventories specify durables but cannot with full confidence be used to analyse food consumption, though providing clues to relative importance. Widows' portions specified in wills have been the basis of calculating consumption for some places in Massachusetts and Pennsylvania. The Mennonite decadents in the latter particularly were concerned with setting forth amounts of goods and services, especially food. They were probably over-generous, or perhaps expected their wives to sell surpluses. The recently-published 1771 Massachusetts valuation list has provided the basis for a more precise analysis of acreages and production, particularly in establishing minimum need. In the process, other estimates of consumption based on wills have been criticized, mostly as being overstated, though debate continues over the figures. Rare farm and shopkeeper account books and diaries are obviously useful for information and rough calculation. But they are few compared to the extant city merchants' records, themselves of some use in analysing rural trade. 'Living' farms, such as the National Colonial farm on the Potomac, Old Sturbridge in Massachusetts, and Ridley Creek in Pennsylvania, are breeding crops and livestock. Despite the difficulties of handling the data, that more scholars are now asking questions about diet and clothing, often associated with studying women's activities, is resulting in considerable analytical ingenuity. Although calculations still vary considerably, more precise regional comparisons are likely to follow.[29]

[27] On potato, 1683 [William Penn], 'Information and Direction to Such Persons as are Inclined to America', *Pa Mag Hist Biog*, 4, 1880, pp 332–3. Mary T Wilson, 'Americans Learn to Grow the Irish Potato', *New England Quarterly*, 32, 1959, pp 333–50. James M Clifton, 'The Rice Industry in Colonial America', *Ag Hist*, 55, 1981, pp 266–83. Henry C Dethloff, 'The Colonial Rice Trade', *ibid*, 56, 1982, pp 231–43. Daniel C Littlefield, *Rice and Slaves: Ethnicity and the Slave Trade*, Baton Rouge, La, 1981. Peter Wood, *Black Majority*, New York, 1974.

[28] Lemon, *Best Poor Man's Country*, chapters 7–8.

[29] Pruitt, 'Self-Sufficiency', *op cit*. Rothenberg, 'The Market and Massachusetts Farmers', *op cit*. Sarah F McMahon, 'A Comfortable Subsistence: The Changing Composition of Diet in Rural New England, 1620–1840', *WMQ*, 42, 1985, pp 26–65. Laurel T Ulrich, 'It "went away shee knew not how": Food Theft and Domestic Conflict in Seventeenth-Century Essex county [Massachusetts]', in Peter Benes (ed), *Foodways in the Northeast*, the Dublin Seminar for New England Folklife: Annual Proceedings 1982, Boston, 1984, pp 94–104. Other papers, including reports on archaeological excavations, tend to be less

What has emerged from analyses confirms earlier views of how much Americans continued European dietary preferences. Wheat, beef and pork were favoured, though in the farther south maize was of greater importance for human besides animal consumption. Even in New England, where wheat production was severely limited by disease, it was still preferred over rye and maize, and so was imported from the Middle Colonies for sale to the more affluent. The less affluent had to rely more on rye, peas and maize. While wool and flax were produced in the colonies, more British cloth and clothing was imported than earlier assumed.[30]

Durable goods carried an indelible English stamp. English regional styles had some effect; over time divergences occurred from Britain. A recent spectacular show in Boston of early New England material goods exuded a sense of continuity. But, as might be expected, wood played a much larger role in building materials and household goods than in England. Large tracts of seemingly endless forest were also kept for charcoaling in the gradually increasing iron industry, and for heating city houses, retarding the introduction of coal. Unlike those in Britain, the coal seams of Pennsylvania, too, were not nearly as accessible.[31]

satisfactory in dealing with diets. Ulrich's *Good Wives: Image and Reality in the Lives of Women in Northern New England, 1650–1750*, New York, 1980, is among the better of recent studies on women. Carole Shammas, 'How Self Sufficient Was Early America?', *Journal of Interdisciplinary History*, 13, 1982, pp 247–72. Winifred B Rothenberg, 'New Sources for Rural History: 1 Farm Account Books: Problems and Possibilities', *Ag Hist*, 58, 1984, pp 106–12.

[30] McMahon, *op cit.* Karen J Friedmann, 'Victualling Colonial Boston', *Ag Hist*, 47, 1973, pp 189–205. David Klingaman, 'Food Surpluses and Deficits in the American Colonies', *Jour Ec Hist*, 31, 1971, pp 553–69.

[31] Museum of Fine Arts, Boston, *New England Begins: The Seventeenth Century*, 3 vols, Boston, 1982. Discussed, John Demos, 'Words and Things: A Review and Discussion of "New England Begins"', *WMQ*, 40, 1983, pp 584–97. Also, for example, Henry Glassie, *Folk Housing in Middle Virginia: A Structural Analysis of Historic Artifacts*, Knoxville, 1975. Paul F Paskoff, *Industrial Evolution: Organization, Structure, and Growth of the Pennsylvania Iron Industry, 1750–1860*, Baltimore, 1980. Deborah Ducoff-Barone, 'Marketing and Manufacturing: A Study of Domestic Cast Iron Articles Produced at Colebrookdale Furnace, Berks County, Pennsylvania, 1735–1751', *Pa Hist*, 50, 1983, pp 20–37.

Reconstruction of activities of individual farms and farmers from archival material has been rare. Among the very intensive studies of rural Maryland undertaken in recent years, study of a set of accounts for Robert Cole's plantation in St Mary's County, Maryland, however, reveals how a middling to upper middling farmer owning 300 acres (with rights to more) rapidly transformed the land into a profit-making venture. Cole settled in 1652 or 1653. After his death in 1662, and at least until 1673, an administrator handled the estate for the benefit of Cole's children and thus kept close track of activities. During this latter decade, revenue from trade provided about 55 per cent of the farm's income, two-thirds of it from tobacco (which fluctuated considerably) and 20 per cent from local trade in livestock and livestock products and other produce. Much of the latter went to help newly-established farmers. Self-sufficient activities provided about 45 per cent of 'income', obviously a more stable source than uncertain tobacco. Like most farmers there and elsewhere, diversity of crops and livestock was the norm, though later stronger commercial diversification occurred on tobacco plantations. Close to 60 per cent of the farm's expenditures went to imported goods and services: English cloth, clothing and shoes, and for industrial servants. About 40 per cent was expended on local goods and services: wages to tailors, coopers, maids, carpenters, and in this case at least, education for the children. Taxes were virtually non-existent — a condition twentieth-century Americans believe should still be the case. Consumption while not extravagant was comfortable.[32]

Between 1652 and 1673 the value of Cole's

[32] Russell R Menard, Lois Green Carr, and Lorena S Walsh, 'A Small Planter's Profits: The Cole Estate and the Growth of the Early Chesapeake Economy', *WMQ*, 40, 1983, pp 171–96. The intensive probing by these and other scholars (following Aubrey Land's earlier studies) on Maryland has led to three Hall of Records Conferences in Maryland History, the most recent being on 'Maryland, a Product of Two Worlds', 1984. Also Paul G E Clemens, 'The Operation of an Eighteenth-Century Chesapeake Tobacco Plantation', *Ag Hist*, 49, 1975, pp 517–31. On diversification, Earle, *op cit.*

farm rose rapidly: between 1662 and 1673 at nearly 5 per cent a year. Wealth grew more quickly than income: savings and accumulation grew in this early phase in the life of the farm. Farm development was thus the major source of wealth generation. Probably after 1673 the rate slowed as the limits of growth were being reached: adding further livestock or even replacement of English goods contributed only marginally more to the wealth. In this situation, where technological change was minimal, income continued then to grow only slowly. Once the pioneering stage of farm-making was completed, more time was available for leisure. Low-risk diversified agriculture guaranteed a good life for most, allowed the pursuit of status including the buying of frontier lands (as was surely the case in the eighteenth-century Chesapeake), and not least helped to explain why intensive technical changes in land use were so slow in arriving. A relatively sloppy landscape was the reflection of the easiest lifestyle in the world. The wastefulness of American society today may well follow from the abundance of that colonial era. Only in the late eighteenth century was the region where Cole's farm was located under pressure: improved practices but more obviously increasing movement to the lands of the west helped many. To argue for Malthusian pressures — at least without considering the possibility of more intensive practices — is difficult. Poverty was a result of maldistribution within a social system stressing private property.[33]

Trade

In understanding the Cole farm, concern over the rapid early improvement is matched in interest by the amount of trade engaged in. As with land, no precise limits were placed by governments on individuals in trade, except briefly and unsuccessfully through fixed wages and prices in early Massachusetts and in some borough towns in all colonies. The limits were set by conditions rather more than by any moral or legislative injunctions. Undoubtedly, some resisted participation in the market, some lacked skill, thus lagged behind leaders, and probably only a minority sought to be 'maximizers'. A few can be labelled capitalists who gained a head start by bringing bargaining power with them in pounds or access to credit in Britain. Open environment or not, they could command respect from others when organizing trade, work and the distribution of land. But after the initial burst of activity in settling farms and towns, differential growth could not be great. Before the application of new technologies in manufacturing in the late eighteenth century, in the North only gradually did striking distinctions in wealth appear in rural communities. Not surprisingly, urban merchants did well. In the South, large planters often doubling as merchants, stood out.[34]

External trade has received far more attention than internal; only recently have scholars seriously turned to the latter. Debates continue over the relative importance of export staples as the engines of growth. Some would argue that staples led in creating overall productivity. But this remains moot.[35]

Regional distinctions in external trade emerged at the start of settlement, because exploitation lay at the base of mercantile empire building. By the years 1768–72

[33] Landscape, *ibid.* Also H R Merrens, 'The Physical Environment of Early America: Images and Image Makers in Colonial South Carolina', *Geographical Review*, 59, 1969, pp 530–56. T H Breen, 'Horses and Gentlemen: The Cultural Significance of Gambling Among the Gentry of Virginia', *WMQ*, 34, 1977, pp 239–57. Rhys Isaacs, *The Transformation of Virginia, 1740–1790*, Chapel Hill, 1982. On the present, David Lowenthal, 'The American Scene', *Geographical Review*, 58, 1968, pp 61–88.

[34] Nellis, *op cit*, pp 538, 542. Jon C Teaford, *The Municipal Revolution in America: Origins of Modern Urban Government, 1650–1825*, Chicago, 1975, on urban prices.

[35] Jacob M Price, 'The Transatlantic Economy', in Greene and Pole, *op cit*, pp 18–42. Sheridan, *op cit*, p 44. John J McCusker and Russell R Menard, *The Economy of British America, 1607–1789*, Chapel Hill, 1985. Cf. Review, Joseph Ernst, *Reviews in American History*, 14, 1986, pp 190–4. James F Shepherd and Gary M Walton, *Shipping, Maritime Trade, and the Economic Development of Colonial America*, Cambridge, Mass, 1972.

(based on the best data before 1776), the West Indies exported goods yearly of £4.75 sterling per capita, to £1.82 for the Chesapeake, £1.78 for the Lower South, £1.03 for the Middle Colonies, and £0.84 for New England. Sugar was thus relatively more important than Chesapeake tobacco, South Carolina rice and indigo, Pennsylvania wheat, and Maine forest products and fish. But if invisibles are added, New England and the Middle Colonies come off better: most towns and more merchants were in the North. The relative commercial weakness of rural New England was offset by Boston's carrying trade. But even in New England some agricultural specialization occurred early: horses from Rhode Island were sold to the West Indies, as were onions from Wethersfield on the Connecticut River below Hartford. Springfield and later Albany on the Hudson were fur trading centres until about 1700. The Connecticut Valley also became the major wheat belt of New England. The Middle Colonies exported wheat and flour and livestock very early to the West Indies and southern Europe, Pennsylvania gaining the lead. In the mid-1760s when Britain began to buy wheat and flour, mills concentrated at favoured locations with good falls of water, as on the Brandywine near Wilmington, Delaware, and then in Baltimore and Richmond as wheat production moved south into Maryland and Virginia. To Virginia's major export, tobacco, most of which was re-exported to the Continent, was also added the industrial crop, hemp, grown in the backcountry. Farther south, wheat expanded into the Carolinas, and besides rice and indigo, naval stores were sent from North Carolina pine forests.[36]

Far less is known of imports to this consumer society, though their value jumped markedly in the late 1740s, signifying a quickening of intensification. Many were tropical, East Indies or English luxuries: sugar, molasses, coffee, tea, silks, fancier millinery and hats, and books. But cheaper goods, probably more than earlier assumed from what we have noted above, came from Britain, such as cotton, woollen, linen cloths and clothing, shoes and iron products. Some of these already competed with domestic production and would confront it increasingly more after 1790. By 1720 slaves were dressed in cheap imported clothing. Imports reached America primarily through the large northern ports and Charleston, and in the Chesapeake especially in the eighteenth century through the large plantation owners who acted as 'urban' merchants or through Scottish factors who operated stores in the back-country. Imports put America's farmers into the transatlantic credit system focused on London, and increasingly also on Glasgow. They could not easily escape the clutches of the metropolis, even though by the end of the colonial era export staples composed a shrinking share of the total product. On the other side, Britain's dependency grew substantially as three-quarters of its exports by 1775 went to the colonies.[37]

Internal trade became gradually more vigorous though the times of intensification are not clear. By the late eighteenth century, regional economies were far more central than external connections in generating wealth, especially in the Middle Colonies. The topic has been neglected in the past, not only because measurement is difficult but probably because the image of subsistence farming has overwhelmed any sense that it could have been important. The unearthing of by-employment from early settlement onward suggests far more interaction. Even if most families engaged in farming, probably most also had members with other skills to offer others. Even affluent farmers engaged in other crafts, such as clockmaking or furniture making. Weavers were not all

[36] Recent interpretations by economic historians provide useful data, Edwin J Perkins, *The Economy of Colonial America*, New York, 1980, James F Shepherd and Gary M Walton, *The Economic Rise of Early America*, Cambridge, Mass, 1979.

[37] Shammas, *op cit.*

poor; some men organized others into shop production. Then in New England, Lynn became known for shoe production, though English clothing remained cheaper. Similarly, iron production though increasing, was hampered by more economic English goods. In Massachusetts small holders with inadequate lands to produce enough for their livestock and themselves traded their labour for goods with the more affluent, representing something like 'proto-industrialization'. In southern Maryland, the big planters, even while diversifying, acted as bankers and middlemen.

Recorded transactions everywhere were usually noted in monetary terms. Although interest was charged only on money loaned and credit terms were lenient, small farmers in some regions periodically agitated for paper money because their debt burdens were onerous. As today, the poorer one was, the more cash loomed in importance. The affluent had wider access to credit facilities. In Pennsylvania the public Loan Office after 1723 provided mortgage financing for the relatively affluent, probably contributing to capital investments. Open market commodity trading expanded. The mechanisms operating in market towns such as central markets and semi-annual fairs worked imperfectly as peddlers were hard to control and merchants dealt directly or through agents to farmers. In fact, by the late eighteenth century in Lancaster, Pennsylvania, fairs had degenerated into what were considered immoral social affairs. By the early nineteenth century they were resurrected by agricultural societies with an emphasis on promoting improved intensive farming. Prizes and showmanship encouraging quality marked fairs. The trading went among individual dealers, some of whom were agents of prosperous urban merchants.[38]

[38] Nellis, *op cit.* Earle, *op cit.* Pruitt, *op cit.* On Pennsylvania, work in progress by Lucy Simler and Adrienne Hood has been unearthing new concrete data on manufacturing. Stephanie Wolf, *Population, Community and Family Structure in Germantown, Pennsylvania, 1683–1800*, Princeton, 1976. Older overviews: Rollo M Tryon, *Household Manufactures in the United States, 1640–1860*, Chicago, 1917. Victor S Clark, *History of Manufactures in the United States*, 3 vols, Washington, 1929. Mary McKinney Schweitzer, 'Government, Capital Formation, and Colonial Economic Development: The General Loan Office of Pennsylvania, 1723–1755', Paper, Philadelphia Center for Early American Studies, 1983. John J McCusker, 'Sources of Investment Capital in the Colonial Shipping Industry', *Jour Ec Hist*, 32, 1972, pp 146–57. D C Coleman, 'Proto-Industrialization: A Concept Too Many', *Econ Hist Rev*, 2nd ser, XXXVI, 1983, pp 435–48. But probably manufacturing processes as described by Joan Thirsk, *Economic Policy and Projects: The Development of a Consumer Society in Early Modern England*, Oxford, 1978, may have been similar in early America, but as yet we do not know clearly. See Diane Lindstrom, *Economic Development in the Philadelphia Region, 1810–1850*, New York, 1978.

The pace of growth

White families 'almost certainly', according to one recent commentator, enjoyed the highest material standard of living in the world; probably one-fifth higher or more than the average family in England. Only a small minority failed to share in the largesse. Hence, by 1775 the gross product of America had reached 40 per cent of Britain's. One estimate puts the median per capita in the 1770s at £13, or about one-eighth of the present day. Even slaves earned (in kind) about £7. Food and energy were cheap. One-quarter of a typical family's income went to a more than adequate diet. Muster rolls of soldiers in eighteenth-century armies show that native-born Americans were taller than British soldiers, indicating a better protein diet. They were probably of higher social status than Britain's too. Working-class people in cities such as Philadelphia and Boston were closer to the edge of poverty owing to higher costs relative to incomes. As never before, in the 1760s and 1770s poverty stalked the streets of Philadelphia. Even before then, Boston paid a high cost for fighting Britain's battles to the north: widows there lived in poverty over several decades after 1740 when the city's economy was less vibrant than earlier.[39]

Regional wealth patterns showed marked disparities if slaves are considered. Accord-

[39] Perkins, *op cit.* Walton and Shepherd, *Economic Rise.* Fred Anderson, 'A People's Army: Provincial Military Service in Massachusetts During the Seven Years War', *WMQ*, 40, 1983, pp 499–527. Gary B Nash, *The Urban Crucible: Social Change, Political Consciousness, and the Origins of the American Revolution*, Cambridge, Mass, 1979.

ing to a recent analysis, in the era of independence per capita non-human wealth amounted to £36.4 sterling in the South, £36.4 in New England, and £40.2 in the Middle Colonies. But taking only free whites and adding slaves and servants to the value, the South gained a substantial edge, to £60.2. The relative differences did not change significantly over time. By 1775 landed gentlemen, such as Thomas Jefferson and George Washington, had achived a material status higher than merchants in the northern cities and all but the greatest gentry and merchants in Britain. The slaves, 90 per cent of the half million living in the South, fared materially almost infinitely better than those in the Caribbean, where the death rate was enormous. Material security could not, of course, compensate for their lack of status.[40]

The pace of economic development remains problematic as it does for Britain, but the arguments for these centuries revolve around subtle differences. America was growing largely by extension — by the population expanding over a wider territory with only modest technical and capital inputs. A recent survey on Britain suggests that acceleration was more gradual in the eighteenth and into the early nineteenth centuries than earlier estimates had proposed, and agricultural growth was probably greater before 1760 and less after than previously proposed. Nonetheless, a 'quickening' if not a 'take-off' occurred in the 1780s and 1790s. In the 1790s Americans too followed the same pattern of more rapid growth leading to another major shift in the 1840s when steam, railways and urbanization were the key ingredients.[41]

Before 1790, the picture is hazier. One view would argue for growth only by extension, another for modest per capita increases with periods of stagnation which varied regionally — the South between the 1680s and 1720 and in New England especially after 1740. But a number of writers speak of a quickening generally in the late 1740s, because of trade, a degree of urbanization in the backcountry of most provinces, and the first signs of concentrated and larger-scale manufacturing. But only in the 1790s would urban population begin its sustained increase overall, with technical improvements such as elevators and conveyors in flour milling, the cotton gin, and New England, New Jersey and Pennsylvania textile factories. Then the United States would be setting the stage for catching up to Britain, and within an economy looking more and more inward and less outward. For the colonial period as a whole, there may have been an increase of 0.5 per cent per annum in wealth, following one analyst, although 0.2–0.3 per cent yearly increase in income over 150 years seems more likely. But all calculations are suspect. As noted earlier, in an environment where the most rapid growth of wealth occurred on individual farms during the first decade or so, perhaps the best indicator is to look at the times of most rapid immigration and then the times of rapid establishment of second and third generation families on the land. Attempting to isolate the latter would not, to say the least, be easy, since so little is known precisely on internal movements. Rapid immigration in 1620–40 to New England, New York and the Chesapeake and 1680–1700 to Pennsylvania and South Carolina, however, contributed to the rapid growth over the whole region.[42]

[40] Alice Hanson Jones, *The Wealth of a Nation To Be: The American Colonies on the Eve of the Revolution*, New York, 1980. Jones, *American Colonial Wealth: Documents and Methods*, 3 vols, New York, 1977. But see Carville Earle review, *Annals of Scholarship*, 1, 1980, pp 107–17, who criticizes severely her approach and conclusions. Also James Henretta, 'Wealth and Social Structure', in Greene and Pole (eds), *op cit*, pp 262–89.

[41] Perkins, *op cit*. Walton and Shepherd, *Economic Rise*. N F R Crafts, 'British Economic Growth, 1700–1831: A Review of the Evidence', *Econ Hist Rev*, 2nd ser, XXXVI, 1983, pp 177–99.

[42] On mid-century, Marc Egnal, 'The Economic Development of the Thirteen Continental Colonies', *WMQ*, 32, 1975, pp 191–222. Joyce Appleby, 'Liberalism and the American Revolution', *New England Quarterly*, 49, 1976, pp 3–26. J E Crowley, *This Sheba, Self: The Conceptualization of Economic Life in Eighteenth-Century America*, Baltimore, 1974. On 1790s, Walton and Shepherd, *Economic Rise*, chapter 9. Appleby, *Capitalism and a New Social Order*.

The long run

Intensification of agricultural practices finally became more pronounced, it would appear, in the late eighteenth century. Mechanization of agriculture would only appear significantly a half century later. The workings of colonial agriculture thus still remain somewhat of a mystery though we clearly know a good deal more about wealth, crops and rural life than we did in 1960 or so.

How can we fit the farmer's experience into a longer perspective? Passing frameworks such as 'traditional' and 'modern' or Tonnies's 'gemeinschaft-gesellschaft' will not do, nor really will the transition from feudalism to capitalism, even with, as some have argued for America, an intervening stage of an 'independent mode of production'. Certainly over the long run, the expansion of capital and its increasing velocity occurred and the more complex instruments of exchange and bookkeeping became more widespread. But probably today there is relatively no more cash in circulation than there was then. Bills of exchange and bookkeeping debts are still with us one way or another. Money has not really changed its quality, despite the arrival of formal banking in America in the late eighteenth century and in Britain a century before. My own sense is that the scholars promoting deep or grand transitions see only 'capitalism' today and that reciprocal relationships have dissolved before the onslaught. Searching once again for a mythological 'golden age of homespun', as did early twentieth-century historians, will hardly do. Who can now say when capitalism, if that is the correct term, began?[43]

Some current interpretations of Britain stress continuity of institutions, values and *mentalités* since at least the Black Death and even earlier. American development has to be recognized as part of British development. The war of independence itself obviously has to be seen as part of that: Americans disliked taxes (even if not in the slightest burdensome, except in New England, when Britain fought wars, but on the other hand compensated by British military spending) but without representation they liked them even less. The early American experience was born out of an expanding nationalistic, anti-continental, anti-Catholic and empire-building Britain. Within that context adventurers sought their fortunes by exploiting the New World. Even if many settlers were not aggressive profit seekers, they were led by those who sought status through exploitation. Most seem to have sought independence from what they thought were the tight reins of communal institutional life. Their religion and their descendants' religion continue to stress individual renewal parallel to economic freedom. In my *Best Poor Men's Country*, I described early Pennsylvanians, whatever their religious and ethnic stripes, as being liberal, that is stressing individual property rights: they and their offspring have defended that liberalism in a tenacious conservative fashion. Crèvecoeur's famous late eighteenth-century characterization of the American as the 'new' man resonates to the present, even as the power of corporations and of government has grown.[44]

What can be pursued within this overall picture is not to look for one major exclusive change but rather to see long cycles. Given current economic difficulties, Kondratieff fifty-five year waves are back in fashion. Many scholars identify four turning points to rapid growth within capitalist development in the West: 1780–90s, 1845–57, 1896–1913, 1940–57, all followed by a gradual downswing as investment relatively weakened and returns diminished. Usually these jumps have been connected with

[43] Lemon, 'Spatial Order', *op cit*. See also fruitless polarized debate between ideologues — of Marxian and free enterprise persuasions. Rona S Weiss, 'The Market and Massachusetts Farmers, 1750–1850: Comment' and Winifred B Rothenberg, '. . .: Reply', *Jour Ec Hist*, 43, 1983, pp 475–80.

[44] Michel-Guilliaume Jean de Crèvecoeur, *Eighteenth-Century Travels in Pennsylvania and New York* [1801], Percy S Adams (ed and transl), Lexington, Ky, 1961, p 32.

technological and organizational breakthroughs in production. Urbanization was both a consequence and a factor for change. Whether a 'fifth Kondratieff' is in the offing for the West through electronic information systems or the like is moot. What can be suggested is that the period 1600 to 1800 probably can be put into the long wave pattern: in the 1740s overseas trade quickened, in the 1680s–90s the slave trade increased tobacco production in America. Of course, these are harder to detect than the subsequent 'quickenings' or 'take-offs'. They are, I would suggest, because the long run of 500 years saw a slow rise to the dramatic reordering of rural to urban in the nineteenth century. If Britain reached its relative peak about 1850, America did about 1900. Since then, decline has set in, though obscured by the latter's military strength. In retrospect, structuring time this way may help if regional differences are accounted for. Farming over the centuries from the colonial family farm and the commercial south through the 'freehold empire' of the nineteenth-century midwest and antebellum plantations to increasingly corporatized control today can be understood within such a framework, as indeed can the politics of sharing power and wealth.[45]

[45] See bibliography in Peter Hall, 'The Geography of the Fifth Kondratieff', in Peter Hall and Ann Markusen (eds), *Silicon Landscapes*, Boston, 1985.

Annual List and Brief Review of Articles on Agrarian History, 1985*

By RAINE MORGAN

OUTSTANDING among this year's articles are contributions by leading scholars on the grand theme of population and economic growth. Many were inspired by Wrigley and Schofield who provide an account (197) of the philosophy and intellectual origins which underpin their own attempt to reconstruct modern population history. Anderson (1) offers a critical appraisal of the assumptions, the data and the research designs employed by Wrigley and Schofield. A main concern is that aggregative analysis masks important differences at the regional and community level, and he argues that research should now be focused less upon quantitative national data and more upon the family, marriage and human response to economic change. This latter approach is adopted by Levine (135) who argues that the changing nature of the family economy during industrialization affected quite radically the marriage market, household formation and fertility trends. Thus, for more than a century after 1700, the dominant family work unit was composed of all its members, and the prospect of earning removed the prudential check on marriage; but thereafter reliance upon the male breadwinner encouraged postponement of marriage and a curb on family size. Jackson (116) offers a detailed study of a group of contrasting communities in south-west England to assess the degree of association here between economic development and growth of population. Although employment opportunity was indeed linked to high fertility through early marriage, migration was also found to be an important variable. The central role which historians have assigned to agriculture in explaining England's industrial rise is challenged in a number of articles. Jackson (115) provides a new index of agricultural production between the Restoration and the French Wars based upon a study of population, real wages and price trends. The index locates a period of marked growth up to 1740, but thereafter agriculture clearly failed to respond to pressures of population increase as production slowed and even stagnated. Two new sectoral price indices for the period 1660 to 1820 have been constructed by O'Brien (160) in order to calculate how far productivity increases in farming boosted home demand for industrial goods. He finds that neither the faltering advance in productivity nor the limited reallocation of labour to urban employment had much impact, while the rise in agricultural prices actually dampened demand. The achievements of the classical agricultural revolution are also questioned by Thomas (218) who considers how England attained industrial supremacy despite the fact that from 1760 farm production failed to keep pace with growth of population. The explanation he suggests lies in her food imports, mainly from Ireland, which by the 1840s accounted for one sixth of food supplies. In a comparative study of urbanization in England and continental Europe Wrigley (244) shows how trends can be used to measure growth in agricultural productivity. He calculates that output per head in England roughly doubled between 1600 and 1800 and he explores the distinctive features of England's preindustrial economy

* Publications are dated 1985 unless otherwise noted. References to articles or off-prints should be sent to the Bibliographical Unit, Institute of Agricultural History, University of Reading.

which lay behind her achievement. Lindert (136) applies statistical analysis to Wrigley and Schofield's population data to test the classical Malthusian belief that population growth depressed the real wage. Results argue that increased numbers had a direct impact on prices and only indirectly affected real wage levels. In his own statistical analysis of the wage and population data Lee (134) makes an important distinction between short, medium and long term trends since 1540 and considers factors which may have shaped them.

There are thin pickings for prehistorians. Ward (227) warns that the attractions of some marginal areas to past agriculturalists should not be underestimated. A study of low grade common land in Wales reveals that even in recent history it had sufficient potential to justify sustained use and improvement. The debate over how far man was responsible for environmental change continues. Sturludottir and Turner (214) discuss evidence in pollen profiles from a site in the northern Pennines which suggets that mesolithic populations were managing woodland vegetation throughout the four centuries or so represented. And although climate may have contributed, man's impact appears to have been chiefly responsible for the elm decline here. The Scottish evidence for vegetational change during the mesolithic is examined by Edwards and Ralston (70) who stress that relative to other causal factors the degree of human influence still remains uncertain, while Maguire (145) provides new data on the vegetation of Dartmoor which suggests that it was almost entirely forested up to 5000 bp. Cairns have been associated with funereal practices but Yates (245) has surveyed groups of the smaller monuments in Scotland and argues that they resulted from field clearance. This sometimes became necessary when continuous tillage caused soil deflation and impoverishment which brought stones to the surface; or clearance could be undertaken for sporadic upland cultivation at times of land pressure. A theory on the origin of the plough is put forward by Pryor (182). He reasons that it was invented where large domestic animals were found, where population had reached a certain density and where 'plow-positive' staples such as wheat or rye were native.

For the medieval period Tuck (224) examines the effects of the Anglo-Scottish wars on the northern rural economy and suggests that the area showed more resilience than has been supposed and in certain respects even benefited. The level of war damage in the Midlands during Stephen's reign is reconsidered by White (235). He concludes that while the high levels of tax-exemption here resulted more from administrative problems than devastation, the picture of a 'wasted Midlands' cannot be entirely dismissed. Historians have been hindered by a lack of direct evidence on medieval demographic change, but Poos (177) brings to our notice a large body of information deriving from the frankpledge system which can reveal movements over the long term. Analysis of the Essex data sets for example not only confirms severe mortality during the 1315–17 period and the Black Death but also shows a prolonged decline during the later Middle Ages, so that by the sixteenth century local population was below half the level of two centuries earlier. Langridge (130) uses a variety of documentary sources to trace the demographic trends of a small east Kent community over five centuries. Distinctive features were an early expansion from the late twelfth century in conjunction with urbanization and intensified land use. The evidence and approaches to rural settlements in early and middle Anglo-Saxon England are surveyed by Welch (233). He urges better field work combined with environmental research programmes. The multiple estate model developed by G R J Jones is critically evaluated by Gregson (88) who raises problems of definition, method and application. Jones however (121) re-emphasizes the

values of his model for interpreting early settlement organization, even though the multiple estate took variant regional forms. The manorial settlement pattern of Anglo-Norman Ireland is examined by Graham (86) who stresses its spatial and temporal diversities. Fleming (78) has studied old English wills, charters, writs and memoranda in conjunction with Domesday Book to determine what became of those monastic estates destroyed by the Danes in the eighth and ninth centuries. In what amounted to a virtual revolution in landholding many were strategically used by west Saxon kings to endow officials and gain loyalty for defence purposes. The value of Domesday Book for reconstructing the economy of Norman England is demonstrated by McDonald and Snooks (141). They have applied regression analysis to Essex data on lay estates to show that the tax assessments were not an artificial impost levied from above, but rather were based upon the actual capacity of manors to pay. Results from another significant study of the data by these authors (140) show a strongly positive relationship between the values and resources of lay holdings, pointing to a high degree of consistency in the way estates were managed. Holt (105) explains the system of female inheritance after the conquest showing how while it hindered a woman from enjoying estate in her own right, it fully exploited her as a means of perpetuating the bond between tenure and lineage. The central importance of the arranged marriage for controlling descent of property through the female line is also underscored by Waugh (230) who describes how abuse of royal lordship by Henry III threatened the marriage strategies and therefore group interests of the aristocracy, leading to revolt and curtailment of the King's feudal power. The introduction of non-alienation clauses in charters is described by Waugh (231) in a separate article. This was a device used by lords to re-assert their control over free tenants and their properties when their own feudal power was threatened. The complex interplay of forces underlying grain price movements during the thirteenth century and their influences on estate management are discussed by Bridbury (30). Although manorial revenues rose with inflation after 1270, they represented neither farming prosperity nor improvements, but rather successful efforts to raise the fixed charges paid by tenants. Continuing her own investigation into the management of Canterbury Cathedral Priory during the fourteenth century Mate (148) emphasizes the strong regional differences in wages and labour services and the dramatic impact of the Black Death. In another article (149) she compares farming methods on the scattered estates of individual lords and finds that for those practices discussed in treatises, such as manuring or stock care, there was a large degree of uniformity. But where treatises were silent, the practices were often the local ones. Nash (156) has used estate maps to investigate the origin of strip size in Sussex open fields. Here measures did not conform to traditional notions of the strip, nor can variation be explained by land quality, settlement chronology, regional farming practices or Roman influence. Rather, local acre size would appear to have been the controlling factor and Nash tentatively links variations in local acre measures with the distribution of lordships. In an important article on medieval crop productivity Osmaston (167) claims that grain yields are largely independent of sowing rates and he questions both G H Dury's handling of the Winchester Manor's crop data and his inferences about contemporary weather patterns, criticisms which Dury (68) strongly repudiates. In a quantitative study Biddick (21) uses a taxation assessment to explore the relationship between taxable peasant wealth and market involvement. Results of regression analysis indicate that the position of the vill in the regional marketing grid determined over two-thirds of the variation in wealth, while soil type,

access to route ways and the number of lords explained only a further 4 per cent. The value of lay subsidies is stressed in Slater's article (202). He maintains that despite weaknesses they can provide a convincing picture of the urban hierarchy if used sensitively and in combination with other evidence.

On source material of the early modern period Woolgar (243) describes some seventeenth-century documents thought to be copies of estate maps which on closer inspection were found to be working papers and drafts. They provide a valuable insight into the advanced surveying and map-making techniques of the time. The study of probate inventories has traditionally focused upon goods and chattels as evidence of life styles and living standards. However Cox and Cox (53) have analysed their valuations and find that they are not only consistent with market prices but are subject to the usual factors such as the seasons, wartime scarcity, new sources of supply and technical innovation. Climate is still the subject of debate. Prior (181) disputes the hypothesis of E L Jones that climatic fluctuations and other natural disasters may explain the slower economic development of Asia compared with Europe before 1800, and Jones replies (120). Parry and Carter (173) use the Manley temperature record covering three centuries from the 1650s to evaluate the influence of climatic variation on levels of risk of crop failure. They conclude that some recent and quite minor climatic variations have in fact had a substantial impact. The statistical relationship between prices, mortality and weather since 1670 is explored by Galloway (80) who finds a strong association between endemic disease, low winter and high summer temperatures, while reductions in mortality after 1700 are linked to a better climate, less variable harvests and improved sanitation. Based on the argument that the seasonality of marriage reflected rural work patterns Cressy and Kussmaul (55, 127, 128) use evidence from parish registers to plot changes over the long term. Kussmaul's findings portray the emergence of strong regional differences in the mid-seventeenth century which are linked to the achievements of market integration and regional specialization of production. The political affiliations of landed men involved in ruthless depopulating enclosure are examined by Stone (210) to test the claim that the English Civil War represented a clean conflict between the feudal and entrepreneurial elements in society. Findings contradict the theory that bourgeois attitudes led to support for Parliament. Beckett (13) reviews the history of the land tax. This did not represent a new move into permanent high-yield direct taxation but rather was an extension of earlier levies which survived so long because the government would not or could not assess wealth realistically. Of greater long-term consequence was the extension of excise duties which ultimately was profitable enough to relieve the land tax of its major role in fund raising. On farming practices Bell (18) examines ridge-making techniques in Ireland and maintains that they were not necessarily 'backward' but carried important advantages for cultivation. Technological change in agriculture continues to attract interest. Sullivan (215) uses patent data to trace the chronology of invention between the early seventeenth century and 1850, and Colyer (49) lists cultural isolation, limited capital and extensive farming systems as major constraints on the spread of new methods in Wales. Using evidence in probate inventories Overton (169) traces the spread of turnips and clover in Norfolk and Suffolk and discusses the mechanics of the diffusion process. Boud (25) considers the early development of agricultural societies in Scotland and concludes that they were a significant agent of change in areas of agricultural conservatism, while the impressive achievements of the little known Scottish improver, John Walker, are drawn to our attention by Withers (241). Two other

notables are discussed: Spier and Anderson (203) find that Shakespeare's references to farming have much in common with Thomas Tusser's writings and Moffat (152) has examined observations made by William Cobbett on the soils of districts he visited to discover that they conform well with present day assessments. On migration Houston (109) uses evidence from movement certificates issued by the Scottish church to illustrate how mobility was associated with particular occupations and stages in the life-cycle, and Withers (240) traces patterns of movement from the Scottish Highlands to the central lowlands from census and other sources. On Ireland O'Flanagan (163) plots the incidence of fairs between 1600 and 1800 and considers how the pattern that emerges can be related to developments in agriculture and commerce, while Bell (19) examines hiring practices in Ulster. Here both servants and employers often came from the same small-farm sector, were of a similar social status and simply used service as a stage in the quest for their own holdings. The overwhelming poverty of Tudor and early Stuart England has become axiomatic. But Tronrud (223) argues that the tax assessments which underpinned earlier studies are misleading and he uses alternative sources to show that the levels of destitution may have been exaggerated. In her study of rural crime Herrup (101) denies the claim that the discretion exercised over the execution of capital offenders served as a tool to sustain the power of the elite. Her evidence suggests that each decision resulted from careful assessment by people from differing social backgrounds, and reflected contemporary views on morality and justice. Through a close scrutiny of local and judicial records Walter (226) has provided fresh insights into the abortive Oxfordshire rising over depopulating enclosure in 1596. Because the gentry and 'middling sort' were prospering from the very changes which had spawned revolt they remained aloof, denying leadership and stifling collective action by the poor. The pattern of plague fatalities in medieval and early modern England is considered by Ell (71). He maintains that it can be partly explained by dietary habits which caused iron deficiency in women and the young. Curiously, this gave them a level of protection against the disease, while adult males with a high iron status were more likely to die.

The history of British woodlands deserves more scholarly attention than it is apparently receiving and Watkins (228) describes how spatial changes of the present century can be assessed by the use of sources including satellite remote sensing and aerial photographs. In their own local study Jones and Jones (125) also emphasize the variety of source material that is available for the study of woodland management on particular estates; for surveys of individual woods; and for the historical analysis of wood and timber using crafts. Browne (33) and Day (62) draw our attention to the Ordnance Survey maps and memoirs. These have been little used but can provide valuable insights into Irish society during the pre-Famine era. The value of computers for managing historical data is explained by Jackson and Schurer (117, 198), and Beckett and Foulds (15, 16) report on the early stages of an important computer-based investigation into the open-field village of Laxton. Flora Thompson's *Lark Rise* has gained in popularity recently as a primary source for the study of late nineteenth-century rural life and society. However, English (74) has scrutinized documentary records of the time and found that the work was more fictional than factual. Thompson's aim apparently was to glorify the old way of life and so she constructed a past that never really existed. The vexed question of living standards is again the focus of concern, and Schwarz (199) argues that real wage rates may not have settled comfortably at the level of the mid 1700s until a whole century later. Crafts (54) takes issue with the claim that real wages doubled between 1820 and 1850, and offers revised lower estimates. These

Lindert and Williamson (137) refute. Welfare is another leading issue, Boyer (29) offers an economic explanation for the granting of outdoor relief to the able bodied between 1780 and 1835. Using a simple profit maximization model he demonstrates that the system represented to farmers the lowest cost method of securing an adequate peak season labour force. Lately it has become accepted that the New Poor Law had little impact on welfare provision locally. However, Apfel and Dunkley (2) question the new orthodoxy and their close study of a southern arable county highlights the marked reduction in aid to the poor after 1835 and the general harshness of the new relief system. The role of friendly societies is explored by Jones (119) in her study of Glamorgan evidence. Most families from a wide social spectrum contributed but benefit provision was secondary to 'good fellowship'; risks of mismanagement were high; and while regular contributors might gain, it was at the expense of those who fell behind and lost all. Irish rural societies seem to be all the rage at present and Bartlett (10) focuses on protests of the Defenders during the 1790s. Although they shared the conservative concerns of their predecessors over agrarian injustice, their deeply held anti-state feelings and extreme violence marked a new departure in protest. The Society of United Irishmen was active at the same time and Curtin (58) describes how it built up a revolutionary mass-based organization which struck terror into the heart of the administration. Archer (3) demonstrates that the little understood crime of animal maiming in East Anglia was not always an expression of class hatred as generally believed. Instead outrages resulted from deeply held grievances of a personal nature which found relief in a form of symbolic murder. There has been a neglect of protest in western parts of England and Porter (179) helps redress the balance in his search for reasons why attempts to unionize labourers in Devon failed. Isolation on small farms, low wages, a lack of alternative employment and employer hostility all contributed to an apparent lack of interest. There is renewed controversy over England's landowning elite. Using quantitative methods Stone (209, 212, 213) refutes the hypothesis that for centuries this class was uniquely open to infiltration by new families from banking, trade and industry. The Springs however (205, 206) challenge this interpretation and there is a protracted exchange of views. Michie (150) describes how one of England's richest men, Lord Overstone, spent his money and Richards (187) in a study of the Sutherlands and their fortune asks whether the 'landed leviathans became prehistoric left-overs, rendered obsolete by elements of industry and Empire'. He concludes that by the 1880s, like other families, they were 'stranded like dinosaurs, an expensive élite with few and diminishing functions, a gaudy decoration of the uppermost levels of British society'. Britton (31) has constructed a table of the occupations and fortunes of the top ten wealth holders in Scotland between 1876 and 1913. Comparisons with the United Kingdom as a whole show that finance and the professions generated few fortunes compared with heavy industry, drink manufacture and trade. In the recent flood of literature on land reform the role of Ulster politicians has been largely ignored. Thompson's study (220) however, shows that northern opinion had a critical influence both upon the content of the 1881 Land Bill and upon its fate at Westminster. The belief that farmers rarely defied the traditional leadership in county politics is contested by Jaggard (118) who argues that in Cornwall farmers maintained a pivotal position and consistently overshadowed their social superiors in political affairs. On marketing Thwaites (222) examines the impact of late eighteenth-century food shortages on trading practices both short and long term, and Shaw (201) concentrates on the food supply of British cities in the nineteenth century. Although the number of retail outlets was

growing up to the 1840s to serve increased numbers of consumers, the major transformations occurred after 1870, when rises in real incomes and population went hand in hand with innovations in food technology and widening areas of supply. This latter development created its own problems and Offer (162) considers how they impinged on naval planning during the years leading up to the Great War. Rooth (191) makes use of government papers of the 1930s to show that formidable obstacles prevented the full-scale protection of British agriculture from being implemented. A major constraint was the priority given to industry which led government to allow imports in return for foreign purchases of British manufacturers, while fears of damaging imperial interests were a further hindrance. The course of British agricultural policy since the Second World War is traced by Bowers (26) who stresses the pernicious effects on the environment and the destruction of deserted sites, ridge and furrow, water-meadow systems and hedgerows that it has indirectly caused. But in his own historical overview of the same issue, Collins (48) argues that what we are seeing today is merely part of a long term trend that originated with the Agricultural Revolution and was only briefly halted during the depression years of the late nineteenth and early twentieth centuries.

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Book Reviews

RICHARD M SMITH (ed), *Land, Kinship and Life Cycle*. CUP, 1984. xiii + 547 pp. £40.

A book of fifteen essays by different authors and over 500 pages on the theme of land, kinship and life cycle is likely to attract the interest of more than a small group of specialist readers already working in the field. In that case, the reader needs to be prepared in some way for the current angles of approach and the documentary sources used in the subsequent essays. Richard Smith attempts this in a long first chapter but it makes tough reading, partly because it ranges too widely, partly because it seeks to generalize over much. It leads the reader into many byways and leaves him at the end without any clear framework in which to fit the more detailed studies that follow. It is best read last of all.

Easier to comprehend and positively stimulating are the next six essays on the Middle Ages that examine different places under different tenurial conditions before and after the Black Death, and show some clear trends and changes in the workings of kinship and the occupation of land. The abrupt alteration in the ratio of people to land in the mid-fourteenth century could not fail to leave clear traces, and these are effectively demonstrated in rural places in East Anglia by Bruce Campbell, Richard Smith, and Jack Ravensdale; by Ian Blanchard in some Derbyshire and Somerset villages where industry temporarily supplemented agriculture; and by Christopher Dyer and Zvi Razi in the West Midlands. The weight of the evidence falls on different aspects of the story, but between them all they underline the partitioning of land, multiple tenancies, and family disputes before the Black Death, in contrast with the larger holdings and more strongly differentiated peasantry that gradually emerged thereafter. Jack Ravensdale emphasizes the changing content of manorial custom, and in particular the changing status of women, especially widows, when customary land ceased to be a scarce commodity and became, instead, a drug on the market. The subtlety of changes within a formally stable structure is the essential message here. Similarly Ian Blanchard's evidence of rural industries surging and fading, or moving to other places, reminds us of the transitory nature of many strategies for survival – an important lesson this, for all periods and not just for the fifteenth century. But Ian Blanchard's wider perspective at this point on the question of strategies narrows unaccountably at others. For example, he is puzzled by the seeming sale of pieces of land at one date and their return to the same family at another; he can only explain it by some ancient group memory of rights that permit the resumption of once-owned land. He does not contemplate the possibility of an unwritten custom (that is found in some villages in Spain to this day) obliging sellers of land first to offer their property to kin and/or neighbours; again, when reconstructing family relationships, he never sees mutual aid, and support gladly given, between fathers and sons, but only 'tyrannical paternalism'. This is only half a view of reality. Zvi Razi uses Halesowen families to emphasize the need for family pedigrees to be fully explored, if the historian is to gauge correctly the influence of kinship on changing land patterns. This is a salutary reminder, especially as it draws attention to the women involved in some way in almost every land transaction. Yet his own analysis is not free from criticism. He reckons a transfer of land from parents to son-in-law as a transfer between kin, while that between husband and wife is not. This procedure draws objections from Christopher Dyer in a second contribution that has the welcome flavour of constructive debate between the essayists. Medieval historians already stand on firmer ground when studying land, kinship, and life cycle than the early modernists.

Writers on the period after 1500 present a less coherent picture, reflecting the unsatisfactory state of present knowledge, and a desire to generalize prematurely. But individually some of the essays are rewarding reading. The economic resources of widows, many of whom were considerable money-lenders, are demonstrated and discussed by Jim

Holderness. The poor who depended on parish relief at some stage in their life cycle are examined by Tim Wales in Norfolk and by W Newman Brown in Aldenham, Hertfordshire. Both case studies show a generally flexible, accommodating, and often compassionate system at work. Tim Wales sensitively describes its accepted place in the routine of family life whenever ordinary strategies failed – notably in sickness and old age. But women throughout their adult lives had most cause to be grateful for the institution. Keith Wrightson studies one community, using much the same methods as the medievalists, and shows in Terling, Essex, the small nuclear family and a generally loose kinship network serving satisfactorily in this commercially developed corner of south-east England.

In this company of local historians, all sensitively attuned to regional and structural differences and to changes that may occur between one decade and the next, Alan Macfarlane's essay strikes a discordant note with its simplistic and timeless assertions about England as a whole, even though his generalizations are based ultimately on the single example of Kirkby Lonsdale. But his essay must surely have been written before his book, for it rehearses the same arguments, yet makes no concessions whatever to the severe criticisms which his book received. The case for printing it here is obscure.

The last essay by Dennis Mills is a well-rounded study of Melbourn, Cambridgeshire, examining the reasons for the continuance there of a substantial peasantry into the nineteenth century. It is a satisfying piece of work for it uses a wide range of sources, and sensitizes the reader to some of the less obvious factors that seem to have assisted the unusual survival of a peasantry to this late date in grain-growing country. Two of these seem to have been the willingness of larger yeoman farmers to continue to subdivide farms, and the absence of a gentry, eager to engross and consolidate. This essay has a breadth of viewpoint and a sensitive awareness of time and place that commands respect. But this verdict, in fact, applies to all the best essays in this volume. The book does not achieve a unity. But it affords many glimpses of land, kinship and life cycle in a variety of places and circumstances. It will help those who work with other unique places and structures, who nevertheless search for comparative examples that will permit safe, but not sweeping, generalizations to emerge.

JOAN THIRSK

E WILIAM, *The Historical Farm Buildings of Wales*. John Donald, Edinburgh, 1986. x + 202 pp. 141 illus. £25.

Eurwyn Wiliam, Keeper of Buildings at the Welsh Folk Museum, has followed his intensive regional study of farm buildings in north-east Wales with an excellent general account of historical farm buildings in Wales. The study, based on twelve years' field research involving the examination of some 900 farmsteads, brings out the regionalism within Wales and the relationship of building history to changing farming practices. Contextual studies of farm buildings are a relatively new departure within the field of vernacular architecture. Wiliam acknowledges the influence of Ronald Brunskill but also draws on a Welsh tradition of social studies of domestic architecture which goes back via Iorwerth Peate to Sir Daniel Lleufer Thomas, the remarkable Secretary of the 1893–1896 Royal Commission on Land in Wales.

Wiliam shows how farm buildings relate to vernacular houses and introduces some important points of relative chronology. Very broadly, as Peter Smith has shown, the topographical contrast between the eastern timber building areas and the stone and clay building areas of the west also marks a chronological passage from earlier to later buildings. However, for reasons which are not entirely clear, farm buildings tend to be later in date than the vernacular houses with which they are associated. Farm buildings dating from before the middle of the seventeenth century are not common and are usually found on lowland gentry farmsteads. Dated farm buildings become more numerous in north-east Wales during the last quarter of the seventeenth century and, Wiliam argues, represent the first identifiable wave of agricultural rebuilding which spread westwards. Superimposed on this sequence is a more general pattern of rebuilding initiated by the great and small estates which has given Welsh farmsteads a largely nineteenth-century character.

Wiliam clarifies the plan and development of the cowhouse, stable, and barn in successive chapters on cattle, motive power, and crop processing. Some historically important practices like transhumance husbandry have left few traces above ground. Nevertheless, Wiliam aims to be as comprehensive as possible and discusses many minor structures such as gorse mills, field kilns, and the intriguing round goosepens associated with the better known corbelled south Walian pigsties of late date but uncertain origin.

Wiliam takes a detached view of the complex and somewhat acrimonious controversy over the origin and distribution of the longhouse. In its classic form the longhouse combined house and byre in a single range with a common entry which contrasts with the otherwise general historic separation of farm and homestead. Whatever the origin of the longhouse, Wiliam argues that surviving examples, generally stone-built or timber rebuilt in stone, date only from the late sixteenth or early seventeenth centuries and have a distinctive distribution in the south-eastern upland pastoral region. The earliest longhouses are thus characteristic of the southern Welsh marches, an area administratively and socially not unlike the

Scottish borderlands, and date from a period which saw endemic cattle rustling and raiding. In Wales, however, no defensive structures sheltering men and beasts have been found which correspond to the bastles and pelehouses of the Scottish border. It is tempting to speculate that the Welsh longhouse with its single range, thick walls, and easily-secured cross-passage may have been an architectural response to the disturbed conditions of the marches, offering some security against cattle thieves. There is a revealing contrast between these longhouses and the free-standing, storeyed, sub-medieval houses of Caernarvonshire and Merioneth – a pastoral area which enjoyed an earlier history of settled administration than the southern uplands.

Eurwyn Wiliam has written an original book which will, no doubt, stimulate further regional research; in the meantime it will serve as an indispensable guide to a largely obsolete and increasingly depleted group of vernacular buildings of absorbing historical interest.

R F SUGGETT

NICHOLAS RUSSELL, *Like engend'ring like: Heredity and animal breeding in early modern England*. CUP, 1986. ix + 271 pp. £27.50.

This is an excellent book. It is an exploration by a biologist of the historical relations between science, technology and economic development, with the accent on the scientific aspects of livestock breeding. The author begins by drawing attention to the gap between accounts of domestication and the early changes in domestic animals, and recent breed histories, which go back no earlier than about 1800. Not only are the sources of evidence different for the three broad periods, but the questions asked differ. Russell uses the meagre evidence available for the long intervening period, which he regards as having deterred serious analysts, to answer questions of a different kind, and restricts his treatment to the horse, the cow and the sheep during the sixteenth to the eighteenth centuries.

Chapter 1 is an account of the numerous breeding strategies available. Here it is to be hoped that in drawing attention to our incomplete understanding of certain genetic processes, the historian is not led to believe that the laws of heredity are in doubt. The author next stresses the extent to which the classical agricultural writers of antiquity influenced the writers of Renaissance Europe, but questions the extent to which any of these writings influenced contemporary breeding practice. In Chapter 3, 'Generation and the market', is considered the background to animal breeding in the seventeenth and eighteenth centuries, when the breeders either satisfied a market for products or produced superior animals for sale to others.

There are two chapters on horses, the first covering war, sport and fashion, and the second, blood, speed and carriages during the eighteenth century. These and the next chapter on cattle are well illustrated with old livestock prints. The period under consideration was of course when meat replaced wool as the most important commercial product of sheep and this provides the theme of Chapter 7. Here Russell covers regional sheep types in considerable detail following the work of Trow-Smith, which I compounded with biological evidence to produce a map. Russell is what in biology is termed a 'divider' when it comes to classification, while I am a 'clumper' and it would have been helpful if my map had been reproduced alongside his two maps (of the seventeenth and eighteenth centuries) so that the reader could see how Russell's details differ from those of mine and Trow-Smith. In addition to quoting my paper of 1964, my *Sheep and Man* (1983) could have been quoted to show how the subject had developed. The lack of a key to the numbers on the maps makes them difficult to follow – the details are given only in the lengthy text.

The author lists much useful data on body and fleece weights from diverse sources, as well as equally-valuable data on the productive characters of the other species. The book ends with a summary in which he stresses that since many commercial breeders today have an incomplete understanding of Mendelian genetics, it is not surprising that successful improvements were rare in the past. There is an extensive bibliography and a good index. It is impossible in a necessarily short review to do justice to this important work, which makes a rare contribution to the history of livestock breeding and genetics, as well as to agricultural history.

M L RYDER

JOHN D POST, *Food Shortage, Climatic Variability, and Epidemic Disease in Pre-Industrial Europe: The Mortality Peak in the Early 1740s*. Cornell University Press, 1985. 303 pp. $32.95.

Among the features of the world that west Europeans have thankfully lost are crises of mortality associated with food shortages. These plagued the pre-industrial world until the nineteenth century. Indeed the author of the present volume previously published an account of *The Last Great Subsistence Crises in the Western World*, referring to Europe in 1816–17. But the beast of hunger still roamed in the 1840s, notably in Ireland, and appeared again in the west of that country in 1879–80, leaving to the twentieth century a legacy of possibly the only shrine and certainly the only international airport (both in Knock, County Mayo) more or less attributable to an outbreak of hunger.

Historians have often been vague about the relationship between climate, food supplies, hunger, and death, generally asserting that bad weather caused harvest failure, which in turn caused famine, which in

its turn caused people to die. But now Professor Post, in a magisterial study of the European mortality peak of the early 1740s has examined the connections in great detail.

Professor Post's conclusion is that 'the principal link between climatic variability and epidemic disease in the 1740s, and probably in pre-industrial subsistence crises in general, was . . . more social than nutritional, in the sense that it owed more to social upheaval than to dangerously lowered human resistance to louse-borne infections, typhoid and dysentery'. This judgement rests upon the knowledge that even in conditions of severe food shortage, people rarely starve to death, although they do die – and apparently did so in large numbers in Ireland and Scandinavia in the early 1740s – of 'famine disease', ie emaciation, oedema and diarrhoea. The major killers in the 1740s were 'fevers', principally typhus, relapsing fever (both louse-borne infections), typhoid and dysentery. None was directly caused by nutritional status, although malnourished people are vulnerable to infections. Rather, these diseases were spread by direct bodily contact between humans which is increased in periods of extreme cold as people huddled together for warmth and by scarcity that forced the hungry into towns in search of food. Interestingly, there is no discussion of vitamin deficiency diseases.

The underlying reason for the food shortages was the sequence of three consecutive cold years, 1739–40 to 1741–42. These caused short-falls in the grain harvests which pushed up prices and brought about widespread scarcity. Cold also had a direct effect by increasing mortality from 'exposure hypothermia' (eg postmen freezing to death) and 'accident hypothermia' (a fall in body temperature). Professor Post's discussion of the latter well illustrates his methods when dealing with matters of nutrition and health. Numbers of deaths attributable to accident hypothermia, he tells us, were 'pronounced' in the early months of 1740. He then defines hypothermia as 'the unintentional decline of deep body temperature, measured rectally, to a reading below 95° F'. This immediately conjures up a vision of a hitherto untapped body of social data for the eighteenth century. One is disappointed, although not surprised, to discover that Professor Post's assessment of the extent of accident hypothermia in the 1740s rests on an extrapolation back to the past of the incidence in Britain in the 1960s and 1970s. This he relates to an assembly of contemporary climatic data from various parts of Europe, a study of the seasonal incidence of deaths in 1739–41, and reasonable inferences about room temperatures in eighteenth-century houses.

The great strengths of this book are the rigorous examination of the relationship between climate, harvests, grain prices, welfare programmes, hypothermia, hunger, and epidemic diseases. The range of evidence marshalled is impressive. At times he strains the argument too far ('the temperature and precipitation time series for England are fairly representative of the weather conditions that prevailed throughout the British Isles' – this reviewer, sitting in Belfast in August, listening to the London weather forecast, disagrees). I have doubts about the firmness of some of the Irish data, and, if I knew more about France, the Low Countries, Germany, Switzerland, Italy, Scandinavia, etc, I might have quibbles about that evidence as well. But such comments should not detract from the fact that this book is a major contribution to our understanding of eighteenth-century European society and sets new standards for historians interested in the wider aspects of historical demography.

L A CLARKSON

ANN KUSSMAUL (ed), *The Autobiography of Joseph Mayett of Quainton (1783–1839)*. Buckingham Record Society, 23, Aylesbury, 1986. xxxii + 101 pp. £10 (hbk); £4.50 (pbk).

Readers of this *Review* will find Mayett's account of life as a farmworker more interesting than his confessional, but opaque description of his experiences in the enrolled Militia between 1803 and 1815. Incidents from the post-war years of agricultural depression commonly conflict with historical orthodoxies. In 1821 he is encountered consuming the works of Wooler, Carlile and Cobbett, hardly a testimony sustaining perceptions of the isolation of the countryside, and the ideological immaturity of the agricultural labourer in the decades of the making of the English working class. In 1825 Mayett 'went to the Squire and Stated the Case' of his wife's illness only to be told by that 'Chief Justice in this part of the Country' that 'I was a good labourer and could get the best of wages and therefore I must pay for a docter myself'. This same 'Chief' magistrate, the experienced William Pigott of Doddershall, was also responsible for the arbitrary and draconian cut in the wages of those in parish work in that year of peak rural unemployment, 1829 – on the eve of Swing. If Mayett, on occasion, won appeals against such harsh treatment at the hands of amateur social security administrators, his account proves that the local judiciary were not the invariably indiscriminate authors of generous provision under the old poor law that they became in the polemics of utilitarian critics, and in the studies of certain historians. Nor were Mayett's employers altruists. He had a typical experience in 1823: 'when the haytime Commenced my master and I disagreed about wages he wanted me to work from four in the morning till eight at night which was two hours per day longer than other men for the same money for he said I had no Chilldren and therefour I Could aford it'. Such rationale became even more widespread after the implementation of the notorious Poor Law Amend-

ment Act, but unfortunately Mayett's account does not extend to cover his encounter with this brand of Victorian values.

Mayett, a Methodist and later a Baptist, wrote retrospectively about 1830–1, when his religious beliefs were clearly more conditioning than during his soldiering period – and hence that period's account is choked by recurrent guilt. But the autobiography also provides interesting insights into a small, and primarily plebeian dissenting congregation, struggling to preserve and extend its membership, create an educational programme, and financially underwrite their activities, while inwardly bedevilled by clashing personalities.

Dr Kussmaul has written an admirable appreciation of the autobiography; but this is hardly the 'introduction' claimed, as it so comprehensively analyses the fundamentals of Mayett's sketch for the historian, that the text itself is essentially pre-empted. Perhaps readers should read Mayett first, and then Kussmaul to check that she has not missed anything. Nevertheless, the editor and the Buckinghamshire Record Society, are to be congratulated for making another early nineteenth-century working-class author readily available to a wider modern audience.

ROGER WELLS

CHRISTOPHER HARRISON (ed), *The History of Keele*. University of Keele, 1986. 168 pp. 11 maps; 32 plates. £4.95.

In this attractively produced book, seven authors from the University of Keele tell the story of the village and estate from its medieval origins as a Templar colony in the twelfth century to its purchase by the University College of North Staffordshire in 1949, and its subsequent growth into a University in 1962. Robin Studd shows how the Templars gradually expanded their agricultural settlement on the rather bleak uplands of north Staffordshire into an open-field community with four common fields. Being Templar tenants gave the farmers more freedom than was usual in the medieval period, but subsequent authors reveal how the purchase of the estate by a local family of rising gentry – the Sneyds – in 1544 gradually led to the reduction of these freedoms and the conversion of the village into a model Victorian 'closed' estate by 1870.

Christopher Harrison outlines the history of the Sneyd family and shows the effects of their policies up to 1660. They became resident landlords about 1580, and built the first Keele Hall. Angus McInnes contributes an interesting analysis of the community between 1660 and 1760, when its population roughly doubled in size from about 320 people to about 600. Keith Goodway follows with a description of the landscapes and gardens at Keele between 1700 and 1900, showing how successive Sneyds gradually converted the park and gardens into a Georgian and Victorian showpiece. Anthony Phillips unravels the mechanisms whereby landlord control was strengthened and perfected between 1830 and 1870, with a consequent shrinkage of the population, and change in its occupational structure with those engaged in agriculture falling from 46 per cent of household heads in 1841 to 29 per cent in 1871, while domestic servants rose from 2 per cent to 19 per cent. Francis Doherty discourses amusingly on some rather slight Sneyd literary leavings, while Stanley Beaver, the founder professor of Geography at Keele shows how the estate was rapidly transformed by the College and the University after 1949.

A brief review fails to do justice to many other informative aspects of this book, which is indeed much more than a mere exercise in local patriotism. It shows how many aspects of English history can be better understood by a good local study.

MICHAEL HAVINDEN

SIMON BAATZ, *'Venerate the Plough': A History of the Philadelphia Society for Promoting Agriculture, 1785–1985*. PSPA, Philadelphia, 1985. xii + 124 pp. 12 plates. No price given.

In the preface to this bicentennial history, Simon Baatz draws attention to the apparent paradox of the existence of an agricultural institution in a now sprawling metropolis and the remoteness of the Society from the concerns of practical farming is a recurrent theme running through his account of its varying fortunes. When the Society was founded its membership was largely recruited from 'an elite group, closely connected to the most powerful and wealthy men in the country' which was unable 'to impress a scientific agriculture onto dirt farmers'. By the 1880s the Philadelphia Farmers' Club, founded in 1849 as an organization separate from, but linked to, the PSPA for the encouragement of new ideas in agricultural science had become 'a typically Philadelphian institution – eccentric, exclusive, and aristocratic'. Chapter 4, rather misleadingly entitled 'Agriculture in the Gilded Age 1862–1909' as the agricultural content is minimal, is essentially about this second institution.

It is difficult to discover whether the PSPA promoted much agriculture; its greatest endeavours in this direction were during the early years when its various projects show an interesting similarity with the concerns of many British agricultural societies – the sponsorship of prize essays and technical publications, the encouragement of agricultural experiments, the establishment of a veterinary college, a pattern [model] farm, and the promotion of an agricultural show being examples. There were also more specific concerns such as the ravages of the Hessian fly, the excessive exploitation of land, state funding, and agricultural support policies. The projects were, however,

invariably short-lived and flawed. The PSPA was constrained by lack of finance and dissension over its aims and objectives; there were several periods when its organization and activities ceased followed by revival and reorganization.

Although we are told that recently the PSPA has been invigorated by members broadly connected with 'agribusiness' there is virtually nothing in this narrative on the Society's recent past apart from some account of its involvement with herd-accreditation for bovine tuberculosis eradication during the early part of the twentieth century. This is essentially an internal history of a prestigious society which is more informative about eighteenth- and nineteenth-century Philadelphian social life and politics than it is on the course of agricultural progress.

NICHOLAS GODDARD

JAMES R GIBSON, *Farming the Frontier: The Agricultural Opening of the Oregon Country 1786–1846.* University of British Columbia Press, 1985. 265 pp. 1 map; 17 plates. £24.95.

There can be few students of the affairs of North America who are unaware how bitterly the Treaty of Guadalupe Hidalgo is resented by many Mexicans today. The work reviewed lights a long fuse in its prologue that smoulders throughout and explodes in the final sentence that bears quotation and reminds us of the similarities between 1846 and 1848. 'It may come as a surprise to Americans, and even to Canadians,' argues Gibson, 'that unlike the United States, Canada has an irredentist legacy, to which the Oregon "compromise" was the chief contributor.' It is Gibson's view that the United States had no claim on the right bank of the Columbia River and it is one based on a convincing command of the history of agricultural development to the north of the river before 1846.

Gibson suggests that previous works on the Oregon Country (and Question) have tended to ignore or misrepresent the state of agriculture there before the American takeover, in part because the Hudson's Bay Company archives have been inaccessible until lately. In the 1840s Americans in Congress certainly believed the entire Oregon Country to be a wilderness and argued that it should fall to the United States by virtue of the doctrine of use. Such a view would not now be possible by virtue of Gibson's work.

Gibson shows in detail the extent of the Hudson's Bay Company's developments north of the Columbia. He sees, however, that the Company was not a force for social and economic diversification since its monopolistic demands ran counter to the growth of settlements of individually minded pioneers. Thus few Canadians were attracted especially south of the Columbia while a number of official visitors gave the entire area a poor report when they visited it in 1845 to give London a view of its value. By contrast the United States wanted the Puget Sound harbour since the mouth of the Columbia was so treacherous. Some American historians have argued that the Democrats did not win the election of 1844 by promising 54° 40′ but Gibson believes Polk felt he had an expansionist mandate. The British Government by contrast, especially after Lord Aberdeen replaced Lord Palmerston, was not interested in defending its claims and so the United States won a triangle of territory to which it had no rightful title. The Hudson's Bay Company was already weakened by the decline of the trade in beaver through over-exploitation and changes in fashion, so it had diminished influence.

The book makes its point by ending in 1846. There were few Americans north of the Columbia at that date. It does not suggest what would have happened to the tide of American settlement afterward if it had found an international boundary at the Columbia River and if the number of Canadians north of the river had remained low. It would be interesting to know whether Gibson would have expected a second adjustment, though the history of the Prairie Provinces would seem to suggest that Americans could settle north of the border without behaving like Texans. It is clearly unwise to descend into such speculations but this lively, interesting and provocative work does tend to promote it.

R A BURCHELL

ROGER J P KAIN AND HUGH C PRINCE, *The Tithe Surveys of England and Wales.* CUP, 1985. xvi + 327 pp. £27.50.

The tithe surveys, produced in implementing the Tithe Commutation Act of 1836, are a prime source for early Victorian agricultural history, as well as for the structure of landownership and tenancies, the form of the rural landscape, and the existence of rights of way. Such a rich source has, naturally, long been known to historical geographers and historians, not least through the work of Hugh Prince and Roger Kain, dating back to 1959 in the one case and 1974 in the other. It has been used in a very large number of local and county studies published in the last thirty years or so, but has not yet been exploited on the grand majestic scale which the capacity of the computer to handle millions of items of information has made possible in principle. That still remains true. The present book is the result of many years of thought and labour, but even that has not been sufficient to encompass the construction of a vast and comprehensive tithe database, for the task of inputting data from over 11,000 parishes and over 14,000 tithe files is immensely laborious and time-consuming even if the processing of such a database this way and that could be carried out in the twinkling of an eye. The time and effort has, rather, been devoted to a penetrating and exhaustive

examination of the source, its provenance, characteristics, potential uses as evidence, and limitations, pointing the way for future researchers. In the words of the conclusion, 'the tithe surveys, fully exploited in conjunction with early Ordnance Survey maps, the 1841 and 1851 census enumerators' books, the land-tax assessments, private-estate accounts and surveys, farmers' notebooks and diaries, and the Royal Agricultural Society of England's prize essays on county farming, can present a vivid picture of many aspects of the condition of rural and urbanising England in the middle years of the nineteenth century and provide solid points of reference for retrogressive enquiries'.

Thus, projects for an agricultural atlas of England and Wales at the time of tithe commutation, for an analysis and evaluation of farming systems, for an account of the structure of farm holdings, for a linking of land use data to the early years of the official agricultural statistics, and many more, remain as challenges to research dedication and funding, some of which, as with Roger Kain's forthcoming *Atlas and Index of the Tithe Files*, have already been met. What is in the hand is a deluxe guide to the source, lavishly illustrated with worked and mapped examples of what can be done with such questions as crop distribution and crop yields, as well as with more traditional illustrations of examples of the actual tithe documents, and accompanied by a comprehensive inventory of research making use of the tithe material which has already been completed. For those about to set out for the PRO at Kew, or to a county record office (or, as the authors warn, possibly to a diocesan, municipal, or university archive) with tithes in view, this guide will be essential preparatory reading and an invaluable companion.

The guide is essentially in three parts, although the authors have not explicitly invoked these magic numbers into which all history and geography is always divided. The first looks at the nature of tithes, at those which were still leviable in 1836, and at the provisions and administration of the 1836 Act. The second examines in detail the types of document which were produced under the Act, the tithe maps, the apportionments, and the tithe files, with a special section on the reliability and accuracy of the maps and surveys. And the third sets out the value, and methods of use, of these documents as evidence for field systems, land use, farming systems, and for ownership and social structure. As an introduction to a class of records this is a model, a virtuoso performance, a handbook of research methodology as well as of document identification with a bibliographical essay of prodigious proportions thrown in for good measure. This last features particularly strongly in the third section, most especially in the discussions of land use and cropping, where the literature from the Land Utilisation Survey of the 1930s onwards is summarized and the methods and results of historical geographers and agricultural historians who have studied land use or farming systems through the tithe material are passed in review. Such a digest of all the books and articles that have been published in the field in the last fifty years, and of many of the theses which have been written, is an immense boon; and it is a source of personal gratification to see that the *VCH* is given a pat on the back for the extensive use of the tithe material made in its more recent volumes.

What it all means for agricultural history is another matter. First and foremost, the tithe commutation material gives a single snapshot of any one parish, although countrywide the process of apportionment was spread out over a dozen years or so. The tithe files, of course, did in many cases give some recent history of farming in the parish when recording comments on cultivation, harvests and yields, and the condition of farming. But in order to harness the records to the purposes of history all writers have linked the tithe materials to some other observations: mainly forward, to the 1854 agricultural returns for a handful of counties, to the post-1866 national returns, to the 1873 New Domesday, or to the Land Utilisation Survey, but sometimes backwards, to the 1801 Crop Returns, to eighteenth-century estate surveys, or with greater leaps of retrospection in identifying individual fields or buildings. This is the perfectly standard procedure for placing a snapshot in the context of a process of continuity and change, and it is no more than mildly disappointing that the intensive exploitation of the tithe records has not infrequently done little more than confirm, at almost mind-boggling parish-specific or field-specific level, what was already believed about continuity and change from other sources, for example about the differences in farming systems between light land and heavy land areas, or about the broad chronology of arable/pasture balances.

It is, however, a reminder that the tithe records themselves were generated at a particular point in a process of continuity and change, and it is at this point that a little bit of theoretical muscle might have been flexed to add tone to the technically highly accomplished and professional performance on a record-based theme, with a view to presenting the coverage that these records chance to provide in a wider setting. The problem is that the 1836 Act only commuted tithes in those places where tithes still existed, and their existence was not evenly or randomly spread across the country. The distribution of the tithe surveys is very clearly mapped in the frontispiece, and discussed briefly in the text, where a contemporary estimate is used to state that about three-quarters of England and Wales were covered. This is misleading, since in some areas, such as Sussex, almost all parishes were surveyed but actually covered only the small remnants of titheable lands as the major part of the area had become free of tithes long before.

The proportion of the total farmed area of the country for which useful data were generated was, therefore, much less than 75 per cent. Moreover, the distribution of unsurveyed areas conformed broadly to that of parliamentary enclosures, most tithes having been commuted, frequently by an allotment of land, at that time. Thus, tithe surveys cover around 98 per cent of the land area of Essex, Kent, Cornwall, or Devon, but more like 20 per cent or less of the area of Bedfordshire, Northamptonshire, and most of the belt of Midland enclosures.

The question arises, then, whether in counties where the tithe commutation data are thin on the ground those data were representative of conditions and practices in the region generally, or whether there were some peculiar features about lands that had remained titheable when all around were tithe-free. Working from the correspondence between tithe-free areas and areas of parliamentary enclosure it would appear that such 1836 Act commutations as did take place in these counties concerned pockets of land which still remained unenclosed, suggesting peculiarities of ownership structure and soil conditions, or pockets of ancient enclosures that had remained titheable, suggesting peculiarities of situation, or pockets of recent enclosure where tithe commutation had been overlooked, suggesting mismanagement. With adequate specification of the circumstances of the minority titheable districts it would become possible to test empirically the contemporary opinion that tithes were an obstacle to agricultural improvements, for this implied that farming in the still tithed areas must have been more backward and less productive than in surrounding tithe-free areas which were comparable in other respects. Admittedly, more general regional comparisons do not suggest that there was much substance in this opinion: by far the greater part of Norfolk and Suffolk were still subject to tithes in 1836, yet no one would claim that the farming of East Anglia was remarkably backward or unenterprising in the eighteenth and early nineteenth centuries.

On this reasoning the extinction of tithes on parliamentary enclosure by allotments of land to the tithe-owners was a great boon to farmers and farming, and the authors take the view that tithes were indeed such a nuisance and impediment that the landowners were willing to buy off the tithe-owners with absurdly generous compensation, the allotments being usually far in excess of one-tenth of the titheable land. This is to misunderstand the economics of tithes, assuming that they did, pre-enclosure, represent one-tenth of the produce of the land. The tithe-owner received one-tenth of the output without bearing any of the costs of production, and in the traditional but infrequently found case of taking tithe in kind being liable to meet simply the costs of collection and storage. The well-known rule of thumb of the times was that the output of a piece of land was equivalent to three rents, one for the landowner, one for the farmer, and one for the labourers. Tithe was a rent in this context: whether it was actually a deduction from the landlord's rent, the farmer's profit, or the labourers' wages is a different point. The amount of land required to furnish the tithe-owner with the equivalent of one-tenth of the gross output free of cost was not one-tenth, but three-tenths. To put it another way, if all rent were to be extinguished a landowner would not thank you for offering him one-third of the land as full compensation, since by his lights he already owned all of it. The figures cited for the inordinate swelling of glebe lands and other tithe-owners' properties are, therefore, no more than a record of the application of the logic of contemporary property rights.

These are, however, indications that there is still room for discussion and debate on the tithe question, rather than criticisms of a work whose solid virtues as a handbook and bibliographical guide will stand future users of the tithe surveys in good stead for years to come.

F M L THOMPSON

ANTONIO GÓMEZ MENDOZA, *Ferrocarril y Mercado interior en España, 1874–1913*, Vol I: *Cereales, harinas y vinos*; Vol II: *Manufacturas textiles, materiales textiles, combustibles y metales*. Banco de Espãna, Estudios de Historia Económica, 10 (1984) and 13 (1985). 261 pp; 169 pp. 1300 ptas each.

Controversy still rages in Spain over the contribution of the railways to that nation's economic development. Antonio Gómez Mendoza, a former student of Patrick O'Brien at Oxford, was courageous enough in earlier publications to challenge some of the cherished opinions of one or two eminent Spanish economic historians. Among other matters, he denied that the invitation of the Spanish Liberals to foreign entrepreneurs to construct a radial network of lines both held back the progress of indigenous iron industry and resulted in the under-development of the economy. He also maintained that considerable social savings accrued from the great wave of railway building of the 1850s and 1860s. In his two pamphlets, published by the Bank of Spain as part of their series 'Studies in Economic History', his aims are more modest. Here he sets out to analyse the statistical data collected by the *Norte* railway company on the movement of freight in the later nineteenth and early twentieth centuries. Comparisons are made with other leading companies, among them the MZA (Madrid–Saragossa–Alicante) and the TBF (Tarragona–Barcelona–France), which served different hinterlands. However, the *Norte*, which crossed twenty-five Spanish provinces, offers the modern researcher the most complete set of records, despite numerous gaps and pitfalls, while the

company provides an excellent picture of economic life in the north of the Peninsula.

Volume I, which should be of most interest to readers of the *Review*, focuses on the transport of cereals, flour and wine, which occupied leading places in the traffic of all the main railway companies throughout the period, and bears witness to the unmistakably agricultural character of the Spanish economy. The relative weight of these items in the total traffic of the companies, the changing direction of trade and the nature of the main consumer markets clearly illustrates the many-faceted agricultural crisis that hit the Spanish economy from the early 1880s and which producers sought to alleviate by calling for hefty doses of tariff protection.

Gómez Mendoza's detailed study shows how the influx of American and Russian grains after the 1880s had a more pronounced impact on the south of the Peninsula than the north. Figures for the *Norte* indicate that.the volume of cereals transported by rail began to recover in 1889, two years before Cánovas' celebrated tariff granted in response to requests from the wheat farmers of Old Castile, and nearly a decade before recovery occurred on lines serving Andalusia. Apart from the catastrophic harvests of 1904–5, this wave of expansion was sustained until 1913, ample evidence of the increasing commercialization of wheat south of the Pyrenees.

Among the main purchasers of the grain carried by the *Norte* were the flour mills dotted along the banks of the Canal de Castilla, a legacy of the flour trade between Old Castile and the Antilles which had flourished via the port of Santander, since the eighteenth century. The loss of Cuba in 1898 had severe repercussions on the fortunes of both the cereal growers and the millers. However, the spread of the rail network opened up new markets within Spain for grain and flour, both on the periphery and in the interior. The burgeoning industrial conglomeration of Barcelona remained the main market for cereals carried by the *Norte*, due in no small measure to protective duties placed on imported grains. Interestingly, Madrid received most of its cereals from the south of the Peninsula, which entered the capital at Atocha railway station.

During the last quarter of the nineteenth century Spanish wine growers enjoyed an unparalleled prosperity as a result of the outbreak of phylloxera in France. Between 1876 and 1891 exports of *vin ordinaire* to her northern neighbour rose eightfold. However, in 1891 a most favoured nation clause between the two powers expired, new competitors appeared, not least Algeria, Spanish vines were decimated by phylloxera, and exports began to tumble. As the author demonstrates, there existed a strong correlation between wine exports and the volume of transport. Both reached a peak in 1873, 1881–3 and 1891 and fell in 1876 and 1885–6, evidence that the main user of this form of rail transport was the foreign consumer. Even so, Gómez Mendoza shows that the area served by the *Norte* was less devastated than the wine districts using the MZA.

With its extensive statistical sections and well-written chapters on the contribution of the Spanish railways to the mining and manufacturing sectors, Gómez Mendoza's work is yet another example of the magnificent contribution of the Bank of Spain to the field of Spanish economic history.

JOSEPH HARRISON

JANET POPPENDIECK, *Breadlines Knee-Deep in Wheat. Food Assistance in the Great Depression.* Rutgers University Press, New Brunswick, New Jersey, 1986. xvii + 306 pp. $30.00.

Readers are familiar with the modern dilemmas presented by beef mountains and milk lakes in the Western World while malnutrition and starvation run rife in the Third World. It may thus not come as a surprise to find that American capitalism confronted the paradox of scarcity amidst abundance at an earlier stage in the twentieth century. *Breadlines Knee-Deep in Wheat* looks at the plight of millions of poor Americans who remained hungry while their fellow commercial farmers produced surplus crops which were either stockpiled, sold abroad or even destroyed. Written by a sociologist whose heart bleeds as she confronts this shameful situation, the book describes the way in which American ideology, institutional arrangements and interest group politics prevented the effective distribution of excess commodities to the needy even during the severe distress of the Great Depression. Food assistance programmes could and should have relieved the conditions of the hungry, but they did not do this.

The study spreads over a long period from the 1920s into the 1960s, but most attention is directed to the 1930s. As the United States' economy collapsed and the Hoover administration failed to provide solutions either to the problems of unemployment and poverty or to those of low agricultural prices, so opportunity for reform, even of a drastic variety, loomed large. New Dealers were anxious to bring change as well as general recovery, but they had to establish priorities in order to move forward. When higher priority was given to farm policies than to the hunger of the unemployed and distressed, then the distribution of surplus commodities to the poor faced difficulties. The creation of a government agency, the Federal Surplus Relief Corporation, certainly signalled reform possibilities and while this corporation was active, between 1933 and 1935, it did a remarkable job despite political infighting. But when federal relief programmes were reorganized in 1935 and the Department of Agriculture took over food assistance policies, then the renamed Federal Surplus Commodities Corporation

became more a tool for boosting the incomes of commercial farmers than for feeding the indigent. And this approach continued in the postwar years. The author draws on the archival records of the agencies concerned, manuscript collections of politicians, contemporary published sources and a broad range of secondary literature to produce discussions of policies and details of decisions. At times the book gets bogged down in digesting the primary records, while at other times general explanations of events using secondary sources flourish. There is an uneasy balance between the two types of information, and some of the finer points on bureaucratic decision-making might have been made more effectively in articles. Nevertheless students of the New Deal and of social welfare history and policy will welcome the insights which the volume can throw on an aspect of the American past which has received little attention.

MARGARET WALSH

Shorter Notices

U MATTEJIET et al (eds), Lexikon des Mittelalters, Vol 3, Lieferungen 7–10. Artemis Verlag, Munich, 1986. pp. 1345–2219. 39 DM each fascicule.

This dictionary of medieval history (AD 300–1500) in seven volumes, with the completion of the third volume, has nearly reached the half-way mark. It appears rapidly at regular intervals, maintaining the highest standards of scholarship, and is always strictly relevant. Each volume contains ten fascicules of 112 sides, each costing DM 39. Articles in volume 3, fascicules 7–10, of interest to agricultural historians are: Drechsler, Dreifeldwirtschaft, Driesch, Drost, Düngung, Eberraute, Écuyer, Egge, Ei, Eibisch, Eiche, Eichenmistel, Eichhörnchen, Eidechsen, bäuerliches Eigen, Eigentum, Einfriedung, Eisenhut, Eisenkraut, Elch, Elephas, Enclosure, Endivie, England (pp 1924–1994), Enzian, Erbrecht, Erbe, Erbschaft (pp. 2101–2116), Ernährung, Erntegeräte. Bibliographies extend to 1985.

D J DAVIS

V M MIKKELSEN, *Borup: Man and Vegetation*. National Museum of Denmark, Copenhagen, 1986. 48 pp. 4 maps; 7 illus, 6 tables. DKr 150.

Sub-titled 'Agricultural influence on the development of vegetation in the vicinity of the deserted Viking Age settlement Borup in Zealand, Denmark', this is an excellent example of the integration of palaeobotanical investigations of peat deposits with intensive archaeological and historical investigations. The latter in combination with radiocarbon dating give a reliable chronology for the pollen record.

Comparisons with the few available maps show that the corrected pollen spectra give a good estimate of the relative proportions of forest and open land in a circular area of 100 hectares, thus making it possible to suggest the proportions of these vegetation types in periods for which no maps are available.

The pollen diagrams show the effect of human interference on the vegetation including the influence of clearing, burning, grazing by cattle and pigs, and arable cultivation. This interference extends from the first farmers about 3800 BC to the present, the period of most intense activity being from the setting up of the Viking farm in about AD 700 until about AD 1250.

There is an interesting discussion of the significance of finds of cornflower, *Centaurea cyanus*, with the conclusion that, in Denmark, winter sowing of cereal crops was either not practised at all, or only very rarely, until about AD 1000.

D D BARTLEY

JOSEPH ARCH, *From Ploughtail to Parliament*. Century Hutchinson Ltd: The Cresset Library, 1986. xxx + 412 pp. £5.95 (pbk).

This book is a facsimile reproduction of the first (1898) edition of Joseph Arch's autobiography, with a new title and a brief introduction by Alun Howkins. It is a vigorous, partisan account of the events which led, in 1872, to the creation of the first national union among the agricultural labourers. The hostility the fledgling organization encountered from farmers and landowners is recounted in graphic terms that owe much to Arch's earlier experience as a Primitive Methodist local preacher. Overall the book strongly reflects the author's own character, with all its stubborn power and self-opinionated vanity.

There is little doubt that Arch was the main inspiration behind the new union. He was also a courageous fighter for the labourers' legal and political rights. But he undervalued the help he received from other, less charismatic, fellow unionists. The Radical wing of the Liberal Party lent support, too, seeing this as a way to 'dish' the Conservatives in their traditional rural strongholds by winning the labourers to their cause. The 1885 general election, when Arch himself

was elected to Parliament as a Liberal MP, appeared to justify their policy; but subsequent internal divisions prevented it from reaching fruition.

This autobiography is required reading for anyone wishing to understand labouring life in the Victorian countryside and its republication at modest price is to be welcomed. However, the new edition would have benefited from a longer introduction, analysing the powerful regional pressures which ultimately undermined the attempts to create a unified rural trade union, and the effects of agricultural depression, which fatally weakened the organization's ability to negotiate successfully with employers. It was these factors – not the 'moral' weakness of the labourers, as Arch himself suggests – that brought about the union's demise in the mid-1890s.

PAMELA HORN

'PETER GURNEY' (C S SMITH), *Shepherd Lore*. Wiltshire Folk Life Society, Avebury, 1985. 140 pp. Illus. £5.

The nineteen-thirties formed the last decade during which it was possible to record traditional shepherding practices in southern England, and one might suppose that with W H Hudson's *A Shepherd's Life* (1910); W Johnson's *Talks with Shepherds* (1925) and B Wills's *Shepherds of Sussex* (1938), much of what is known is in print; yet here we have a new book from the period.

The twenty-eight newspaper articles comprising this account were discovered by Jean Morrison, editor of the Wiltshire Folk Life Society who took steps to trace the identity of the author and to arrange for their re-publication in book form. Peter Gurney turned out to be the agricultural journalist C S Smith, who in the nineteen-thirties, when the articles were written, was an observant young reporter with the *North Wiltshire Herald* in which they were first published.

The articles form a valuable account of the 'Golden Hoof' folding of Down sheep on Wiltshire's chalk upland between the wars. Covering such topics as lambing, shearing, sheep fairs and bell making, through association with the mostly aged shepherds involved the customs are brought to life in a personal way. The book is well illustrated with photographs from the families of the personalities included, as well as with archival material from the Institute of Agricultural History, Reading.

It is a pity that no index was prepared for this material which could be usefully compared with W H Hudson's account referring to the southern part of the county written twenty years before.

M L RYDER

A G STREET, *Country Calendar: Farming Life in the 1930s*. OUP, 1986. xvi + 231 pp. 27 illustrations by Lionel Edwards. £3.95.

By the mid-1920s Arthur Street was losing money as a cereal farmer on the Wiltshire chalk downs. In 1928 he converted his 300-acre holding to pasture, became an early practitioner of A J Hosier's open-air system of milking, and built up a profitable dairy herd. He wrote his first book – for fun – in 1931; it was quickly followed by several more books and numerous articles. His writing became a serious business and Street soon felt that 'I must now be careful when I set pen to paper'.

Country Calendar, published in 1935, was written to recapture the 'glorious fun' of composing his first book. It is the record of this busy farmer–writer's life from October 1934 to September 1935, with each of the twelve chapters devoted to a different month in the year. Part of the book's charm lies in the fact that it is not exclusively agricultural. The Thelwellian world of adolescent pony riders, a day's partridge shooting, foxes, hounds, and numerous fishing trips are all amiably and unaffectedly described. Street was progressive in his farming methods and refreshingly unsentimental about the changes affecting British agriculture in the 1930s: more livestock on more temporary pasture was the way to achieve prosperity; and the displacement of horses by modern machinery should not be a matter for excessive nostalgia.

The author's love of the land suffuses every chapter of the book, but never cloys. There is a good short introduction by John Cherrington, and Lionel Edwards' original illustrations are unobtrusively excellent.

C J HOLMES

WENDY OWEN (ed), *The Wheat King: Selected Letters and Papers of A J Cotton, 1888–1913*. The Manitoba Record Society Publications, VII, Winnipeg, 1985. xxxvii + 166 pp. Illus. No price given.

Wendy Owen's selection from the letters and papers of Almon James Cotton extend over the quarter century he took a pioneering role in Manitoba's economic and social transformation from Hudson's Bay Company frontier fur-trading reservation to premier wheat raising province of the Dominion of Canada. Cotton came, aged thirty, from Ontario to achieve agrarian success on a scale he never could have attained in the older province, his eye for land and hard effort enabling him to build up something of a patriarchal kingdom for himself and his family.

The pioneer farmers of Manitoba had to face some 'hard' winters followed by late springs, but their greatest problems were getting their grain to consumers, a somewhat similar 'distribution' perplexity to that of the EEC today. Roads and railways had to be constructed to the prairies, and the latter particularly charged dear for their services. Labour shortages and also those of horses hastened farm mechanization.

Cotton's active promotion of immigration resulted

in numerous letters to prospective incomers of various ethnic origins. He favoured Ontario- and then other American-born, but welcomed refugee Russian Dukhobors if they accepted lands which seemed to be attracting no immediate interest on the part of English-speaking settlers. He also preferred members of his own Methodist Church, albeit demanding of ministers, as of farming folk, active physical exertion and missionary zeal rather than sedentary ratiocination.

JOHN ROWE

DAVID GRIGG, *An Introduction to Agricultural Geography*. Hutchinson, 1984. 204 pp. £12.95 (hbk); £7.50 (pbk).

A common criticism of the discipline of geography is that it is a jack of all trades. This book demonstrates that in fact this can be one of the subject's strengths; it is the breadth of coverage in this introduction to the study of agriculture that makes the book of more general interest than comparable texts written from the perspective of an agriculturalist or an agricultural economist. Given Professor Grigg's evident mastery of his trade this book can thus be read with profit by agricultural historians to remind themselves of some of the general issues involved in the study of agricultural systems.

Professor Grigg considers that the aim of agricultural geography is 'to describe and explain spatial variation in agricultural activity over the earth's surface'. He does this not by classifying agricultural types (the approach of his *Agricultural Systems of the World* published in 1974), nor by looking at ways of analysing agricultural change over time (the theme of his *Dynamics of Agricultural Change* published in 1982), but by presenting a list of 'explanatory factors' that can account for the great diversity of agriculture. These factors are grouped under three headings: the economic environment, the physical environment, and the social, political and cultural environment. Thus the discussion ranges widely across such topics as the concept of diminishing returns, food chains, and the impact of religion upon agricultural production.

While the issues involved in these topics are skilfully summarized and the inevitable brevity of coverage is offset by very useful guides to further reading, some readers might be surprised by the book's omissions. The nature of agricultural regions is not discussed for example, although this theme, along with several others, is covered in other texts on agricultural geography and in other work by Professor Grigg. A more serious criticism is a failure to examine the interrelationships between the various 'explanatory factors'. Admittedly this is a difficult task but a weak conclusion of just a single page is a disappointing end to a book that raises so many interesting issues.

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VOLUME 35 1987
PART II

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Money and Prices in England from Henry II to Edward III
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Book Reviews

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Money and Prices in England from Henry II to Edward III

By N J MAYHEW

IN A recent article, Dr Bridbury has done monetary history and numismatics the great service of placing it at the centre of the debate about the behaviour of prices in England before the Black Death.[1] It is perhaps not too great a simplification of his paper to say that his preliminary examination of the subject led him to expect money supply to provide some crucial answers, but in the end his expectations were sorely disappointed. It is hoped that the following paper may go some way to satisfy his expectations of monetary history and to alleviate his disappointment in it. It is argued that the study of the money supply does significantly aid our understanding of the behaviour of prices, as Bridbury expected it should. To this end recent work on money supply is summarized, which provides additional data not used by Bridbury. Additionally a technique is advanced which may aid the analysis of price trends by neutralizing the effect of variable yields. As Bridbury observes, too often in the past yields have been invoked in one year to explain an unusual price, but ignored in others when the yield factor was equally important.[2] It is suggested that if adequate and consistent allowance is made for variable yields, and up-to-date information on money supply employed, monetary history can indeed make an important contribution to the prices debate.

A number of caveats is called for, however. Year-by-year analysis of price changes, from aggregated data primarily intended to be viewed in a broader sweep, may at times be asking too much of the price information at our disposal. And secondly it must always be remembered that the medieval economy was not a perfect free market. For both these reasons we should not perhaps look for too perfect a correspondence between our theoretical expectation and the actual behaviour of prices as far as they are known to us.

A further important limitation of the analysis which follows concerns credit, for which no allowance has been made. There can be no doubt that in the period under consideration it did come to play an important part not merely at international but also at local level. It seems clear, however, that credit — in the sense of cash advances — followed the behaviour of the money supply. Lending does not contract in times of a glut of coin or expand in times of scarcity. Thus credit reflected the supply of coin rather than compensated for it. However, most peasant credit probably did not involve cash advances. Manor court rolls suggest that a clear majority of peasant debt concerned credit sales or unpaid wages.[3] In a relatively locally-based and immobile society shortage of coin was most effectively eased by doing without it — by owing money for goods and services taken unpaid for. This raises the whole question of the nature of payments and demand for coin in medieval society which were expressed in the Fisher equation (MV=PT) as Velocity of

[1] A R Bridbury, 'Thirteenth century prices and the money supply', *Ag Hist Rev*, 33, pt 1, 1985, 1–21.

[2] *Ibid*, 15–17.

[3] R H Hilton, *The English Peasantry in the Later Middle Ages*, Oxford, 1975, 46. For the late fourteenth and fifteenth centuries, Elaine Clark, 'Debt litigation in a late medieval English vill', in *Pathways to Peasants*, ed J A Raftis, Toronto 1981, 247–79, especially at 254–5, is useful since it supports similar conclusions with a statistical breakdown of debt cases at Whittle, Essex 1382–1490. Loans of cash were involved in only 8.8% of cases, while cases involving labour and services accounted for 23.7% and 46.6%.

circulation (V) and the level of Transactions (T). It is perhaps safe to assume that both V and T were rising, and to some extent therefore cancelled one another out, but for our present purposes I have confined my attention to M and P because they can be quantified, however approximately.

Another limitation of the present paper is that this study concerns only wheat prices. Obviously a thorough review of the prices of other grains and of livestock and livestock products would extend the scope of this paper beyond reasonable limits, but the point is an important one because it has been suggested that variable price movements for different commodities argue against the possibility of a monetary impact on prices. The influence of money supply on prices would, it is argued, have been general. Some extremely sophisticated versions of the quantity theory of money are now available,[4] but this particular objection was forcefully disposed of long ago.[5] In fact different commodities have variable elasticities of supply and demand. A man experiencing a change in purchasing power does not continue to buy commodities in the same proportions as he did before his change in circumstances. However, it is not in any case the contention of this paper that money supply was the only important influence on prices, but rather that monetary factors should always be given serious consideration. To this end, an estimate of English money supply is an essential first step.

I

Information on the money supply has the advantage of being quantifiable, and of relating to the whole country rather than to a restricted geographical or social segment. Thus when Henry III ordered the recoinage of the domestic money supply in 1247, half of it was struck at provincial mints.[6] It is true that the location of provincial mints does indicate a southern and eastern bias, but this largely reflects the distribution of population. The distribution of wealth as viewed through tax returns suggests that it was closely linked with the distribution of population,[7] and there is no evidence that by the thirteenth century the regions had the use of less coin than their population and economic life would have entitled them to.

The integrity of the English monetary system — that is the extent to which only English coin circulated in England — also makes it especially amenable to a quantitative approach. However, Bridbury has postulated the existence of a large body of extra coin in England, so it is necessary to look closely at his suggestion that 'we must expect to find that there was a great deal more foreign money or unauthorized English money in the form of counterfeit or token money circulating than we had thought possible; and we must also expect to find that the stock of money accumulated in the economic system as a result of previous mint issues was much larger than we were given to understand that it could have been'.[8] In fact this surmise is offered as an explanation for the failure of prices to respond to monetary factors in the expected way, and it is the contention of this paper that prices did so respond. If that can be demonstrated, the logical foundation for this hypothesis disappears. Nevertheless, so that full confidence can be placed in the estimates of money supply which follow, it is necessary to dispense with these phantom sources of extra money. This can best be done by reference to the finds which provide

[4] Dennis O'Flynn, 'Use and Misuse of the Quantity Theory of Money in Early Modern Historiography', in *Münzprägung, Geldumlauf und Wechselkurse*, Akten des 8th International Economic History Congress, Section C7, Budapest, 1982, eds Eddy von Cauwenberghe and Franz Irsigler, Trier, 1984, 383–417.

[5] W C Robinson, 'Money, Population and Economic Change in Late Medieval England', *Econ Hist Rev*, 2nd ser, XII, 1959, 63–76; R B Outhwaite, *Inflation in Tudor and Early Stuart England*, 1969, 45–6.

[6] And this is to count Canterbury as a metropolitan mint.

[7] R E Glasscock, *A New Historical Geography of England before 1600*, ed H C Darby, 144. Also R A Donkin, *ibid*, 81.

[8] Bridbury, *op cit*, 18.

many thousands of examples of medieval English money of all types for our examination.

Foreign coins are found in later medieval England, but except at certain well known periods — the 1290s (crockards and pollards), the 1340s (lusshebournes), the 1400s (galley halfpence) — they are not quantitatively significant.[9] The fact that when they do intrude more significantly we meet them in the documents, in the hoards, and as stray finds, suggests that if and when foreign coins do play an important part then we know about them. A partial exception to this statement may perhaps be allowed in the case of gold. The documents suggest that Florentine and French gold may have been present in the City and at court in the early fourteenth century, and that this use of foreign gold may have encouraged Edward III to introduce his own gold coinage in 1344 and dictated the levels of valuation he chose for it.[10] The high individual value of florins (about 3*s* sterling) as opposed to silver pennies, may explain why they were not frequently lost and have not therefore been found in England. However, since English gold is found, it seems likely that Italian gold was never widespread in the country at large in the way that crockards, pollards, lusshebournes and galley halfpence were.[11] The finds do tell us enough about the circulating medium for us to say confidently that there was no large pool of foreign coin in England except at the limited periods of which we already know.

The question of counterfeit or token money may also be discussed in the light of the finds. Hoards might reasonably be expected to exclude such items, so stray finds are especially important. Jettons or casting counters have always been found in large numbers, and some date from the late thirteenth or fourteenth century. There is no evidence, however, for their use as money,[12] and we know nothing about any arrangements, formal or informal, for their convertibility with silver. Since many of these early English jettons were struck by the government (for use as counters in the exchequer) we might confidently have expected some contemporary recognition of their role as money if they had been used as such. Lead or pewter tokens are found, though not as commonly as jettons. They have been authoritatively associated chiefly with religious institutions, and with taverns, but it has been pointed out that they seem to have been used mainly as a 'chit-for-service' rather than as a fraction of a farthing with any wide currency.[13] Similarly counterfeits are found in small numbers in hoards, and as strays, especially in the Thames, but it is difficult to believe that they ever amounted to more than a tiny proportion of the total currency.[14]

Finally, Bridbury resurrects Postan's notion of accumulated silver stocks when he speaks of 'the stock of money accumulated in the economic system as a result of previous mint issues'. Between the accession of Henry II and the death of Edward I, the outward appearance of the coinage was altered four times, in 1158, 1180, 1247, and 1279. The alteration in design meant that the previous type could be effectively demonitized, since the old type was easily

[9] For crockards and pollards and lusshebournes see N J Mayhew, *Sterling Imitations of Edwardian Type*, 1983, and for galley halfpence see P Spufford, 'Continental coins in late medieval England', *British Numismatic Journal* (hereafter *BNJ*) 32, 1963, 127–39. For a later fifteenth-century example of the phenomenon see P Spufford, 'Burgundian double patards in late medieval England', *BNJ* 33, 1964, 110–17.

[10] Before the introduction of British gold coinage, facilities were established for the exchange of foreign gold for English silver. See N J Mayhew, in the forthcoming *History of the Mint*, CUP, ed C E Challis.

[11] Flemish nobles entered England in significant quantities at the end of the fourteenth and beginning of the fifteenth centuries, and examples have been found here. Spufford, 'Continental coins . . .', 129–32.

[12] Michael Prestwich, 'The crown and the currency: the circulation of money in the late thirteenth and early fourteenth century England', *Numismatic Chronicle* (hereafter *NC*), 142, 1982, 64.

[13] Michael Mitchener and Anne Skinner, 'English tokens c1200 to 1425', *BNJ*, 53, 1983, 29–77.

[14] Michael Mitchener and Anne Skinner, 'Contemporary forgeries of English silver coins and their chemical compositions: Henry III to William III', *NC*, 145, 1985, 209–36.

distinguishable from the new. The hoards from these two centuries demonstrate beyond a shadow of a doubt that over 95 per cent of the currency consisted of coins of the 'new' type appropriate to the date of the hoard.[15] Hoards from outside Britain, containing sterling do contain larger numbers of earlier types,[16] but this merely confirms our certainty that if earlier issues were still playing a significant part in Britain, the finds would tell us of it. In fact they do not. The numismatic evidence is quite clear on this point; England's money supply was totally dominated by issues of the current type. Indeed it is even possible to show that within the issue of a single type, more recent issues tend to predominate over the earlier coins, chiefly because over time large quantities of English coin were lost or carried abroad in trade and war.[17]

II

Confident, therefore, that the vast majority of the money circulating in England was official English coin, we may now advance to the estimates of the English money supply 1158–1351 which appear in Table 1.

Documentary evidence for mint output survives for England from the 1220s;[18] additionally, output under the earlier Angevins has been estimated[19] and estimates of the likely amount of coins in circulation — as distinct from output, much of which did not remain in circulation — are provided for a number of fixed points through the thirteenth and fourteenth centuries. Attention is drawn to the notes to the Table, which detail not only the sources of these estimates, but also point out that the individual figures are not always strictly comparable with one another. This is partly because different methods have been used to arrive at some of the figures, and also because provincial mint output is not always included. The general trend, however, is valid.

These estimates of the English currency are endorsed by the archaeological evidence for site finds of coins, collected and analysed by Rigold.[20] Rigold's evidence came from 100 archaeological sites, and his findings are summarized in Table 2. He originally provided totals of coin finds for ten coinage periods, of which only periods III to VI concern us now. Rigold also adjusted the raw coin find totals to give a mean loss per decade for each period. The total for period VI (Edwardian) was reckoned to be inflated by some 10 to 15 per cent by coins of Edwardian type used and lost after the end of that period.[21] The Edwardian totals have therefore been reduced by 15 per cent, giving an adjusted mean loss per decade of 23.8. The final row of figures in Table 2 shows the earlier phases as a proportion of the Edwardian total.

These figures for relative coin loss compare well with the estimates of total circulation (Table 1). There is perhaps some slight under-representation of Short Cross (1180–1247) finds compared with the estimates of circulation. To the extent that loss correlates with use, this may suggest that Short Cross supply was running ahead of demand, ie at this time they were making more than they were using. More extensive analyses of stray find evidence need to be made before conclusions of this sort can be pushed further.

[15] The English hoard evidence may most easily and quickly be surveyed by reference to J D A Thompson, *Inventory of British Coin Hoards AD 600–1500*, 1956, augmented for more recent finds by the *British Numismatic Journal*, the *Numismatic Chronicle* and *Coin Hoards*.

[16] N J Mayhew, *Sterling Imitations of Edwardian Types*, Appendix 2, lists foreign hoards containing Edwardian type sterlings; a number of these hoards also contain earlier types.

[17] N J Mayhew, 'Numismatic evidence and falling prices', *Econ Hist Rev*, 2nd ser, XXVII, 1974, 1–15.

[18] C E Blunt and J D Brand, 'Mint output of Henry III', *BNJ*, 39, 1970, 61–6 and C G Crump and C Johnson, 'Tables of bullion coined under Edward I, II, III', *NC*, 13, 1913, 200–45.

[19] D M Metcalf, 'A survey of numismatic research into the pennies of the first three Edwards', in *Edwardian Monetary Affairs, 1279–1344*, ed N J Mayhew, BAR 36, 1977, esp pp 6–7; N J Mayhew, 'Frappes de monnaies et hausse des prix de 1180 a 1220', in *Études d'Histoire Monétaire*, ed John Day, Lille, 1984, 159–77.

[20] S E Rigold, 'Small change in the light of medieval site-finds', in *Edwardian Monetary Affairs 1279–1344*, 59–80.

[21] Edwardian pennies, in contrast with earlier issues, continued in circulation during later periods because the *type* was not changed.

TABLE I

English currency estimates 1158–1377

Date	*Mint output*	*Estimated circulation*
1158–1180	£125,000[a]	
1180–1191	£300,000[b]	
1191–1205	£200,000[b]?	Heavy losses 1190–1204
		1205 *c*£250,000
1205–1210	£240,000[b]?	
1210–1218	£200,000[b]?	1218 *c*£300,000[c]
1220–1247	£667,000[d]	1247 *c*£400,000[f]
1247–1250	£552,827[e]	
(Scotland *c*1250		*c*£50,000–80,000[j])
1250–1278	£1,154,242[g]	1278 *c*£674,053[i]
(Scotland *c*1280		*c*£130,000–180,000[j])
1279–1290	£1,172,655[h]	
		Heavy Loss 1294–8
1290–1299	£51,280[k]	1298 *c*£400,000
		plus £200,000[l] crockards
		and pollards
1299–1307	£636,432[m]	
1307–1327	£580,516[n]	1311 *c*£1,100,000[p]
		1324 *c*£1,100,000
1327–1343	£37,861[k]	Heavy losses 1337–43
1343–1351	£94,734[k]	1350 *c*£500,000[p]

For full details of these publications, see the notes to the text.

a. Metcalf, *Edwardian Monetary Affairs*

b. Mayhew, *Études d'Histoire Monétaire*

c. The recoinage of 1205 consisted in large measure of recoining clipped and worn Short Cross pennies of the period 1180–1204. Coin was exported extensively by the Crown in the interests of war, ransom, and diplomacy in the period 1180–1218 and sterling was also no doubt carried abroad in trade. It is for all these reasons that an estimated output of some £940,000 in the period 1180–1218, resulted in an estimated circulation of only £300,000 around 1218.

d. Mint output figures for London and Canterbury, Blunt and Brand.

e. Archibald, *Edwardian Monetary Affairs*, p 172. This estimate is based on the surviving mint output figures for London and Canterbury, with an allowance for likely provincial mint output during the Long Cross recoinage.

f. This is an estimate of the Short Cross coinage available for recoinage 1247–50. During the 1240s about £50,000 of foreign silver was coined at London and Canterbury each year. Therefore, allowing for, say, £150,000 foreign silver coined 1247–50, the rest of the £552,827 estimated output during this recoinage may have been old Short Cross in circulation *c*1247. Because of wear, however, it is likely that more than £400,000 of Short Cross coin was required to make £400,000 of Long Cross.

g. Archibald, *op cit*, p 174

h. Archibald, *op cit*, p 182

i. Archibald, *op cit*, p 183

j. Mayhew, *Coinage in Medieval Scotland*, ed D M Metcalf, Oxford 1977, p 92

k. Crump and Johnson, London and Canterbury mints only.

l. Mayhew, *Sterling Imitations of Edwardian Type*, 1983, p 24

m. Crump and Johnson, with no allowance for Bury and Durham mints whose accounts have not survived.

n. Crump and Johnson, amended. London and Canterbury only.

p. Mayhew, 'Numismatic evidence and falling prices in the fourteenth century', *Econ Hist Rev*, 2nd ser, 17, 1974, p 7.

Thus money supply in England increased dramatically at the end of the twelfth century, grew gradually through the thirteenth century, peaked sharply in the early years of the fourteenth century, and then fell back before the plague. The third quarter of the fourteenth century saw plentiful supplies of coin in England, though the very large quantities of gold struck relative to silver may have made the circulation somewhat top-heavy. The picture in Europe as a whole — at any rate as far as the date

ABLE 2
Abstract and summary of Rigold's site-find analysis

Rigold phase	*III*	*IV*	*V*	*VI*
Coin types	Late Henry I to Tealby	Short Cross	Long Cross	Edwardian
Dates	1125?–1180	1180–1247	1247–79	1279–1351
Totals found	26	60	39	196 (166.6)
Totals per decade	4.5	8.0	13.0	28.0 (23.8)
As a proportion of Edwardian loss	18.9	33.6	54.6	100

of the twelfth-century up-turn, and the sustained high levels of the thirteenth century are concerned — was broadly similar.[22]

III

The study of prices relative to money supply is complicated by the fact that cereal prices varied sharply from year to year chiefly because of variable harvests. The case of wheat makes a suitable study, since we know a good deal about wheat prices and yields.[23] Beginning from the assumption that wheat yields are a principal determining factor in wheat prices, yields (x-axis) taken from Titow's study of the weather on the Winchester estates were plotted against prices (y-axis). It is important to note that the yield of any year should be linked with the price of the following year. If yields were the only determining factor the resulting scatter graph would give a straight line, but of course other factors were at work as well. The amount of scatter on the graph about the overall trend line indicates the importance of those other factors. It is apparent, for example, that the likely price for any given yield moved, usually upwards, in the course of the period as a whole. A graph with a single trend line was therefore not as instructive as a series of lines for shorter periods. The resulting individual trend lines provide what may be regarded as mean prices for any given yield in each period (Fig 1). From this graph it is apparent that the general level of wheat prices was at its lowest in the first period (A) 1211–26, rose in the second period (B) 1232–77, fell away markedly in the third period (C) 1283–1302, peaked sharply in the fourth period (D) 1305–32, and fell back somewhat once more in the fifth period (E) 1335–50. While the general level of prices is indicated by the position of the trend line, the angle of the slope may also be important. Thus although prices were higher in the third period (C) 1283–1302 than in the first (A) 1211–26, the angle of the slope was steeper in the first period. The angle of the slope reflects the extent to which prices rose or fell in times of dearth or plenty. In other words, although the level of prices was generally lower in the first period, prices were more elastic, or responsive to changes in yields then, than in the third period. Usually a steeper slope was characteristic of rising prices, a flatter slope of falling prices. The angle of slope, as well as the general level of prices, needs to be examined, when using price data as a possible indicator of demand for coin relative to supply.

Within each separate period the scatter about the trend line is worth closer examin-

[22] See the essays by N J Mayhew and Peter Spufford in *Etudes d'histoire Monétaire*, ed John Day, 159–77 and 355–95.

[23] The evidence of prices and yields is taken from J Titow's 'Evidence of weather in the account rolls of the bishopric of Winchester 1209–1350', *Econ Hist Rev*, 2nd ser, XII, 1960, 360–407. Although in some respects the price evidence in D L Farmer, 'Some grain price movements in thirteenth century England', *Econ Hist Rev*, 2nd ser, X, 1957 is to be preferred, on balance it was thought better to take both yields and prices from the same source in the hope of minimizing regional and manorial variations. It should however be noted that even Titow's price and yield data are drawn from slightly disparate sources, the prices coming from five large manors, but the yields being taken from any Winchester manor where they are calculable for the year.

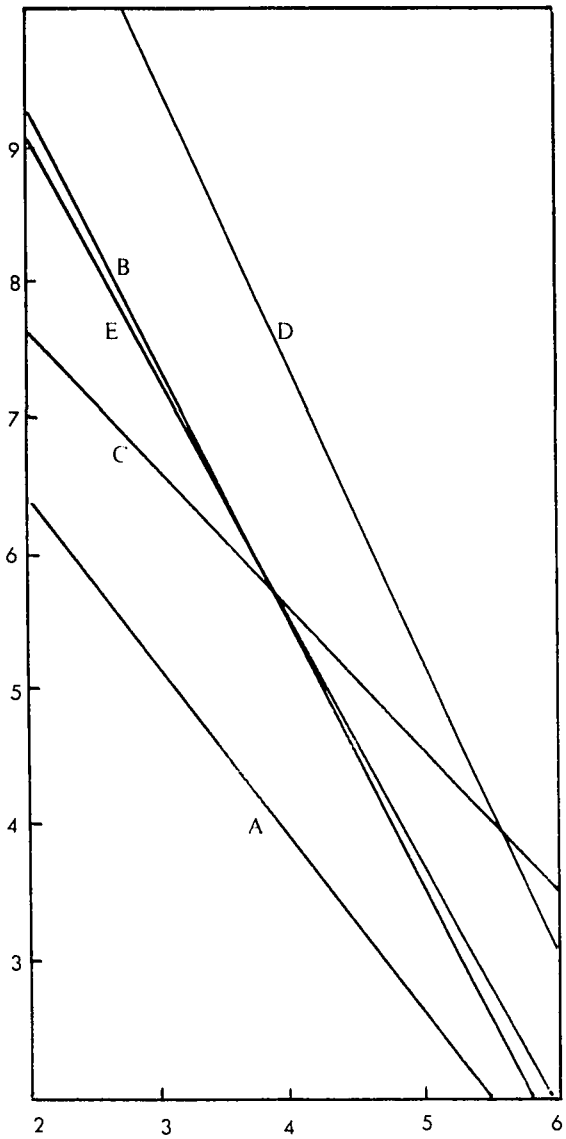


FIGURE 1
Trend-lines for the periods A to E, 1211–1350.
Prices in shillings (y-axis), yields (x-axis).

ation (see Tables A–E).[24] In period A it is clear that two years, 1211 and 1224, produced prices more than one standard error of estimate above or below the trend line. However, the standard error of estimate for this period was high (±1.28, just over 1*s* 3*d*), the data available for only seven years scarce, and there is a real possibility that the earlier years mark a crucial period of transition from lower twelfth- to higher thirteenth-century prices. It is clear that the general level of prices people were accustomed to ask or pay was important, and it took several years for prices to move onto a different plateau.[25]

In period B, 1232–77, the aberrant years (± at least one standard error of estimate from the trend) were 1236, 1253, 1254, 1257, 1271 and 1272. Again the standard error of estimate is high, indicating a wide scatter, but the larger number of years for which data is available is encouraging. The high prices of 1236 and 1257 are for the moment without explanation, but the behaviour of prices in 1253 and 1254, the most irregular prices of the period, may perhaps be explained in terms of post-recoinage deflation. The *Calendar of Patent Rolls* 1247–58 speaks of low prices at this time attributed to 'the present lack of money in England'.[26] A recoinage would be deflationary because the previous issue which was worn and clipped was replaced by fewer better coins.[27] The normal inflow of foreign silver to the mint could take some years to offset this deflation, especially if a significant proportion of coin brought to the English mint was subsequently re-exported. Monetary factors, chiefly a deteriorating and increasingly clipped currency, may help to explain the higher prices characteristic of the 1270s.

Period C, 1283–1302, had slightly less scatter, the standard error of estimate being just over one shilling. Irregular prices may

[24] The graph is based on a simple linear trend ($y = a + bx$). In some respects a parabola ($y = a + bx + cx^2$) provides a slightly better fit, but the graphs and the commentary which follow refer to a simple linear trend. I am most grateful for the help of Mr David Gomm with these calculations.

[25] Bridbury was also struck by these different price plateaux.

[26] *CPR 1247–58*, 426. I am grateful to J R Maddicott for this reference dated 1255, and also for drawing my attention to Matthew Paris, V (Roll Series), 660, 702 (1257–8).

[27] The deflationary effect of a recoinage is one factor which Bridbury anticipated, but was especially disappointed not to find. In fact Farmer observed this expected effect as long ago as 1969, and re-emphasized it as recently as 1983. (D L Farmer, 'Some livestock price movements in thirteenth-century England', *Econ Hist Rev*, 2nd ser, 1969, XXII, 12–13 and 'Crop yields, prices and wages in medieval England', *Studies in Medieval and Renaissance History*, 6, 1983, 139 and note 69.) We can agree with Bridbury in expecting this effect, and with Farmer in detecting it.

be noted for the years 1284, 1286, 1287, 1288, 1296, 1297, 1298 and 1302, though it is apparent that prices in the 1280s were usually below the trend line, while those of the 1290s were above it. If a little more data had been available it might have made sense to divide the period in two. It is possible that post-recoinage deflation arising from the replacement of the old coinage with rather fewer coins of better weight may have contributed to the low prices of the 1280s, while this was also probably a period of considerable illegal export of sterling.[28] In the 1290s crockards and pollards and widespread purveyance and government spending at home seem to have inflated prices, though on the other hand it is surprising that the extensive export of coin by government did not depress prices somewhat.[29]

The dramatic rise in prices in period D, 1305–32, has already been noted and studied by Mavis Mate.[30] By regressing prices against yields we can confirm Dr Mate's assertion that the high prices of this period were not a response to poor yields. The calculations for this period exclude the famine years 1315 and 1316. The inclusion of data from these years distorts the trend considerably; by excluding the famine, the resultant trend line has a standard error of estimate of less than one shilling (0.98) as opposed to about 1*s* 6*d*. With the famine data excluded, prices are still far higher than anything experienced before, and the slope of the trend far steeper. Aberrant prices occurred in 1306, 1307, 1309, 1327, 1330 and 1331. The low prices of 1306 and 1307 may mark the kind of transition from one price plateau to the next already noted above. Mint output was just beginning to soar at this time. The huge price of 1309, despite a good yield, most probably results from this massive surge in mint output. Prices went even higher in 1310, but with a much poorer yield this price is closer to the trend line of the period. There is some evidence of mild deflation in the later 1320s, when mint output had almost dried up, but two very high prices were recorded in 1330 and 1331. That for 1331 may probably be explained by the severe drought experienced in eastern England that year.[31] Yields on the Bishop of Winchester's estates in central southern England were not affected, but if regional shortages promoted inter-regional transport of grain the general level of wheat prices could have been inflated even in areas of reasonable yield.

In the final period E, 1335–50, the standard error of estimate was at its lowest (0.40 shilling), and the scatter accordingly narrow. The general level of wheat prices and the angle of slope shows a marked reduction from the great inflationary period which preceded it. The aberrant years were 1339, 1341, 1346, 1347, and 1350. The low prices of 1339, 1341 have already been noted by Michael Prestwich,[32] and interpreted in terms of monetary shortage resulting from a period of very low mint output coinciding with a time of extremely heavy government expenditure abroad. He interprets the decision to raise a tax in kind in the same light, and Maddicott has endorsed these views.[33] This scarcity seems to have been at least partially relieved by the reduction in the weight of the penny and the introduction of gold coinage in 1343/4, but the unusually (for this fifth period) high prices of 1346

[28] N J Mayhew, *Sterling Imitations of Edwardian Type*, 1983, 22.

[29] Mavis Mate, 'Monetary policies in England, 1272–1307', *BNJ*, 41, 1972, 34–79 and 'The impact of war on the economy of Canterbury cathedral priory, 1294–1340', *Speculum*, 57, 4, 1982, 766–8.

[30] Mavis Mate, 'High prices in early fourteenth-century England: causes and consequences', *Econ Hist Rev*, 2nd ser, XXVIII, 1975, 1–16.

[31] I am most grateful to Mavis Mate for this point, revealed by her work on the estates of Canterbury Cathedral Priory. See especially her paper entitled 'The estates of Canterbury Cathedral Priory before the Black Death 1315–1348', in *Studies in Medieval and Renaissance History* (1985). Dr Mate also notes extensive purveyance at this time on the Canterbury estates, *ibid*, note 28. Naturally purveyance was more severe after 1333.

[32] M Prestwich, 'Currency and the economy of early fourteenth-century England', in *Edwardian Monetary Affairs 1279–1344*.

[33] J R Maddicott, *The English Peasantry and the Demands of the Crown, 1294–1341*, Past and Present Supplement 1, Oxford 1975, 48–50. Dr Maddicott marshals an impressive body of contemporary witness to the shortage of coin, its effects on prices, and the choice of a tax in kind.

and 1347 may perhaps be explained partly in terms of very heavy government spending on the provisioning of Calais.[34] The aberrant price of 1350 no doubt reflects the dislocation of production and the market arising from the plague.

It is important not to press this analysis too far. The trend line is only an artificial 'norm', and the division into periods, although it seems to fit the evidence, is arbitrary.[35] It is also important to remember that medieval society was not a perfect market, and that the price data (based on only five large Winchester manors) may not always be fully representative. Unexplained deviations from the norm are common enough to make it clear that even in years where the behaviour of wheat prices does seem explicable, many unseen factors were also no doubt at work. With these reservations in mind, however, the analysis is offered as a means of looking at prices of wheat with the yield factor largely neutralized. The evidence does seem to suggest that demand for money did adjust, albeit rather slowly and imperfectly, to changes in supply by inflating and deflating prices. Greater price elasticity may correspond with periods of increased monetary supply relative to demand.

IV

If one relates the general level of wheat prices in these periods to the estimates of money supply advanced at the beginning of this paper, one may detect some measure of broad correspondence. As Bridbury has noted, the sudden late twelfth-century surge in prices has every appearance of monetary inflation, and will not easily be reconciled with the sort of gradually expanding demand to be expected from population growth.[36] Had Bridbury extended his enquiry beyond the thirteenth century he would perhaps have found the suddenness of the early fourteenth-century price boom pushing him towards a similar conclusion.[37] Between these two price leaps, early thirteenth-century prices and money supply both seem to have been significantly above twelfth-century levels and below the levels achieved later from the middle of the century. After the great inflation of the early fourteenth century both prices and money supply receded in the twenty years before the Black Death.[38] After the plague, the puzzling buoyancy of prices despite the drastic reduction in population and demand finds its simplest explanation in the increased quantities of coin available per head of population.

It is therefore suggested that both in the long-term trend, and in its short-term effects, especially at times of recoinages, monetary factors may have had an important effect on prices. It may also be suggested that both through its effect on prices, and directly by increased or reduced availability of coin, changes in money supply may be relevant to historians pursuing other questions of social and economic organization. Long ago P D A Harvey attributed the English experiment in high farming to the great inflation of 1180–1220.[39] More recently Spufford has written of a thirteenth-century economic revolution across Europe as a whole, fuelled in large part by a booming money supply.[40] It may be that the historians of markets, or labour services,

[34] Mavis Mate, 'The estates of Canterbury Cathedral Priory before the Black Death 1315–1348', *loc cit*. I am grateful to Dr Mate for kindly allowing me a preview of this paper.

[35] When 1232 was moved from the second period to the first, the correlation for the first group improved, but that for the second suffered correspondingly. The degree of scatter seems to be such that a division of periods based chiefly on the availability of the data seems as good as any other.

[36] See also P D A Harvey, 'The English inflation of 1180–1220', *Past and Present*, 61, 1973, 26–9.

[37] See M Mate, 'High prices in early fourteenth century England: causes and consequences', *Econ Hist Rev*, 2nd ser, XXVIII, 1975, 1–16.

[38] D L Farmer, 'Crop yields . . . ', *Studies in Medieval and Renaissance History*, 6, 1983, 139. Farmer accepts a monetary inflation for both the inflations of 1180–1220 and 1304–1311, and the deflation of the 1330s and 40s.

[39] P D A Harvey, *op cit* (note 36 above).

[40] Peter Spufford, 'Le rôle de la monnaie dans la révolution commerciale du XIII[e] siècle', *Études d'Histoire Monétaire*, ed John Day, Lille, 1984, 355–95.

or taxation, or professional armies also need to give greater attention to the question of availability of coin. The matter is not straightforward: did a larger money supply facilitate money rents or through inflation encourage the exaction of labour services? It is by no means clear how the availability of coin will have affected methods of payment, or indeed whether an expanded money supply did make coin more generally available or merely inflated prices. Yet given that the English population of 1300 could not have conducted its business as it did with the money supply of 1160, it may well be that monetary questions and the numismatic data through which they may be approached would justify further historical research.

Appendix: Price Analysis by Period

A: 1211–1226

x = yield y = price
curve type: y = a + bx, where a = 8.89 (y intercept)
and b = −1.27 (coefficient of slope)
Index of determination = 0.11
Correlation coefficient = 0.34

Year	*Yield* x	*Price* y *(actual)*	*Price* y *(calculated)*	*Difference*
1211	3.17	2.70	4.88	−2.18
1218	2.97	4.63	5.14	−0.51
1219	3.53	3.44	4.43	−0.99
1220	3.18	5.73	4.87	0.86
1224	3.01	6.53	5.08	1.45
1225	3.86	4.93	4.01	0.92
1226	2.81	5.78	5.34	0.44

Standard error of estimate = 1.28

B: 1232–1277

x = yield y = price
curve type: y = a + bx, where a = 13.05 (y intercept)
and b = −1.90 (coefficient of slope)
Index of determination = 0.40
Correlation coefficient = 0.64

Year	*Yield* x	*Price* y *(actual)*	*Price* y *(calculated)*	*Difference*
1232	4.58	4.10	4.36	−0.26
1236	5.11	4.88	3.36	1.52
1245	4.20	3.83	5.08	−1.25
1246	3.33	6.67	6.73	−0.06
1247	3.49	6.58	6.43	0.15
1248	4.73	3.50	4.08	−0.58
1252	3.97	5.58	5.52	0.06
1253	4.02	3.33	5.42	−2.09
1254	3.77	3.17	5.90	−2.73
1257	3.50	8.17	6.41	1.76
1265	3.97	4.50	5.52	−1.02
1268	3.84	5.50	5.77	−0.27
1271	3.33	8.58	6.73	1.85
1272	4.63	5.58	4.27	1.31
1273	3.42	6.63	6.56	0.07
1274	3.32	7.50	6.75	0.75
1277	4.44	5.42	4.63	0.79

Standard error of estimate = 1.29

C: 1283–1302

x = yield y = price
curve type: y = a + bx, where a = 9.68 (y intercept)
and b = −1.03 (coefficient of slope)
Index of determination = 0.23
Correlation coefficient = 0.47

Year	*Yield* x	*Price* y *(actual)*	*Price* y *(calculated)*	*Difference*
1283	2.79	6.83	6.82	0.01
1284	3.43	4.83	6.16	−1.33
1285	3.32	6.42	6.28	0.14
1286	3.46	4.67	6.13	−1.46
1287	4.65	3.25	4.91	−1.66
1288	4.16	3.92	5.42	−1.50
1289	3.37	6.08	6.23	−0.15
1290	3.06	7.58	6.54	1.04
1291	3.54	6.58	6.05	0.53
1292	3.49	6.67	6.10	0.57
1296	4.40	6.42	5.17	1.25
1297	3.89	7.42	5.69	1.73
1298	4.90	5.75	4.66	1.09
1299	3.85	6.42	5.73	0.69
1300	3.64	5.92	5.95	−0.03
1301	4.20	5.58	5.37	0.21
1302	3.95	4.50	5.63	−1.13

Standard error of estimate = 1.07

D: 1305–1332

x = yield y = price
curve type: y = a + bx, where a = 15.79 (y intercept)
and b = −2.12 (coefficient of slope)
Index of determination = 0.54
Correlation coefficient = 0.73

Year	*Yield* x	*Price* y *(actual)*	*Price* y *(calculated)*	*Difference*
1305	4.37	6.00	6.54	−0.54
1306	4.08	5.08	7.15	−2.07
1307	3.95	6.42	7.43	−1.01
1308	3.91	8.17	7.51	0.66
1309	4.50	8.33	6.26	2.07
1310	3.23	9.08	8.95	0.13
1311	4.51	6.08	6.24	−0.16
1312	4.30	5.75	6.69	−0.94
1313	4.66	6.25	5.92	0.33
1314	4.14	7.42	7.02	0.40
1317	3.33	9.17	8.74	0.43
1318	5.07	4.75	5.06	−0.31
1320	3.94	6.67	7.45	−0.78
1324	3.62	7.83	8.15	−0.30
1325	4.94	5.67	5.33	0.34
1326	5.15	4.75	4.89	−0.14
1327	4.28	5.75	6.73	−0.98
1328	3.83	7.25	7.68	−0.43
1329	4.18	7.17	6.94	0.23
1330	3.99	8.75	7.34	1.41
1331	4.08	9.17	7.15	2.02
1332	4.45	6.00	6.37	−0.37

Standard error of estimate = 0.98

E: 1335–1350

x = yield y = price
curve type: y = a + bx, where a = 12.66 (y intercept)
and b = −1.78 (coefficient of slope)
Index of determination = 0.69
Correlation coefficient = 0.83

Year	*Yield* x	*Price* y *(actual)*	*Price* y *(calculated)*	*Difference*
1335	3.85	5.92	5.79	0.13
1336	4.19	4.83	5.19	−0.36
1337	4.88	4.42	3.96	0.47
1338	4.67	4.58	4.33	0.25
1339	2.27	7.17	8.61	−1.44
1340	4.11	4.75	5.33	−0.58
1341	3.26	5.33	6.84	−1.51
1342	4.14	4.83	5.28	−0.45
1343	3.25	7.33	6.86	0.47
1344	4.89	4.42	3.98	0.48
1345	4.04	4.83	5.45	−0.62
1346	3.12	8.08	7.09	0.99
1347	3.36	7.75	6.67	1.08
1348	4.03	4.58	5.47	−0.89
1349	3.25	7.08	6.86	0.22
1350	2.71	9.59	7.83	1.77

Standard error of estimate = 0.90

Crown Property and the Land Market in South-East Wales in the Sixteenth Century[1]

By MADELEINE GRAY

It is now nearly twenty years since John Kew disrupted the placid lives of those engaged in the compilation of interminable theses on 'The dispersal of monastic land' (or, more recently, 'of Crown land') 'in Blankshire' with his declaration that it was pointless to study the market in Crown property in isolation from the land market as a whole.[2] From his findings on the land market in Devon it appeared that conclusions on the social and economic mobility of individuals and groups based on their acquisition of Crown land might grossly misrepresent the true position since they ignored the extent to which such individuals and groups may have sold other property, whether to invest in Crown land or for other reasons, and also fail to take account of the purchase of land from other sources by different individuals or groups. Dr Kew was fortunate in that his chosen county had not only ample collections of private deeds but also a unique set of Quarter Sessions enrolments of conveyances by bargain and sale under the Statute of Enrolments. In the absence of such sources, particularly in the counties of the north and west where even private deeds for this period are scarce, historians have continued to study the market in Crown property as a well-documented segment of the whole land market, though with increasing awareness of the limited scope of their findings.

The paucity of sources is particularly unfortunate since we have no justification for assuming that the pattern of landholding and land ownership which prevailed in the better-documented lowland areas of south-east England necessarily extended to the upland zone of the north and west; this is even more so for Wales, where the Acts of Union of 1536 and 1543 were only partly successful in imposing English land law in a country whose concepts of land ownership were, in theory, completely different. It is possible to supplement the information on this area from deeds enrolled in central courts of record, notably those on the dorse of the Close Rolls,[3] but these enrolments are uncalendared and largely unindexed and as a result present considerable difficulties to the researcher. One way of approaching the problem, the approach which has been adopted in this study, seemed to be to use these enrolled deeds and such estate papers as have survived to place the acquisition of Crown land by local families in the context of their acquisitions from other sources and the development and administration of their whole estates. Such an approach would be facilitated by the brief indexes to the Close Rolls compiled at the time of enrolment, which index purchasers of property throughout the sixteenth century and vendors after 1574. To confine the study to

[1] This article is based on the writer's thesis 'The dispersal of Crown property in Monmouthshire, 1500–1603', Wales PhD 1984 ch. 3 (ii). For details of the process by which the Crown's estate in the county was sold off, see ch. 3 (i) of the same thesis. The old county name of Monmouthshire has been used throughout, as Gwent, historically speaking, refers only to part of the modern county of that name, and most sources relate to the old county boundaries.

[2] 'The land market in Devon, 1536–1558', Exeter PhD thesis, 1967; see also *idem*, 'The disposal of Crown lands and the Devon land market, 1536–58', *Ag Hist Rev* 1970, 93–105.

[3] For a more detailed study of these, see the present writer's article 'The Close Rolls as a source for sixteenth-century history', *Archives* xvii no. 75, April 1986.

individuals who were involved in the market for Crown land begs important questions about the state of the land market as a whole, but at present it seems the only way of tackling the development of land ownership, even in a restricted area, over a fairly lengthy time span. The alternative would be to take a larger geographical area and a shorter time span and to scan all the Close Rolls for that period, extracting any references to the chosen area. It is to be hoped that, when the importance of enrolled deeds as evidence for changes in the structure of local society has been understood, local record societies may also feel inclined to calendar those deeds relating to their own areas to make them available for more detailed study.

There is also a need for more detailed studies of the market in Crown property after it left Crown hands in order to determine its impact on the local market and the structure of society. Some of the evidence suggests that landowners were more willing to resell land which they had bought than inherited land, though this runs counter to Kew's conclusion that many Devonshire families sold their patrimony in order to invest in Crown land. In either case, the injection of Crown land must have had an effect on the local market, leading to at least some increase in trading.

Studies of subsequent dealings in Crown land should also enable us to disentangle the genuinely local property market from the activities of dealers and speculators. No accurate impression can be obtained of the velocity and significance of the local market when the picture is confused by the activities of outsiders who traded in land as a commodity without social significance. This distinction between commercial dealing and the local market is both more important and more difficult to draw when the dealer was also a local landowner acting on his own behalf as well as that of friends or neighbours. It is in any case difficult to draw a firm line between speculators and investors in land; a speculative purchase of land for resale had the incidental advantage that if the property remained unsold it would still produce some profit, while a property bought as an investment might well be regarded as available for resale at the right price. The subsequent history of the property and a knowledge of the purchaser's other activities may throw some light on this question of the original grantee's attitude to his purchase.

There is still debate, however, on how much further the dispersal of this property should be traced through the local land market. On the one hand, Joyce Youings has argued that it may be misleading to take too long a view of the history of former monastic property, as it was soon asborbed into the local market and, if subsequently returned to the Crown, was described in official records not as ex-monastic property but as the property of the most recent owner. Its resale was thus of no more significance than any other private land transaction. On the other hand, as Joyce Youings herself points out, it is vitally important to pursue the history of ownership to discover the genuine purchasers of property[4] and in the case of speculative purchases this may involve looking at transactions some years after the initial grant.[5] It was originally intended to end the present study in 1603 but several significant trends from Elizabeth's reign were found to have continued at least until the 1620s, notably the Crown's gradual abdication of control over the processes of land alienation and the increasing power and initiative of agents and dealers. Unfortunately, lack of time prevented an exhaustive study of the relevant sources for this period: they are in

[4] *The Dissolution of the Monasteries*, London 1971, pp 19, 130–3; *ibid*, pp 126–9.

[5] E.g. the property in Mounton granted in fee farm to Ralph Crewe and Richard Cartwright on 28 Oct 1598, sold by them to Richard Budd on 29 Nov and by Budd to David Phillips, apparently a local man, on 27 July 1613: Public Record Office, C/66/1492 mm 14–19, Gwent Record Office (hereafter GwRO) D.501.452. References are to documents in the Public Record Office unless otherwise stated.

any case less fully listed, and some sources such as particulars for grants and leases, enrolments and other copies of leases, are scarce after 1603. It was therefore decided to confine the study for statistical purposes to the years 1500–1603, while giving consideration in more general discussions to developments in the early seventeenth century.

I

There was virtually no dealing in former Crown property in Monmouthshire in the earlier phases of its dispersal when grants were made, usually on generous terms, in response to individual petitions. Gifts and concessionary grants were obviously less likely to be resold, and there was no scope for agents or middlemen to become involved in these transactions. It does, however, give some indication of the stability of the estates established or augmented by the Crown's generosity and suggests that the Crown's gifts were generally used for estate-building rather than for profit. Even the manor of Llanfair, given to Winifred Hastings by Mary and always forming a remote part of the estates of her husbands, Sir Thomas Hastings, brother of the Earl of Huntingdon, and Sir Thomas Barrington of Barrington Hall, Essex, was retained by her family until 1614 when it was sold by her grandson to Nicholas Kemeys of Caldicot.[6]

Some alienation of monastic land had been envisaged in the two dissolution statutes and in the act which set up the Court of Augmentations, but the scale of dispersal changed in 1539 with the issue of the first of a series of commissions for the sale of land at the full market price, initially twenty times the net annual value. The advent of free sales under these commissions encouraged purchases by local gentry and lesser landholders who were unwilling or unable to master the intricacies of a purchase through the Court of Augmentations or to live in London while the lengthy process was completed. These problems could be dealt with by purchase through a courtier or official or through or in partnership with a more knowledgeable neighbour who was also buying for himself. Thus Giles Morgan made his modest purchase of the site and lands of Newport Friary through Sir Edward Carne, who was also buying for himself. Roger Williams bought on behalf of himself, his brother-in-law and several neighbours in 1544 but exchanged land with the Crown through the Earl of Pembroke in 1553. William Morgan began by buying through the Earl of Bedford, rapidly graduated to buying in his own name and in 1563 took John Morris, another Monmouthshire gentleman, into partnership for a purchase for themselves and several others. But the more usual solution was to hand over either the securing of the grant or even the whole process of suing out and rating particulars to one or more agents. Sales by commission also opened a way to investors buying land as a disposable asset to be managed or resold for profit. There was little enough of this in the country as a whole and even less in Monmouthshire, but the activities of a few such 'speculators' did give the local land market a little more flexibility by providing a small reservoir of land available for resale to those who were not prepared to buy from the Crown even through agents as well as to local landowners buying to consolidate an estate. Often these investors or speculators were the same men who were buying as agents for others, and it can be wellnigh impossible to decide in what capacity they were acting in any one transaction. Nor can we assume that any of the dealers or agents known to have bought Crown property confined themselves to this limited sector of the market, though we may suspect that was where they were most active because their skills were most needed and that there their greatest profits lay.

[6] GwRO D.435.264.

These profits, where they can be ascertained, ranged from modest to astronomical, and in some cases at least the implication is that the valuation the Crown put on its property was a gross underestimate. However, the losses which some purchasers made, and the fact that well-placed men like David Lewis, the Admiralty judge, chose to buy from dealers rather than from the Crown, argue another side to the picture. The length of time taken to purchase land from the Crown might equally deter the provincial landowner and the busy Government official. Even when fees and expenses were separately paid for, the purchaser gained in the economies of scale of a single large purchase and in the expertise of the agent. This was particularly important when the rating of properties became negotiable. Richard Budd, the most important of the agents active in Wales in the late sixteenth and early seventeenth centuries, was able to advise on prices, availability and the best time to negotiate, check on the existence of reversionary leases on property and look out for and circumvent other prospective purchasers, as well as knowing who to bribe and how.[7] Purchase through an agent or speculator might also extend the time available for repayment. When Leonard Meyrick bought the Llandegfedd chantry lands from Richard Budd he paid in six-monthly instalments over a period of five years.[8] This advice and financial assistance was particularly useful to the smaller purchasers; indeed, without it, few of the minor gentry, yeomen and artisans who bought Crown land in South Wales would have been able to tackle the complexities involved in dealing with Chancery and the Exchequer.

II

In what was to emerge as a characteristic pattern, however, and in spite of the activities of these dealers, the land market in Monmouthshire was slow at first in its response to Crown stimulus and it was not until 1543, four years after the first commission, that the Crown sold any land in the county for cash. By this time, changes were being made in the conditions of sale of the property, changes which should have facilitated the development of a commercial market in Crown land.[9] By January 1547, however, in spite of its apparent determination to dispose of its property for cash, the Crown had sold land worth only £310 a year net in Monmouthshire, 27 per cent of the total held or acquired during Henry VIII's reign. This is a remarkably low figure: even when all secular property is removed from the calculation the amount of monastic land alienated is only fractionally over 45 per cent of the total acquired. Moreover £101 of this had been alienated in fee farm and was therefore still producing at least some income for the Crown. Outright alienations of monastic land amounted to only £209 yearly, 30 per cent of the total revenue from this source. This is a striking contrast to figures which have been produced for the whole nation ranging from 'over half' to as much as seven-eighths[10] and to the situation in Glamorgan where 'more than half' had been sold by 1547.[11] No figures are available for other Welsh counties but the impression gained from reading H A Lloyd and G Dyfnallt Owen[12] is that sales in West Wales were equally slow. Even after the massive alienation to the Earl of Pembroke during Edward VI's reign less than two-thirds of the available land in Monmouthshire had gone. These figures do not indicate an acute shortage of land in the county, nor a correspondingly intense desire to acquire what was available: nor do

[7] National Library of Wales (hereafter NLW) MSS 9054E no. 518, 9055E nos. 649, 656, 662.
[8] NLW, Llangibby Castle A.941, 24 Oct. 1611.
[9] For details of these changes and their effects see, e.g., Joyce Youings, *The Dissolution of the Monasteries*, London, 1971, ch. 5 and references therein.
[10] *ibid*, pp 117–18; R B Pugh, *The Crown estate: an historical essay*, 1960, p 10.
[11] Glanmor Williams, *Welsh Reformation Essays*, Cardiff, 1967, p 100.
[12] *The gentry of south-west Wales, 1540–1640*, Cardiff, 1968, pp 31–40.

they provide any evidence of the rampant speculation imagined by Tawney. Once the special grants to the Earls of Worcester and Pembroke are removed, we are left with a fairly steady trickle of purchases from 1543, peaking in 1546 and again in 1553 but at no point becoming a flood.

There were no outright sales of Crown land in 1547, and response to the commission for sales of chantry land in April 1548 was as usual slow. It was not until July that James Gunter, acting for the rector of Llanwenarth, sued out particulars for £1 6*s* 8*d* worth of chantry land in Llandeilo and Llanwenarth.[13] Chantry land was generally slow to sell in Monmouthshire, in sharp contrast to the unrestrained competition for such property in London and the south-east.[14] Of a total of about £70 net acquired from this source £40 1*s* worth had been sold by 1553, but £34 2*s* 6*d* of this was comprised in one grant to William Herbert and had already been returned to the Crown by 1553. Several reasons have been suggested for this. Chantry property consisting of small tenements and fragments of land may have been overpriced. It is difficult to see a pattern in the few available particulars but rates varied from 24 years' purchase in 1548 to 20 in 1549 and 1550 and 23 in 1553, with William Herbert of course securing the lowest rating on his grant in 1551. As the chantries had been valued more recently than the monastic estates and values should not therefore have been seriously affected by inflation, these rates were possibly rather high. Furthermore at this date it is probable that the likely purchasers of small chantry tenements, the minor gentry and yeomanry and the townspeople, had neither the resources nor the initiative to seek out land for investment. Monmouthshire had no land agents as enterprising as John Bellow, the Augmentations surveyor for the East Riding of Yorkshire, who went about his area proclaiming publicly that 'yf any woolde bye any lande, the king was disposed to sell landes and he [Bellow] woold help them to hit'.[15] James Gunter dealt extensively on his own behalf and that of others, including some of the leading local gentry, but his own financial position was at times precarious. He could ill afford to allow his clients time to repay the money he had spent on their behalf, and the high prices he charged in most of his resales put his services beyond the reach of the minor landowner. It was not until the end of the century, when the benefits of the economic revival in Wales had become fully apparent, that men like Richard Budd were prepared to encourage small purchasers by offering them facilities for payment by instalments and to buy small parcels of land on their own account for sale to such purchasers.

By 1565 most of the large and consolidated properties had been sold. The existing gentry families were presumably satisfied and the available capital and initiative for the establishment of new estates had apparently been mopped up. Further grants and sales consisted mainly of smaller monastic properties and fragments of chantry land. The initial recipients of these grants were in most cases courtiers and their nominees or agents and dealers. Some smaller properties went to round off and consolidate existing large estates but an increasing number were eventually resold to the minor gentry (who in South Wales were very minor; some may have been buying their first property in fee) and even to yeomen. Such purchasers could be found in the 1540s and 1550s but now for the first time they became numerous, thanks partly to their increased wealth and partly to the enabling activities of agents and dealers. It was during this period also that individual urban tenements became popular, although

[13] 'Agrarian conditions and changes in West Wales in the sixteenth century with special reference to monastic and chantry lands', Wales PhD thesis, 1935, pp 366–88.

[14] E/318/1461: grant to Thos. Butcher and Henry Tanner, 9 Sept., C/66/811 mm 53–55.

[15] C J Kitching, 'The disposal of monastic and chantry lands' in Heal and O'Day, eds, *Church and society in England, Henry VIII to James I*, 1977, pp 119–36 (p 133).

many were not sold until the early seventeenth century. Most of those whose descent can be traced passed through the hands of agents and dealers to the burgesses, tradesmen and minor town gentry, men like Richard Clayton of Chepstow and Maurice Nicholas of Newport. the latter being already tenant of much of the property which he bought in 1604.[16]

The activities of agents and dealers may well give a false impression of an active land market, especially when land passed through the hands of several dealers or partnerships before finding a permanent owner.[17] As far as local society is concerned, however, it is more important to discover how much land was bought and sold after having reached a buyer (probably, though not necessarily, a local man) who regarded it as a long-term investment. There were of course many instances of property remaining with the Crown's grantee; indeed, because those who received most, the peers and the more enterprising gentry, were also those best able to negotiate their own grants, these instances dominate in terms of the value of the land acquired though not of the number of grants. Of a total of 85 grants worth £951 8*s*, 27 included at least some property retained by the original grantee and at least some of the property in 58 is known or believed to have been sold, but the property known to have been retained by the grantee or his direct descendants until 1603 amounted to £724 14*s* or 76 per cent of the total.[18] A further £149 14*s* worth is only known to have been resold once and over £100 of this is known to have remained with the descendants of its last identified purchaser until 1603, though some was resold soon after. Property worth £12 10s was sold at least twice, three properties worth a total of £14[19] were resold three times and a few smaller properties worth £5 3*s* were resold four times. No property can be shown to have changed hands by sale more than four times between its alienation by the Crown and 1603. When the activities of agents and middlemen are disregarded a staggering 87 per cent of property sold by the Crown during this period is known to have remained with the descendants of its original purchaser until 1603.[20]

It is particularly difficult to ascertain whether there was any difference in dispersal patterns between larger and smaller properties. Larger properties — secular and monastic manors, substantial demesnes and granges — were more often given or sold directly to the intending purchaser, and were granted subject to tenure in chief. They will therefore appear in licences to alienate and inquisitions post mortem and their ownership through the century can be checked. Smaller properties give the impression of being more mobile as they may have passed through the hands of several agents or speculators before reaching a permanent owner. As they were commonly sold under socage tenure after 1544 their subsequent ownership can be virtually impossible to trace. Subject to these restrictions, however, and to several exceptions, the general impression from those smaller properties which were alienated early and therefore held by tenure in chief, or whose history has been preserved by the fortuitous survival of their deeds, is that the market for smaller properties was freer than that for the more important manors, granges and rectories. The latter, if they changed hands at all, were more likely to do so by the demographic processes of the failure of

[16] CJ Kitching, 'Studies in the redistribution of collegiate and chantry property in the diocese and county of York at the Dissolution', Durham PhD thesis, 1970, p 114.

[17] C/66/1581 mm 1–13; C/54/1713, 1770; NLW TP/91/92.

[18] The manor of Courtfield in Welsh Bicknor, at that time a detached portion of Monmouthshire, was sold by the Crown to two London gentlemen, Thomas Reve and George Cotton, on 14 March 1553, sold by them to John Pollard of Nuneham Courtenay in Oxfordshire and Thomas Mynde on 30 March and by Pollard and Mynde to Edward Campion of Welsh Bicknor in 1555: C/66/857 mm 17–21, C/54/492 no 40, NLW Courtfield 239.

[19] These figures exclude assignments between parties, redeemed mortgages and settlements: they have been corrected to the nearest shilling.

[20] Including the rectory of Monmouth, which was twice shared between partners but with only three complete changes of ownership.

male heirs and the marriage of heiresses, which is arguably only a change of name and not of ownership. We cannot therefore assume that the lack of movement in the market for Crown land reflects a similar sluggishness in the rest of the land market, in which small properties were more likely to predominate.[21] Only a detailed study of all land transactions in the county could prove or disprove this assumption, and such a study is very likely impossible because of the paucity of surviving original deeds.

III

Deeds and enrolments are even more scarce for assignments of leases, and in their absence it is difficult to reach any conclusions at all about the extent or significance of dealing in leases. Agents are known to have been active in this area of the property market but their methods can only be illustrated by examples from other counties.[22] As for private dealing in leases, all that can be said is that of identifiable properties leased more than once (a fraction of the total) and excluding leases to agents, leases in reversion and head-leases of whole estates including property already held by lease, 16 leases rented at £296 2*s* (53 per cent of the total) were renewed to the lessees or their heirs; 14, rented at £126 2*s* (23 per cent of the total) were renewed to the assignees of the first lessee; and 14 leases, rented at £134 2*s* (24 per cent of the total), were made to persons having no known connection with the first lessee. Mesne assignments are seldom recited in Crown leases and the survival of leases and assignments from this period is even more fortuitous than that of conveyances, but the existence of three further assignments rented at a total of £21 18*s* and not mentioned in the subsequent grants may suggest a more active market than that indicated by the Crown's records. Even the lower figures, if representative, show that the market for leases was appreciably greater than that for land held in fee. This accords with the suggestion that the stability of the land market was largely due to a prejudice against selling land. The average size of leases renewed to the lessee and his heirs is almost exactly twice that of leases granted or renewed to others, providing some possible evidence for the greater stability of larger estates in this area, whatever the picture may be for the whole country. H A Lloyd suggests[23] that the gentry of south-west Wales preferred to deal in leases because they lacked the capital to invest in purchasing land, but the only consideration which has survived for the assignment of a Crown lease, £200 paid by Edward Kemeys of Cefnmabli to William James of Llanddewi Rhydderch for the residue of his term of 21 years in the rectory of Caldicot at £16 yearly,[24] indicates that buying leases on the private market may have been considerably more expensive than buying them from the Crown.

The small percentage of Crown property which changed hands after reaching a genuine purchaser is further reduced by the activities of men like Gunter who bought apparently for themselves but were prepared to sell at a profit. Apart from these transactions, a mere handful of properties was resold in the course of the century. Some of these sales may be explained by financial difficulties. Howell Thomas Lewis had thrice mortgaged his farm at Gregoes in Llantrisaint before mortgaging and eventually releasing it to the Earl of Pembroke.[25] Robert Brayne's lands in Hadnock and a fishery in the Wye were taken over by his brothers-in-law after his death to

[21] According to Kew, *art. cit.* and thesis pp 107–12, the land market in Devon was becoming more active in the 1530s before the impact of ex-monastic land, and the private land market consisted mainly of smaller properties.

[22] E G Jones, ed, *Exchequer proceedings (Equity) concerning Wales, Henry VIII–Elizabeth*, Cardiff, 1939, p 120, T I Jeffreys Jones, ed, *Exchequer proceedings concerning Wales in tempore James I*, Cardiff, 1955, pp 233, 238 for Richard Budd's securing of leases for clients in Carmarthenshire and Merionethshire; Gwynedd RO, E.R.D.9 for a lease apparently taken by him on his own account and reassigned six months later.

[23] *The gentry of south-west Wales...* pp 39–40.

[24] LR1/233 f 22.

[25] C/66/1335 m 25, C/54/638 no 91, 765 no 49, C/66/1064 m 44.

reimburse themselves for their payment of his debts.[26] The strange circumstances of Andrew Powell's bargain and sale of the tithes of Monkswood and Stavarney to the Earl of Worcester for £40 in return for a lease to Powell and Andrew Jones for their lives may also indicate necessity rather than profit.[27] Gregory Price may have been forced to sell his property in Llangatwg feibion afel, Rockfield and Llanfihangel ystum llewern (formerly of Monmouth priory) at a loss in 1564,[28] but he is not known to have been in difficulties at that time and he may have been getting rid of an unsuccessful investment in order to buy property nearer the centre of his estates in Hereford and Brecon. The circumstances of the other sales are not known. In all, Crown property worth a total of £32 5*s* (3.4 per cent of the total sold) at 1536 prices is known to have changed hands by sale after reaching its first genuine purchaser. As some properties changed hands more than once the total value of these transactions is in fact £38 8*s*. This compares with £64 15*s* worth which changed hands as a result of demographic processes, the failure of male heirs to the Gwilym of Whitfield and Welsh Bicknor; Brayne; Herbert of St Julians; and Herbert of Wonastow and Grace Dieu estates and their transfer to the husbands of the heiresses; the remarriage of Winifred Hastings; and the deaths without heirs of cadet members of the Somerset family. The low proportion of resales testifies both to the reluctance of local landowners to sell land except as a last resort and to the remarkable stability and endurance of estates established out of Crown property. It is more difficult to explain the low rate of change of ownership as a result of failure of heirs without comparable figures for other estates not including Crown lands and without invoking Divine approval for the beneficiaries of the Dissolution. Obviously, the longer the perspective one takes, the greater the number of families selling up or dying out, but the fact of sacrilege according to Spelman does not seem to have had any appreciable effect on Monmouthshire by 1603. It would certainly be rash to assume that these statistics would be reflected in the private land market. Kew found that in Devon more land was transferred by female inheritance and marriage than by sale before 1536 and that the figures were roughly equal from 1536 to 1558, but in both cases his figures are appreciably higher than those for Monmouthshire.[29]

A longer perspective would also make more clear the process by which much of this land was absorbed into a few major estates, a process which did not reach its culmination until the eighteenth century.[30] Its small beginnings can be seen in the acquisition of the advowson of Llangybi by the lord of the manor, Roger Williams, and by a few transactions of the Somerset family. The site and lands of St Kynemark's Priory in the Earl of Worcester's lordship of Chepstow were sold by John Farnham to a younger son of the second earl, Thomas Somerset, on whose death without issue in 1586 they appear to have passed to the third earl.[31] In 1596 the fourth earl acquired the tithes of Stavarney and Monkswood, the area covered by Tintern's Pelleni grange which he already held. In 1588 another brother of the third earl purchased from Walter Spicer and his assignees three-quarters of the rectory of Monmouth, which he devised to his nephew the fourth earl.[32] The remaining quarter was bought by the fourth earl's younger son, Sir Charles

[26] C/66//1081 mm 34–35, 1113 mm 15–16, 1432 m 6, 1436 m 17; C/66/1091 mm 7–8, C/54/795, C/66/1411 m 4, 1480 mm 37–38; *Transactions of the Bristol and Gloucester Archaeological Society*, vii, 1882–83, 237–44.

[27] NLW Badminton II, 9980, 2 May 1596.

[28] C/54/681 no 51.

[29] *art. cit.*

[30] Peter Roberts, 'The decline of the Welsh squires in the eighteenth century', *National Library of Wales Journal* xiii, 1963–64, 157–69; H J Habakkuk, 'English landownership, 1680–1740', *Econ Hist Rev* x, 1940, 2–17; F M L Thompson, 'The social distribution of property in England since the sixteenth century', *Econ Hist Rev*, 2nd ser, xix, 1966, 505–17.

[31] NLW Badminton 52, LR6/141/9.

[32] NLW Badminton 8141, C/142/266/12.

Somerset of Troy, in 1610, and also appears to have passed into the Raglan estate.[33] The process continued in the early seventeenth century with the fourth earl's acquisition of the rectories of Cilgoegan and Newchurch and the tithes of Raglan.[34]

Of more significance in the sixteenth century, however, was the way in which smaller estates could be built up or augmented by second-hand purchases of Crown property. David Lewis was already a Master in Chancery and Member of Parliament for the county in 1554 when he made his first purchase of former Crown land in Abergavenny but he always dealt at second hand or through agents. At his death in 1584 he left a respectable estate including the manor of Llwyn-ddu (bought from James Gunter's son in 1564) and some land in Abergavenny formerly of the priory, as well as the manor of Llanddewi Rhydderch and other property in Abergavenny, Llanwenarth and Llandeilo Bertholau acquired from other sources.[35] Later in the century the Aldey family of Hardwick, who had already leased property in Hardwick from the Crown and had accumulated a number of conventual leases, substantially augmented their estate by a series of purchases of Crown land in Hardwick, Chepstow and Mounton from Richard Budd.[36]

By this time no great distinction was being made between Crown and other land; the purchaser looked for land which suited his purposes and bought what was available from any source. However, Crown land still offered advantages to the aspiring estate-builder. By the end of the sixteenth century the land differed little from that on the private market but it was more readily available. Even in the intervals between commissions there was the possibility of arranging a purchase through a grantee in fee farm or by exchange or from the stock of land held by a dealer. The purchaser still had a reasonable choice of land from these sources. Even when land was sold many years after its initial grant and by someone who had originally bought with the intention of retaining his purchase, it is quite likely that a vendor could more easily be persuaded to sell land he had bought than land part of his patrimony. The inquisitions post mortem for the county contain examples of similar estates built up piecemeal from private land[37] but this was inevitably a longer and more painstaking process and likely to result in a more fragmented estate. The market in private property does appear to have expanded by the end of the sixteenth century. This may have been influenced by the market in Crown property, either through the activities of landowners selling other estates in order to buy from the Crown or from the general example of a market in one sort of land encouraging the buying and selling of land in general. However, the nature and extent of these influences could only be established by a full study of the local land market and, as explained above, this would be difficult if not impossible.

IV

Lack of information also makes it difficult to establish the extent to which purchasers of Crown land were also involved in the market for other property: indeed, one of the continuing justifications for studies of the market in Crown property is that, in South Wales at least, other property is so poorly documented. It seems that, as far as Monmouthshire was concerned, the London-based agents confined themselves

[33] NLW Badminton 8142; *cf* J A Bradney, *A History of Monmouthshire*, 1904–33, vol. i p 11

[34] NLW Badminton II 11451, 1 Oct 1603, 9526, 26 Mar. 1606, 10735, 1 Sept. 1612.

[35] C/66/1028 mm 33–34; Bradney, *op. cit.* vol. i p. 283; C/54/1187; C/142/244/95; for his dealings in other lands see, e.g., C.54/857, 913, 917, 957 (no mm nos); for a recent biography see S T Bindoff, ed, *The History of Parliament: The House of Commons, 1509–1558*, 1982, vol. II pp 524–25

[36] E/309/17 Eliz./12 no. 28; LR2/237 ff. 31–42; C/54/1468, 1710, 1772, 2163 nos. 6, 7, 8, 9; see Bradney, *op. cit*, vol IV pp 20–21 for their other estates in Hardwick.

[37] E.g. C/142/249/58, 493/103.

to dealing in Crown land, though some are known to have bought other land elsewhere, possibly for retention by themselves.[38] As one would expect, most of the major purchasers of Crown land in Monmouthshire also bought private land, though their other purchases may well have been dwarfed by the size of the estates they bought from the Crown. The Earl of Pembroke dealt on a large scale in both Crown and private land, but his estate was inevitably dominated by the gifts he received during Edward VI's reign. Roger Williams and his descendants bought extensively in Llangybi and elsewhere in the Usk valley, and seem to have paid more to private vendors than they did to the Crown, but their efforts were largely devoted to the consolidation of their existing estates in the area and in particular to buying out some of the numerous freehold tenants on their manor of Tregrug.[39] William Morgan's early investments were all in Crown land, but when he bought the manors of Porton and Whitston in 1572 he increased his estates by about a third, and some at least of the other property mentioned in his inquisition post mortem was bought rather than inherited.[40]

These, the principal grantees of Crown land in the county, all began the process of estate-building with gifts or purchases from the Crown, and former Crown land remained the most important part of their holdings. For others, Crown land was significant but not dominant: Sir Thomas Herbert of Wonastow inherited some land from his father and made his first purchase from the Crown but the largest single property in his estate was the manor of Wonastow, bought from his brother's heirs in 1558, and he made several other purchases of land in and near Monmouth from private landowners.[41] Similarly, Giles Morgan of the Friary, Newport, established himself by his first purchase from the Crown but subsequently bought land worth far more from others.[42] Some purchasers seem deliberately to have sought out former Crown properties in preference to private land, even when its advantages for building up and consolidating an estate were not immediately apparent. Over a period of ten years, William Morgan bought at first and second hand most of the property formerly of Llantarnam Abbey, including the remote grange of Penrhys in the Rhondda Valley. He considered buying Llystalybont Grange, near Cardiff, but eventually declined, possibly because of shortage of capital. He also failed to persuade the Earl of Pembroke to sell him Mynyddislwyn Grange, though the Earl was willing to part with Wentsland and Bryngwyn, a divided manor which was not so convenient for the rest of his estate.[43] For many purchasers, however, the land which the Crown offered for sale was only one part of a range of available options. Dr David Lewis of Abergavenny[44] and Richard Seyborne of Sutton St Nicholas, Herefordshire, who had bought the manor of Caldicot Priors in 1557,[45] both invested in Crown and private land at the same time and without apparent discrimination. James Morgan, the lawyer who bought chantry land in Caerleon from William Morgan of Llantarnam for £40 in 1565, subsequently paid £500 to Thomas Parry of Wellford in Berkshire for the manor of Brym and land in Undy and 'Llanvyhangell nether Gwentsland' (Llanfihangel Roggiett).[46] Walter Aldey bought several parcels of land in Hardwick and Chepstow from and through Richard Budd but bought his mansion and main estate in Hardwick privately.

[38] E.g. Richard Budd's purchases in Oxfordshire and Hampshire (C/54/1823 and 1991); see also C/54/451 nos. 23 and 37 for James Gunter's purchases in Abergavenny, Llangatwg Dyffryn Wysg and Llanddewi Rhydderch in 1547.

[39] NLW Llangibby Castle *passim*.

[40] C/54/887; C.142/196/16; Gw.R.O. D.43.5501, 6122.

[41] NLW, Milborne 24, 888, 316.

[42] NLW, TP/46, 7/1, C.142/155/169.

[43] E/318/2445; C/66/993 mm. 28–31 (Penrhys); LR2/84 f. 78 (Llystalybont); C/66/957 mm 4–6, 967 m 32 (Mynyddislwyn, Wentsland and Bryngwyn).

[44] NLW, Milborne 308; C/54/857, 913, 957, 1187 (1571–84).

[45] C/142/773/201; Bindoff, *Commons 1509–1558*, III, 285–86.

[46] C/54/684 no 52, 808 m 7.

As far as the motivation of the individual purchaser is concerned, the acquisition of former Crown land by private conveyance from its previous owner some years after the original grant should probably be considered as a purchase on the private market, but the fact remains that the dispersal of Crown property increased the amount of land on the market as well as providing types of property (tithes, large marcher manors) which would not otherwise have been available. As for those who bought directly from the Crown or through agents or dealers, the young man with an inheritance or marriage portion to spend or the retiring merchant or lawyer wishing to establish his family as landed gentry could invest in large properties and integrated estates and avoid the tedious process of building up a holding from scattered local sales; for the smaller purchaser, more suitable land might well appear on the private market, but the Crown had a wide range of properties always available for those who knew whom to contact. It would not, therefore, be surprising if estate-builders tended to look first to the Crown when buying property.

It is equally difficult to assess the extent to which purchasers of Crown or other land had sold property they already owned in order to raise capital for further investments. Since so many were younger sons or from cadet branches of landed families, they had in any case little that they could sell. According to his marriage settlement, the wealthiest of the major purchasers, William Morgan of Llantarnam, inherited freehold and leasehold property worth about £53 6*s* 8*d* a year including his mother's jointure.[47] Property corresponding to this valuation can be found in his inquisition post mortem and we have no record of substantial sales by him. The money for his initial investment almost certainly came from the dowry of his wife Elizabeth, daughter of Sir Rice Mansel, who was himself one of the greatest purchasers of Crown land in Glamorgan; William Morgan's marriage settlement specified that the dowry was to be invested in land. He may also have been able to borrow money from his father-in-law to fund further purchases, and he built his estate up slowly so that income from earlier acquisitions may have provided the capital for later investments.

Roger Williams, another minor landowner who invested heavily in Crown land, appears to have had some legal experience and held office with the Earl of Pembroke and the Court of Augmentations.[48] His early grants included extensive purchases on behalf of others and the property he intended to keep could have been paid for largely out of his profits on the other transactions.[49] He alienated his patrimony of Biddhey, in Llangwm, and some of his earlier purchases, in a complicated exchange with the Earl of Pembroke which secured him Usk Priory's scattered 'manor' of Usk and other property in the Usk valley, but his family remained as tenants of Biddhey and his descendants eventually repurchased it. James Gunter, as the younger son of a family of minor local gentry, had even less chance of raising money from his inheritance. Although he was a lawyer and a moderately eminent monastic and Crown official, and although his wife's family were apparently fairly wealthy,[50] he seems to have needed to deal in land to raise capital to invest for himself. His career also illustrates the limitations of the property market as a means of making money: in spite of his extensive and lucrative dealings, the mortgages to which he was forced to resort suggest that he had difficulty in making enough to retain the land which

[47] G T Clark, *Cartae et alia munimenta quae ad dominium de Glamorgancia pertinent*, Cardiff, 1910, V, 1987–90.

[48] Bradney, *op. cit.*, vol III, pp 97–103.

[49] E/318/1225; C/66/760 mm. 37–38, 764 m 19, 759 m 5; E/318/1769; C/66/820 mm 7–11.

[50] For his career see Bindoff, *op. cit.*, II, 267–68; for the will of his mother-in-law Elizabeth Wescott see Ida Darlington, ed., *London Consistory Court wills, 1492–1547*, London Record Society, 1967, pp 139–40.

he had bought for himself and raise enough capital for future transactions.

V

Historians of Wales have tended to assume that the county of Monmouthshire was from its creation one of the most developed as well as the most anglicized areas of the country. If the velocity of the land market is any indicator of economic development this judgement may well need revision. Studies of other counties in South Wales indicate that Monmouthshire was less advanced than Glamorgan, where the power of the great lordship of Glamorgan and the rich agricultural lands of the Vale had fostered the development of a gentry élite capable of grasping the advantages offered by economic revival, the Acts of Union and the financial problems of the Crown.[51] Monmouthshire was more like the counties of south-west Wales, less wealthy and apparently less ready to adopt new ways of seeking wealth.[52] It may be, however, that it was Glamorgan which was the anomaly and that Monmouthshire was more typical both of Wales and of the north and west of England, areas which have been neglected in studies of this kind because of the sparseness and difficulty of the evidence.

Judged against other areas in which the market in Crown land has been studied in detail, Monmouthshire was perhaps even more atypical in the comparatively low social class of the eventual purchasers of that property. True, two of the county's peers, the Earls of Worcester and Pembroke, got the lion's share; but the senior representatives of the county's leading families — the Herberts of Troy, the Morgans of Machen, Tredegar and Pencoed — bought little and late, and almost invariably at second and third hand. The only member of the county élite to make extensive purchases direct from the Crown was George Herbert of Wonastow, and even he was at the time of his first and largest investment a younger brother with no certainty of inheriting the family estate. The other major purchasers were all lesser gentry, younger sons or members of cadet branches of the greater families. It was impossible to be a gentleman in Wales at that time and not to claim descent from a handful of royal houses and kinship with the leaders of local society, but in terms of land owned and offices held the men who profited from the dispersal of Crown property in Monmouthshire were of surprisingly low status. Even the Earl of Pembroke was the younger son of a gentleman from the Welsh district of Herefordshire and received much of his Monmouthshire land while he was still Sir William Herbert and a courtier.[53]

The reasons for this are difficult to establish. Explanations of individual cases are possible, but do not account for the general pattern and may not be entirely valid in themselves. Sir Charles Herbert of Troy was in severe financial difficulties by 1552, but in the early 1540s his extensive estates and his offices in the Duchy of Lancaster should have put him in a good position to buy.[54] Sir Thomas Morgan of Pencoed and his son Sir William seem to have preferred fighting to estate management, but this need not have prevented them from investing in property; Nicholas Arnold served with Sir Thomas Morgan as a gentleman pensioner and was allowed to take part of his grant of Llanthony in fee farm presumably as a reward for services; while Sir Rice Mansel of Penrice and Margam is perhaps the classic example of a soldier who raised his family to a position of local pre-eminence by the purchase of estates from the Crown. Military service

[51] Glanmor Williams, 'The dissolution of the monasteries in Glamorgan' in *Welsh Reformation Essays*, Cardiff, 1967, 91–110; *idem*, *Glamorgan County History vol. iv: Early modern Glamorgan*, Cardiff, 1974.

[52] H A Lloyd, G Dyfnallt Owen, *op. cit.*

[53] For details of the purchasers of Crown land in Monmouthshire see ch. 4 of the present writer's thesis, and her chapter 'Change and continuity: the gentry and Church property in south-east Wales in the sixteenth century' in J Gwynfor Jones's forthcoming book on *Society in Tudor Wales*.

[54] Bindoff, *Commons 1509–1558*, II, 336–37.

could be expensive, as the Morgans of Pencoed found, but it could also be exploited to provide great gains.[55] Henry Lewis of St Pierre had increased his estate by a more traditional method when he married Bridget, daughter of Thomas Kemeys of Caldicot.[56] In many cases, though, we simply do not know enough about the circumstances of local families to explain their inaction.

In the same way, we can suggest superficial explanations for those who bought. Nicholas Arnold's family had been involved in the administration of Llanthony-juxta-Gloucester during its last years and in its dissolution; he, his father-in-law and his brother-in-law, Arthur Porter, all invested in former property of that house. William Morgan may have been inspired by the example of his father-in-law, Sir Rice Mansel. Legal training or a period of residence in London may have widened some men's horizons: Nicholas Arnold had been educated at Lincolns Inn[57] and Walter Aldey at the Middle Temple.[58] According to Bradney, Roger Williams's father may have been a lawyer, and Roger himself spent some time in London as servant of the Earl of Pembroke.[59] Giles Morgan, the purchaser of Newport friary, was one of Thomas Cromwell's lesser servants in the late 1530s,[60] and Nicholas Arnold also served Cromwell for a time.[61] The purchasers of Crown property in Monmouthshire were most of them comparatively young men but during the period (roughly from 1540 to 1560) when the largest properties in the county were being sold, most families had at some time a young representative. The main purchasers, however, if they were connected with the leading families of the county, tended to be younger sons or to come from cadet branches. It is almost as though there was an agreement on the proper size for a gentleman's estate, to which further additions would be superfluous. In a more practical sense, families who felt they had an adequate income from existing estates would have less incentive to invest in further purchases capital which could have been spent on such forms of conspicuous consumption as a new or enlarged house. Nor, it seems, did they have any desire to modify the location or structure of their estates by selling land on the private market in order to buy Crown land.

This may in itself have contributed to the sluggishness of the market for Crown property. If the wealthiest men in the county were reluctant to buy, the field was left open for the minor gentry and lesser landholders; but these were obliged by the slenderness of their resources to build up their estates slowly, acquiring a manor at a time instead of buying up whole monastic estates. Nor was the diversion of this capital into land entirely beneficial to the local community. The redistribution and dispersal of former ecclesiastical and Marcher property brought new families into the county hierarchy and widened the basis of property-owning, but money tied up in land was necessarily withdrawn from local circulation. We can probably ignore the argument that the sale of Crown lands damaged the local economy simply by diverting money to the government: if the Crown had been unable to raise money by selling land it would have been obliged to do so by raising taxes or managing its own estates more ruthlessly, both of which expedients would have had a similar effect on the local community. Even the gifts of land to absentees like the Earl of Pembroke and the dioceses of Bristol and Gloucester did no more than perpetuate an existing tradition of outside ownership of these properties. More damaging in its long-term effects was the way in which the land market

[55] Bradney IV, 213–215; Bindoff, *Commons 1509–1558*, II, 630.
[56] Bradney IV, 78.
[57] Bindoff, *Commons 1509–1558*, I, 330–31.
[58] H A C Sturgess, *Register of admissions to the Honourable Society of the Middle Temple...*, 1949, p 55.
[59] III, 97.
[60] *Commons 1509–1558*, II, 627.
[61] *Letters and papers, foreign and domestic, of the reign of Henry VIII...* xiii (ii), pp 1184, 1223.

absorbed the money and energies of the county's more enterprising landowners, leaving little to spare for industrial development. The chronic problem of the Welsh economy has always been the extent to which it is controlled from outside. This is at least partly due to the agricultural poverty of the country, resulting in a failure to accumulate enough capital for expansion. In consequence, Welsh industries have tended to be geared to the needs of outside investment, producing basic materials at low cost which will be refined and processed elsewhere. It was therefore particularly unfortunate that, at a time when local landowners did have the capacity to invest, their capital should have been channelled into land, leaving the development of industry to outsiders.[62]

The property market and the dispersal of Crown land thus produced several new families to take their place in the county hierarchy, but almost all of them had their roots in local society. Even the Earl of Pembroke, who was to become the county's greatest absentee landlord, belonged to one of the many illegitimate branches of the powerful Herbert clan. Local men bought more than half of what remained after the Earl's massive grants, and 42 per cent of former Crown land in the county was still in the hands of their descendants in 1603. The outsiders involved might be numerous but they bought almost entirely as agents or dealers and in most cases their purchases were small. Apart from the Earl of Pembroke the only individual outsiders to receive large grants were Nicholas Arnold, whose family came from nearby Breconshire and had a long-standing connection with Monmouthshire, and Winifred Hastings, who was given her grandmother's manor of Llanfair and Llangyfiw as part of a grant in restoration. The other major absentee landlords were religious corporations, and their endowments merely continued the ownership of a few properties by religious houses outside the county.

There was thus no appreciable rise or decline in absentee landowning as a result of the seizure and subsequent sale of property by the Crown. The estates of March and Buckingham passed largely to another England-based family, the Earls of Pembroke; the holdings of monasteries outside the county endowed new and old bishoprics and the property of the county's own religious houses went mainly to the local gentry and the one resident peer. On the one hand, the lordships of Edlogan and Tregrug, the marcher manors of Llangwm, Llyswyri and Llebenydd, Keysham's manor of Wentloog and some of the property of Llanthony-juxta-Gloucester were returned to local families; on the other hand, the estates of Llanthony Prima passed for a time to an absentee landlord, though they were returned to local ownership at the coming-of-age of John Arnold. Among the lesser purchasers, Sir Richard Morgan of Blackbrook and David Lewis of Abergavenny spent most of their lives outside the county but their heirs were more local in their interests. There was thus in the long term a modest but perceptible transfer of land to owners living in the county, though again it is difficult to say what effect such residence had on the actual administration of the property.

As far as lesser landholders were concerned, there appears to have been a widening of the basis of property-ownership as tenant farmers took advantage of the opportunity to buy either their own tenements or nearby properties. This was facilitated by the development of a group of estate agents who could manage the complex processes of buying property from the Crown and assist their clients with loans or schemes for deferred payment. Without a comprehensive study of the land market in the county, however, we cannot say how

[62] I reached this conclusion independently, but my thoughts on its implications benefited from discussions at a day-school organized by the Modern Wales Research Unit at Dyffryn House in May 1983.

far this extension of land ownership was typical, how many new small estates had their origin, nucleus or main strength in former Crown land and how many minor landowners were either acquiring or losing land on the private property market. While the rise of gentry estates in England is generally accepted as being the counterpart if not the consequence of the breakdown of larger estates, in Wales it has its origin in the amalgamation of many small estates, in the creation of a group of supergentry (who were the equivalents in status and wealth of the English gentry) out of the large class of petty landholders whose claim to gentility was based on pedigree rather than on income. If, therefore, the dispersal of Crown property in the sixteenth century did result in the creation of new small estates, this was not (as in England) part of a continuous development but a diversion in the process by which smaller holdings were amalgamated to create the great landed estates of the eighteenth century. In general, however, apart from the huge estate given to the Earl of Pembroke, the estates carved out of Crown land in Monmouthshire were comparable in size with others which had been inherited or built up by more traditional means. Since few of the buyers were already major landowners, no massive accumulations of inherited and purchased land were formed; during most of the sixteenth century the largest estates in the county were those of the Morgans of Pencoed and Tredegar Park who at that time owned no former Crown land at all.

VI

Since the changes in landownership in the sixteenth century did not dramatically affect the size of estates, the social class of landowners or the amount of land in the hands of outsiders, their impact on the local economy might be expected to have been limited. It is unfortunate that the survival of evidence relating to estates including or consisting mainly of former Crown land is so uneven. The only estates documented fully enough to make any useful analysis of estate administration possible are those of the two peers, the Earls of Pembroke and Worcester, who cannot be regarded as typical of the county's landowners. Nor does the surviving evidence fall into any obvious pattern. Indeed, the administration of the Worcester and Pembroke estates was radically different, as might be expected when one was managed for most of the sixteenth century by a resident owner and the other was administered for a complete absentee the focus of whose interests was in his Wiltshire estates. The Earls of Pembroke regarded their Welsh lordships as a power-base and a fund to draw on as much as a source of regular income. In 1592 a scheme was suggested for the consideration of the second earl to raise money for investment in land nearer Wilton by selling Welsh tenements in fee farm for substantial considerations and virtually nominal rents.[63] This was never implemented, but much capital was subsequently raised by the charging of heavy fines for renewal on the surrender of leases for lives.[64] The second earl's estate management, though efficient, exhibited the conservatism of the typical absentee. Rents were generally steady in spite of inflation, fines were high, and the practice of retaining a lord's council continued when it had long gone out of fashion elsewhere. The nature of the power-base changed, however, during the sixteenth century: while William Herbert, the first earl, had boasted of his ability to put men in the field in defence of the Crown, his son and grandson placed a greater emphasis on political support and their relations with the upper gentry. By contrast, the third Earl of Worcester in particular administered his estates more like a traditional member of the gentry, receiving money from bailiffs and collectors in person and inspecting and signing account rolls.

[63] NLW, Bute box 93/163.
[64] E.g. NLW, Bute 4, 5, 27.

The lack of evidence also makes it difficult for us to see how (if at all) the administration of former Crown property differed from that of other estates, whether inherited or privately purchased. The records of the Worcester estate indicate that no such difference existed, but information from one atypical estate is not conclusive. In fact, the available evidence does not provide us with any recognizable pattern at all. Examples can be found of most of the traditional methods of estate administration and improvement: the negotiation of shorter terms and increased rents on leases; the conversion of copyhold tenures into leaseholds; the enclosure of large and small parcels out of the extensive upland wastes; forest management for profit; and the attack on customary tenants' rights. There is little evidence of a return to demesne farming, though the accounts of both the Pembroke and Worcester estates do suggest a deliberate policy of converting cash rents into rents in kind.[65] The absence of demesne farming makes it difficult to assess the extent to which agricultural improvements were related to changes in the land market. The first recorded use of lime to sweeten the acid soils of the county's upland zone was in the 1560s on the former monastic manor of Wentsland and Bryngwyn, then recently bought by William Morgan of Llantarnam from the Earl of Pembroke, but there is no reason to suppose that either the Earl or William Morgan had initiated the change.[66] That the new practice was recorded is itself connected with the fact that the manor had passed through the Crown's hands, since this was probably the reason why an early seventeenth-century dispute over tenants' rights found itself before the court of the Exchequer.

Nor did the successors to the marcher lords ascribe much importance to the mineral resources which were to be the most valuable attribute of their lordships in the nineteenth century. In 1625 the Earl of Pembroke leased land in Machen and Basaleg for rents including sea coal and stone coal (to be delivered to Cardiff Castle), but no mention was made in the leases of mines on the property, while the lease of a tenament at Blaendare in Panteg with liberty to dig for coal was subject to a manorial type of rent of £13 6*s* 8*d* and two fat capons yearly and a heriot of the best beast.[67] The tenants of Wentsland and Bryngwyn claimed in 1615 the right to dig coals on their copyhold tenements, and quoted examples of coalmining by customary tenants on new holdings and on the wastes; the lord's interest was limited to attempts to extract fines for their encroachments and spoil heaps.[68] Coal was apparently still regarded as a useful adjunct to a farm rather than as a commercial proposition in its own right and it was probably mined by the farmer himself as a supplementary source of income.

There is of course no reason why the buyers of land and their descendants should have been innovative in any aspect of their estate management. Investing in land is estate improvement at its most conservative, and the income from new land could cushion a landowner from the effects of the declining value of money, thus making it less necessary for him to undertake other less congenial improvements.

[65] Such rents on the Pembroke estate were normally paid in cattle or sheep of a specified quality which could be driven to the earl's principal household at Wilton, though rents of oxen and butter as well as animals taken as heriots were also delivered to the lord's household in Cardiff Castle. The transporting of rents on the hoof was not an unusual practice. Eton College received part of their rent for the manor of Goldcliff in oxen, and complained about their quality. In 1575 part of the rent of the Earl of Pembroke's estate was used to buy oxen to be driven to Wilton but this interesting practice was not apparently continued. On the Worcester estates, by contrast, rents in butter, fruit, cider and perry as well as grain and all sorts of animals, were delivered to Raglan Castle for the use of the earl and his household there. NLW, Bute 1, 9255, 9363, 9664, for the Pembroke estate; Cardiff Central Library, MS 4.474 pp 13–68, transcripts by John Hobson Matthews, for Eton College; NLW, Badminton Manorial 1512–1538 for the Worcester estate; the references to cattle droving are in NLW, Bute 1.

[66] E/112/107/70/12 Jac. I.

[67] NLW, Bute 126/9363 nos 54, 55, 65, 29.

[68] E/112/107/70/12, Jac. I.

VII

The further one pursues the descent of Crown property from owner to owner the less significant its provenance becomes. What is significant, in Monmouthshire at least, is the length of time for which the market has to be studied in order for this process to become apparent. Estates built up by purchase were at least as stable as those established by Crown gifts, though maybe not for the same reasons. It may have been simple inertia which led the descendants of Winifred Hastings to hold on to her manor of Llanfair and Llangyfiw, but for the permanence of estates bought under the commisions for sales another explanation must be sought. Most of the major purchasers of land in Monmouthshire came from the county, and all established at least a secondary residence on their new estates. There was little of the investment by outsiders which could have encouraged a commercial market in land. Monmouthshire was a conservative county and one in which land ownership was of overmastering importance; this is reflected in the lack of investment by local landowners in any form of trade or industry. This may have contributed to the survival of a prejudice against selling even recently-acquired land.[69] There were no particular conveyancing difficulties. Monmouthshire was outside the area controlled by Great Sessions and may have been too far from London for bargains and sales enrolled there to have been convenient, but some deeds are known to have been enrolled at Quarter Sessions.[70] A surprising number of Monmouthshire fines were levied at Westminster,[71] but fines could also be levied and common recoveries suffered locally.[72] The old method of conveyance by feoffment and livery of seisin was suited to local transactions if embarrassingly public. There is even one local example of a prototype lease and release in Gregory Price's lease for 1000 years to Anna Huntley of land in Hadnock late of Monmouth Priory in her occupation on 12 May 1573 followed by a quitclaim in perpetuity on 18 May.[73] In the Welsh areas of the county there may have been lingering doubts about the validity of conveyances under the newly-introduced English land law, but this could surely not have persisted until 1603 and would not in any case have affected the English areas of the county where much ex-monastic land was found. As with the other anomalies indicated in this study — the delayed pattern of sales of Crown property and the generally slow land market — part of the answer is probably to be found in the remoteness and traditionalism of the county. Economic pressures may have driven some landlords to sell, but even in the late seventeenth and eighteenth centuries the major estates established by gift or purchase from the Crown in the sixteenth century were more likely to change hands by failure of heirs than by resale, so that several of the leading families of the county claimed their position by direct descent from Crown grantees. The economic security conferred by the consolidated estates which the Crown offered for sale in the sixteenth century seems to have made it difficult for them to mismanage their property so far as to lose it entirely.

This study ends with the death of Elizabeth in 1603, which is perhaps too early for a study of long-term trends. Demographic and economic processes combined to reverse some of the social changes effected by the sixteenth-century land market. The absorption of many fragments of Crown property into the major estates continued through the seventeenth century.[74] The

[69] For examples of this prejudice, particularly when applied to heriditary estates, see Lawrence Stone, *The Crisis of the Aristocracy*, Oxford 1965, pp 163–64.

[70] NLW, TP/56/145; NLW Courtfield 129.

[71] CP25/2: for an unknown reason most Monmouthshire fines are omitted from the index.

[72] NLW, TP/56/146 is a record of a recovery in the court baron of Dyffryn touching property in Basaleg, St Woolos, Marshfield and St Brides in 1581.

[73] NLW, Milborne 13, 9.

[74] E.g. NLW, Llangibby Castle B945, A1273.

estate papers of the Morgans of Tredegar Park contain deeds of several chantry properties in Newport:[75] some of these had been bought by Sir Thomas Morgan of Rhiwperra and passed to the Tredegar Park estate with the manor of Rumney and the lordship of Newport on the death of John Morgan 'the merchant' in 1715.[76] Edward Kemeys of Cefn Mabli bought the manor of Caldicot Priors at Michaelmas 1603 and his nephew, Nicholas Kemeys of Llanfair, bought the manor of Llanfair from Winifred Hastings's descendants in 1614: these became the foundation of the Llanfair estates of the Kemeys-Tyntes of Cefn Mabli.[77] The property of the Gunters of Abergavenny Priory passed by marriage to the Milbornes, heirs of the Herbert estates of Grace Dieu, then with some of the Grace Dieu property to the Kemeys-Tyntes.[78] The lordships of Usk and Trelech were sold by the heirs of the earls of Pembroke in 1750 and came to the dukes of Beaufort in the late eighteenth century.[79] By this time, individual parcels of monastic and chantry land had been so far absorbed into the local land market as to have lost their significance as former Crown property. But the survival of whole estates based on purchases from the Crown and, in particular, the importance for the major estates of the eighteenth and nineteenth centuries of the great manors and marcher lordships which had passed through the Crown's hands in the sixteenth century, indicate the lasting impact on the social structure of the county of the dispersal of Crown property there.

[75] E.g. NLW, TP/80/58, 84.
[76] NLW, TP/62/51, 124/624; SC6/Chas.I/642; *Dictionary of Welsh Biography*, 1959, pp 636–37.
[77] GwRO, D.43. 5569, 5624 *et seq.*
[78] Bradney I, 39; II, 122–25.
[79] Bradney II, 32; III, 9.

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Watermeadows in Wessex — a Re-evaluation for the Period 1640–1850*

By G G S BOWIE

THIS short article does not propose to present a comprehensive survey of watermeadows in Wessex. Rather the aim is to bring to the fore some statements made by Prof E Kerridge, Dr E L Jones, M C Naish, Dr J H Bettey and Dr J R Wordie during the last thirty years or so, and assess them in the light of evidence from primary documentary sources, ever bearing in mind what is practical and feasible in farming life.[1] There appear to be some inconsistencies in the section on watermeadows in the recently published volume of the *Agrarian History of England and Wales*, notably where Dr Wordie suggests on one page that they were not a 'crucial element' in the farming economy of the Wessex downlands in the seventeenth and eighteenth centuries, and on another that there was 'indeed a great boom' in watermeadow construction between 1640 and 1750. This paper will show that the second supposition is probably correct, but dispute the first contention. The suggestion that watermeadows were not crucial is based on estimates which show the small acreage of watermeadow compared with other farmland. This will be countered with evidence that 'Every brook and riverlet' was 'applied to irrigation when practicable', because the produce of watermeadows was invaluable to the downland farmer and sheep breeder.[2] Indeed, such was their value and importance, that nearly all suitable sites had been converted into watermeadows by about 1790, if not forty years before. Other historians, such as Prof Kerridge, recognize the significance of watermeadows, but find it necessary to minimize construction and maintenance costs, and exaggerate the number of hay crops and hay yields, to prove it. However, such aspects will be seen to be less important than the prospect of a reasonable return on capital investment, and the advantages of a grass crop in early Spring and a reliable hay crop in July — factors which are really crucial for a proper understanding of watermeadows at this time.

* The author acknowledges the advice and assistance of Dr E J T Collins and B Afton in the preparation of this article.

[1] Eric Kerridge, 'The floating of the Wiltshire water meadows', *Wiltshire archaeological and natural history magazine*, LV, no 199, 1953; 'The sheepfold in Wiltshire and the floating of the water meadows', *Econ Hist Rev*, 2nd ser, VI, no 3, 1954; *The Agricultural Revolution*, 1967. E L Jones, 'Eighteenth century changes in Hampshire chalkland farming', *Ag Hist Rev*, VIII, 1960. M C Naish, 'The Agricultural Landscape of the Hampshire Chalklands, 1700–1840,' unpublished MA thesis, Univ of London, 1960. J H Bettey, 'Sheep, enclosures and watermeadows in Dorset agriculture in the sixteenth and seventeenth centuries', *Exeter Papers in Economic History*, no 8, 1973; 'The development of water meadows in Dorset during the seventeenth century, *Ag Hist Rev*, XXV, 1977, pt 1. J R Wordie, 'The South . . . ', J Thirsk (ed), *The Agrarian History of England and Wales*, V, part I, Cambridge, 1985.

I

The predominant type of watermeadow in the region was the 'floated' or 'flowing' meadow. These were located on or near the downland rivers and streams of Hampshire, Wiltshire, Dorset and Berkshire. This involved draining and landscaping riverside meadow, marsh and waste. Such land was 'frequently a flat morass', in which case the first consideration was 'how the water is to be *carried off*', or drainage.[3] Equally significant was that the land of watermeadows was irrigated with water that carried silt and lime in suspension which induced fertility and encouraged grass growth — 'a water-meadow is a hot-bed

[2] Wordie, *loc cit*, pp 331, 329; E Little, 'Farming of Wiltshire', *JRASE* V, 1845, p 167.

[3] Thomas Davis, *General View of the Agriculture of Wiltshire*, 1813, p 120.

for grass . . . water acts upon land so as to accelerate vegetation'.[4] Attempts were made to build 'floated' meadows elsewhere in Britain, but these were not generally successful or permanent. Their effectiveness on the chalk downlands of Wessex was probably due to a unique combination of factors, including the reliability of the flow of chalk rivers and streams; the geomorphology and topography of the area, where the ruling gradient in the valley was a critical factor; and the 'magical effect' of the 'calcareous waters', rich in minerals.[5]

Amongst the best descriptions of watermeadow construction and management are those given by Charles Vancouver and Thomas Davis in their *General Views* of the agriculture of Hampshire and Wiltshire respectively. Their effective use depended upon management and maintenance by skilled men, known as 'meadmen', 'drowners' or 'watermen'. Repair work on the sluices and water channels was undertaken about Michaelmas, and the regularity and timing of the subsequent phase of winter irrigation varied from meadow to meadow, partly as experience suggested, but also sometimes dictated by the need to share a water supply with neighbours. Irrigation was stopped in March and the watermeadows allowed to dry out. It was also advisable at this time to 'employ some people to go over the meadows and cut up the rank weeds that appear, before the grass is too high'.[6] Between the end of March and the middle of May, watermeadows were normally pastured with livestock, normally sheep, but sometimes, especially near towns, dairy cattle. The watermeadows were then repaired, 'watered' again, and a hay crop taken in July. The subsequent aftermath was usually fed off with cattle (stores and dairy stock) and horses, and the cycle started again.[7] The nature of the soil on which watermeadows were built was important, and a gravel subsoil was particularly good as it drained freely. Peat beds did not drain so freely, and required more careful management, but the alkaline water neutralized the acid in the peat which helped to make reasonable crops, and even heavy yields, possible. Watermeadows on peat at Broughton in Hampshire were described as producing heavy crops 'although growing a coarse herbage'.[8]

The first grass crop on the watermeadows was some 4–6 weeks ahead of that obtainable from ordinary meadows, and this 'early bite' was invaluable to sheep farmers on the downs. Generally ewes and young lambs, known as 'couples', fed off this early grass, though which part of the flock was pastured on the watermeadows, and for how long each day, varied from area to area. This green feed was important. 'Even a small watermeadow which will produce an early crop of spring feed at the very time of the greatest pressure of scarcity . . . must be more valuable to a poor arable farm than can be easily imagined.'[9] In the early nineteenth century Thomas Davis considered the alternative — 'the consequences of the month of April', that month between hay and ryegrass, where 'recourse is had to feeding the grass of those dry meadows that are intended for hay . . . frequently the young wheat; in fact, everything that is green'.[10] Arthur Young extolled 'this spring eatage, which is of such importance to flock masters, supplying them with plenty of food at the most pinching season of the year'.[11] Indeed watermeadows were considered to be essential for every 'farmer who keeps a flock of sheep, and particularly a breeding flock', and the question was asked

[4] Davis, *op cit*, p 117.
[5] W Marshall, *The Review and Abstract of the County Reports to the Board of Agriculture*, V, 1817, pp 201, 375.
[6] Wimpey, *Rural Improvements . . .*, 1775, p 107.
[7] J Wilkinson, 'The Farming of Hampshire', *JRASE*, XXII, 1861, pp 289–90; J B Spearing, 'On the Agriculture of Berkshire', *JRASE*, ser 1, XXI, 1860, p 25.
[8] PRO, IR/18/8920.
[9] W Smith, *Observations on the Utility, Form and Management of Water Meadows*, Norwich, 1806, pp 30–31.
[10] Davis, *op cit*, pp 123–4.
[11] A Young, *Annals of Agriculture*, XXIII, 1795, p 266.

'how could the farmers of South Wiltshire . . . pursue their present system of sheep breeding, if these meadows were taken away?'[12] For most of the period under review the sheep were folded at night on that part of the arable land which was being prepared for 'lent corn', or spring barley, thereby enriching the ground with their manure. From the late eighteenth century suitable fodder crops were also used for 'night' folding during this critical period. The inclusion of swedes, July-sown rape, winter rye, and vetches, thus supplemented the effect of the enriched dung derived from the watermeadows. In this sense alone watermeadows were important in the evolution of the sheep-corn mixed farming system on the Wessex downlands.[13]

II

Regrettably, some modern historians have made exaggerated claims about the subsequent hay crop from watermeadows. Kerridge stated, 'if the need for more hay was great' renewed watering 'could produce a second or even a third crop on part or whole of the watermeadow', and Wordie suggested that 'watermeadows could . . . be mowed two or three times a year'.[14] Charles Vancouver, writing in the early nineteenth century, was rather more cautious when he said 'these watermeadows are sometimes, but rarely, laid up for a second crop. They are more frequently fed . . . with grazing or store cattle'.[15] A few years later William Marshall said, 'the watermeadows are laid up for a second crop in some instances; but this is only usual when hay is scarce: not that it is suffered to hurt the land, but the hay is of that herbaceous soft nature, and takes so long time in drying, that it is seldom well made'.[16] H P Moon and F H W Green suggested that 'occasionally in Hampshire a second crop of hay was cut, but the length of time which watermeadow grass takes to dry and the uncertainty of late summer weather made a second crop too precarious'.[17] Occasionally two hay crops were taken where the spring crop was mown instead of being fed. This hay was 'more valuable than the second crop', but required 'great care in making'.[18] No primary source known to the author ever mentions a third hay crop, nor was such a crop likely to be a practical proposition on 'floated' meadows.

Hay yields can also be exaggerated. Prof Kerridge claims that watermeadows 'crop about four times as heavily as other meadowland'.[19] Before continuing, it may be remembered that Charles Vancouver provides reasonably reliable figures of hay yields from 'dry meadows and lowland pastures' for Hampshire in the early nineteenth century. The produce of hay from 'first quality' dry meadow was estimated at 36 cwt per acre, and of the 'inferior' sort 22 cwt.[20] Arthur Young stated in 1795 that a good yield from a properly managed watermeadow on a gravel subsoil was 2 tons of hay per acre, and supporting evidence for this figure is provided by the watermeadows at Wickham which were described as 'properly managed' in 1799 and which produced 'upon an average nearly 2 tons of hay upon an acre'.[21] The sixty-two acres of watermeadow at Broughton were described in the late 1830s as 'good, one half on gravel . . . the other half peat', and yielded 2 tons of hay per acre at the same time six acres at Meonstoke also yielded 2 tons per acre; and 40 acres at Stoke Charity, which were described as being 'very scantily

[12] Davis, *op cit*, p 123.
[13] Jones, *loc cit*, pp 16–17, for background information; also Wilkinson, *loc cit*, p 283.
[14] Kerridge, 1953, *loc cit*, pp 107–8; Kerridge, 1954, *loc cit*, p 287; Kerridge, 1967, *op cit*, p 259; Wordie, *loc cit*, p 330.
[15] C Vancouver, *General View of the Agriculture of Hampshire*, 1810, p 272.
[16] Marshall, *op cit*, p 199.
[17] H P Moon and F H W Green, 'Water Meadows in Southern England', appendix 2, *The Land of Britain*, pt 89, Hampshire, 1940, p 382.
[18] Spearing, *loc cit*, p 25.
[19] Kerridge, 1967, *op cit*, p 259.
[20] Vancouver, *op cit*, p 264.
[21] Young, *op cit*, p 265; *The Annual Hampshire Repository*, I, Winchester, 1799, p 72.

supplied with water', yielded 1¾ tons.[22] These figures are sufficiently similar to suggest an average which is far less than Kerridge would have us believe. Individual yields could be even less, as for example in the case of a poorly managed watermeadow on peat. The sixteen acres which belonged to Thomas Heathcote in Otterbourne Mead near Winchester yielded 9 tons of hay in 1743, 17 tons in 1744 and 13 tons in 1745.[23]

Haymaking could provide its problems as well. Watermeadow grass was said to be 'often coarse', and the 'cutting of the grass young and in full sap' was 'indispensable for preserving its nourishing qualities'.[24] Farmers were urged to mow their watermeadows 'before the grass is over ripe, otherwise the bottoms will grow yellow and contract a disagreeable rankness'. Care had to be taken when drying the grass and the hay had to be 'pretty well made . . . one is more apt to under make it in hot scorching weather . . . as the outside will seem very dry, when the inside is full of its native sap and moisture' . . . in these circumstances, if a large hay rick is set up 'there will be danger of its firing; if a small one, it will turn musty'. Nevertheless, although an opinion was strongly cherished that the hay did not contain that 'feeding or fattening quality' obtainable from good dry meadow, the grass from watermeadows was said to be 'very succulent and juicy, if cut in good season'.[25] Thus reliability can be seen to be the critical factor — after all, farmers were 'nearly certain of a crop of hay on their watermeadows, be the season what it may', and good watermeadow was 'very valuable land, especially in dry summers, when crops on dry meadows run very short and thin'.[26]

III

Watermeadows provided the downland farmers of Wessex with a new supply of animal food, and as such played a crucial part in the evolution of the 'sheep and corn' husbandry system. Hence it is surprising that there appears to be no proper consensus of opinion about the date by which they were in general use. Instead a range of dates has been suggested for major phases in watermeadow construction which rather reflect the historical bias of the authors than demonstrate a careful examination of the available evidence. Kerridge linked them with his concept of a seventeenth-century agricultural revolution, asserting confidently that 'everything points to the years between 1629 and 1665 as the period when floated meadow construction was at its height', whilst at the other chronological extreme Jones commented that 'another sign of the growing need for an alternative to natural pasture may be seen in the "boom" in water-meadow construction between 1780 and 1830', reflecting his belief in a sheep food/tillage crisis in the late eighteenth and early nineteenth centuries.[27]

Watermeadows were certainly widely distributed in Wessex at a fairly early date. In Hampshire they had been built on all the major south-flowing rivers by about 1686, as for example at Sturbridge Mead, North Stoneham, constructed on a tributary of the River Itchen in 1648; How Park Meads near Kings Somborne, River Test, built about 1657; and Gorley Meade, River Avon, built in 1686–7.[28] Kerridge suggests that the 'essential pattern' of the 'floated meadow network' was determined by 1665, but the evidence from Hampshire, though fragmentary, indicates that such an essential pattern was not established until the early years of the eighteenth century, and was then followed by a phase of 'infilling'.[29] For example, a considerable number of watermeadows had been built between Kingsworthy and South Stoneham on the

[22] PRO, IR/18/8920, 9066, 9146.
[23] HRO, 18M54, Cof 11, Box P. Heathcote Estate Papers.
[24] Vancouver, *op cit*, p 269.
[25] Wimpey, *op cit*, pp 107–8; Vancouver, *op cit*, p 277.
[26] Davis, *op cit*, p 125; Wimpey, *op cit*, p 105.
[27] Kerridge, 1967, *op cit*, p 266; Jones, *loc cit*, p 15.
[28] HRO, 102M71, T 133. Fleming Estate Papers; HRO, 5M50/2529. Daly Mss; HRO, 6M80, ME/T 124.
[29] Kerridge, 1967, *op cit*, p 266.

River Itchen by the 1700s, including 'meads' at Winnall, immediately to the north of Winchester, built about 1660; Marsh Moores, immediately to the south of Twyford, between 1670 and 1672; and North Stoneham Meads, constructed about 1700.[30] Compton Malm, built about 1730 between St Cross and North Twyford, and Otterbourne Mead, built in 1730–31, show the process of infilling. In fact the latter appears to represent an example of overcrowding as within ten years it was 'overflowed with water and lain in a ruinous condition'. Here the watermeadow could neither be drained or irrigated properly because of the competing needs of watermeadows already existing immediately upstream and downstream of it.[31] M C Naish postulated a 'boom' in watermeadow construction in Hampshire for the period 1791–1840, but his evidence is not convincing, and actually indicates that most of the suitable locations in the county had already been exploited by 1791.[32] In fact it is probable that the situation in Hampshire in the early 1790s was similar to that in South Wiltshire at the time, where 'very few spots of land capable of being watered remain otherwise'.[33] Jones makes this point when he agrees with H P Moon and F H W Green that 'during the eighteenth century in particular, watermeadows must have been pushed to the limits of areas where it was possible to construct them', and also provides two pages of evidence which 'indicate the scale on which meadows were floated' in the eighteenth century. No such evidence is given for the postulated 'boom' of 1780–1830 other than citing a 'personal communication' with P G H Hopkins.[34] On balance it would appear that the main phase of watermeadow construction in Wessex was completed by about 1750, and certainly by 1790.

IV

Some modern writers have tended to oversimplify the question of construction and maintenance costs. Construction costs of watermeadows in the early nineteenth century were estimated at between £12 and £20 per acre for Wiltshire; £6 and £8 for Dorset; £5–£6 for Hampshire; and between £15 and £40 per acre for Hampshire in the mid-nineteenth century.[35] These are so much at variance as to be almost meaningless, but fortunately more precise figures are available. Marsh Moores, Twyford, cost approximately £3 6*s* 0*d* per acre to build in 1670–72, whilst Otterbourne Mead cost just over £6 per acre in 1730–31.[36] Surveying, designing and supervising contracts appear to have been undertaken by local engineers. At Twyford, Richard and John Baily were referred to as 'millwrights', and were also responsible for reconstructing nearby Shawford Mill at the same time. Their fees accounted for over half the cost of the watermeadow project, whilst Thomas Hardin charged two-fifths of the total cost for watering Otterbourne Mead. However, there is just not sufficient data available to generalize about construction costs and fees. Kerridge stated that 'the cost of maintenance was not great. The carriages and works have only to be scoured and repaired annually', and Bettey that 'once laid out, the subsequent annual costs of maintenance were very low, no more at most than 10*s* per acre'.[37] Thomas Davis gives similar maintenance figures, adding that the expense of the hatches (sluice-gates) 'if well made' was a 'mere trifle for many years'.[38]

In reality, the cost of correcting poor or inadequate original design, and of repairing,

[30] HRO, 18M61, Box F, Bundle 1. Knight Estate Papers; HRO, 46M72. Mildmay Estate Papers — 4 long account books; HRO, 102M71/ES.
[31] HRO, 18M54, Cof 11, Box P, Pkt 1. Heathcote Estate Papers.
[32] Naish, *loc cit*, pp 260–77.
[33] Davis, *op cit*, p 122.
[34] Jones, *loc cit*, pp 6–8, 15.
[35] Davis, *op cit*, p 121; Bettey, 1977, *loc cit*, p 43; Vancouver, *op cit*, p 268; Wilkinson, *loc cit*, p 288.
[36] HRO, 46M72; HRO, 18M54, Cof 11, Box P.
[37] Kerridge, 1953, *op cit*, p 106; Bettey, 1977, *op cit*, p 43.
[38] Davis, *op cit*.

replacing and rebuilding hatches, weirs and revetments, could be considerable. Marsh Moores, Twyford, appears to be an example of this as by 1686, fourteen years after its construction, its hatches and weirs were decayed and 'waterbankes' eroded. Between 1686 and 1688 over £120 was spent on repairing 'wyars', rebuilding banks, levelling pasture and on other associated works, and the main hatches, Great Wyer and Segars Wyer, were completely rebuilt in 1704 and 1706 respectively.[39] Unfortunately, the watermeadow element cannot be isolated in the estate accounts and rentals surviving for this period, so that it cannot be proved that increased rents and returns from the improved land actually covered the cost of these repairs and replacements. Bad design, problems with water supply, water drainage and neighbours, and poor management feature in the unfortunate story of Otterbourne Mead, built 1730–31, aspects of which have already been mentioned. At first its fifty-four acres appear to have been watered successfully, so that by 1736 it was sufficiently drained and fertilized to allow double the number of cattle stock to be kept. However, by 1740 it was in a 'ruinous condition', and some improvements were attempted. £163 was spent on further alterations in 1746–47, but by the end of the century the meadow was again in a very poor state, and it is possible that it never did provide much of a return on the capital invested in it.[40]

Thus it would appear that at least some watermeadows were subject to alteration and modification until a tolerable balance between irrigation and drainage was achieved. Thereafter the return on the capital investment was normally good. In 1728 forty acres of waterlogged, unimproved meadow at Compton Malm, near Twyford, was worth 10*s* per acre; it was estimated that if watered its value would be increased to £2 per acre. A valuation of Pittleworth Farm, near Romsey, made in 1793 indicated that the watermeadow was worth over twice the value of the arable land.[41] About the same time, George Boswell provided figures for watermeadows rented by the year which were located within a few miles of Puddletown, Dorset.[42] The yearly rental for a watermeadow 'detached from any other land' was said to be 25*s* to 45*s* per acre, and the occupier also had the 'liberty to sell the hay'. Sometimes the spring feed on a watermeadow was let to one person, the grass standing was sold to another and the aftermath rented by a third. In this case, the spring feed let for about 10*s* an acre (rather a low figure), the uncut grass or hay, 30*s* to £3, and the aftermath from 10*s* to 15*s* 'according to demand and quality'.[43] About the same time Young stated that the 'spring eatage' from watermeadows 'let commonly at 20*s* to 25*s* per acre', whilst the 'aftergrass' on the meads at Wickham, Hampshire, was let from 15*s* to 20*s* per acre in 1800.[44] Generally, their rental value appears to have been about twice that of ordinary dry meadow. The yearly rent for a part of Winnall Mead, north of Winchester, was £16 1*s* in 1752, and the 'advantage of the water' to the meadow was said to be 'not worth less than £30 a year'.[45] The watermeadows at Stoke Charity were described as 'very scantily supplied with water' but still worth 55*s* per acre in 1837, whilst the 'dry meadows of indifferent quality' were worth 30*s*.[46] The rental value of the pasture at Britford, Wiltshire, in 1839 was 80*s* per acre for the watermeadow and 40*s* for the dry meadow.[47]

Further evidence of the value of watermeadows is provided in a 'Report to the Proprietors of Mills & Meadows' between

[39] HRO, 46M72.
[40] HRO, 18M54, Cof 11, Box P.
[41] HRO, 18M54, Cof 6, Box H, Pkt F; Cof 5, Box G.
[42] G Boswell, *A Treatise on Watering Meadows*, 2nd ed, 1790, pp 108–9.
[43] Boswell, *op cit*.
[44] Young, *op cit*, p 266; *Annual Hampshire Repository*, *op cit*, p 72.
[45] HRO, 18M61, Box F, Bundle 1.
[46] PRO, IR/18/9146.
[47] PRO, IR/18/10925.

College Mill, Winchester and Wood Mill, Swaythling, on the River Itchen, written in 1808. The 1271 acres of watermeadow were said to be worth £4050, or £3 12*s* per acre per annum. As unwatered meadows they were said to be worth only a third as much.[48] However, watermeadows probably had an even greater significance as 'appendages to adjoining farms' — the 'abstract value of a good watermeadow' was said to be £5 an acre; 'but its value when taken as part of a farm, and particularly of a sheep-breeding farm, is almost beyond computation . . . '.[49] The value of watermeadows was such that 'in many instances' farmers were 'at a considerable expense in purchasing a supply of water' from watermill owners and tenants.[50] For example, at West Aston Moors, Longparish, five farmers made an agrement with John Hayes, the owner of Upper Mill, in which he allowed them to use his water on three days a week at the rate of 2*s* per acre per year 'for a terme of ten yeares' provided that they 'ground their grist' at his mill — otherwise they paid 4*s* per acre.[51] A similar agreement was made when a watermeadow was built in Hunton Moor, near Stoke Charity, in 1729–30. The occupiers agreed with the owner of Weston Mill to have the use of the water on Mondays, Tuesdays and Wednesdays for twenty-one years at a yearly rental of 4*s* per acre, and the mill owner also had a separate agreement with a major local farmer, Robert Cropp, to supply water to his two watermeadows on the other days of the week, this time at the rates of 4*s* and 8*s* for a ten-year period. These two agreements, embodying a lucrative income for the miller, were confirmed and continued when the 'common down, common meads and moore ground' were enclosed by private agreement in 1732.[52]

[48] HRO, 18M54, Cof 6, Box H, Pkt F, No 27.
[49] Davis, *op cit.*
[50] A and W Driver, *General View of the Agriculture of Hampshire*, 1794, p 19.
[51] HRO, 11M56/119.
[52] HRO, 2M52/27–28.

V

Watermeadows were regarded as such a safe and reliable form of investment that owners were prepared to commit themselves to complicated legal agreements which involved a high degree of cooperation with their neighbours as for example Pool Mead, Otterbourne, a small spring-fed system on the side of the Itchen Valley, which was improved with the construction of a new main carrier in 1829. Its eight meadows occupied just over eleven acres, and belonged to no less than five proprietors who followed up their investment with an indenture which set out a rota for using the water, based on seven days and nights each, and established the maintenance costs for which each proprietor and his successors were liable.[53]

Sometimes this cooperation broke down and resulted in litigation, which in itself indicates the importance of watermeadows at that time. Some owners were prepared to undertake expensive legal actions to defend their rights and preserve the viability of their watermeadows, and in the mid-nineteenth century there were said to be 'many vexatious and expensive law suits' concerning watermeadows in Wiltshire.[54] Near Winchester, the owners and tenants of Winnall Mead, Hyde Abbey Mill, and Durngate Mill had been squabbling for some years about the size of water hatches, responsibility for maintaining particular banks and watercourses, and the amount that should be paid to Mr Knight who had the 'right of water' between Kingsworthy Mill and his own mill at Durngate, before finally submitting to an impartial arbitration in May 1738. Amongst the many clauses of this agreement four tenants of the watermeadows agreed to pay a total of £4 15*s* a year to Mr Knight for the use of his water.[55] The fifty-two acres of Compton

[53] HRO, 18M54, Cof 6, Box H, Pkt 1.
[54] Little, *loc cit*, p 167.
[55] HRO, 18M61, Box F, Bundle 1.

Malm watermeadows were the subject of a court case in 1832–34. It belonged to the Heathcote Estate and was split between two tenants, Richard Goldfinch, occupying the northern, upstream, part and James Comley, the southern. They were subject to an indenture of 1782 which stated a rota for winter, spring and summer watering, and had collaborated on improvements and drainage works in 1805 and 1816. However, in the late 1820s Goldfinch built a new carrier and drain which flooded and 'materially injured' Comley's watermeadows. Communications broke down and the landowner was forced to take legal action against Goldfinch. The latter was dead by the time the case was heard in September 1834, and judgment, with considerable costs, was made against his heirs who quit the farm soon after.[56]

It is probable that problems about cooperating with neighbours, water supply and water rights and maintenance problems only influenced the decline of watermeadows when viable alternatives to their produce became available. Decline was slow and irregular, both in area and time, but the first signs of it can be recognized in the 1840s. In Wiltshire in 1845 the point was made that 'the real value of watermeadows is not as great now' as it had been in the early nineteenth century; 'it was thought impossible at that time for the sheep farmer to breed lambs on such farms as were not fortunate enough to possess them, but since the introduction and extensive growth of swedes, turnips and other artificial food, many farmers that have little or no grassland, have produced lambs equal, if not superior to those occupying the best watermeadows'.[57] In Dorset in 1854 it was suggested that the growth of roots and 'artificial' grasses had rendered meads less necessary, but 'not less acceptable', in sheep husbandry.[58]

The coincidence of interests of those involved in watermeadow construction and maintenance — landowner, tenant and farmer, and watermill owner — helps explain why watermeadows played such a crucial part in the development of the farming economy of the chalk downlands of Wessex during the period 1640–1850. Landowners and farmers especially shared mutual interests — landowners because the conversion of waterlogged marsh and waste into watermeadow constituted an improvement which increased the value of the land, and farmers because of the advantages of a grass 'bite' in early Spring and a reliable hay crop in July. Hence the role and function of watermeadows were vitally important during the changes in, and the evolution of, the 'sheep and corn' system on the chalk downlands of Wessex in the eighteenth and early nineteenth centuries.[59]

[56] HRO, 18M54, Cof 6, Box H, Pkt F, No 27.

[57] Little, *loc cit.*

[58] L H Ruegg, 'Farming of Dorsetshire', *JRASE*, XV, 1854, p 404.

[59] Jones, *loc cit*, p 19.

The Agricultural Statistics for 1854: An Assessment of their Value

By PHILLIP DODD

AS A SOURCE of agricultural information, the statistics collected in 1854 have been neglected by most students of the period other than the present writer. In his wide-ranging study of agricultural sources, Coppock[1] reported somewhat adversely on the degree of opposition encountered in the collection of the statistics, although subsequently he tended to modify his opinion.[2] However, anyone taking heed of Coppock's assessment could be forgiven for putting aside any intention of making use of the data.

In their original form, the Agricultural Statistics of 1854 for England and Wales[3] were of rather limited value inasmuch as they were compiled by Boards of Guardians and presented for the individual Poor Law Unions of the eleven counties concerned. The following extract for Suffolk is typical of the manner in which the statistics were presented (Table 1).

The geographical composition of these Poor Law Unions is somewhat obscure and initially it becomes necessary to identify the area represented by each union, parish by parish.[4] Further, it is essential to determine by the same means the actual acreage of each union in order to assess the accuracy of the return as made, and to discover the extent of inclusion or exclusion of certain parishes and townships in the case of unions on the border of two or more counties.

Figures 1 and 2 illustrate the plotting of the several Poor Law Unions once their area has been determined. Poor Law Unions are administrative units and by their nature usually do not provide meaningful topographical areas for employment in discussion of land use. The examples given for Suffolk indicate how to overcome such difficulties and so map the relevant features extracted from the statistics, in this case arable and the livestock densities per 1000 acres of total area.

Most of the counties contain unions which overlap other counties, as for example the West Riding which included the unions for Worksop and Bingham — both in Nottinghamshire — and with parishes in both counties. For Norfolk, Thetford Union of some 115,000 acres embraced 40,000 acres of Suffolk parishes. In the case of Shropshire, for Oswestry Union some 17,000 acres of Denbighshire were included while for Newport Poor Law Union 15,000 acres of Staffordshire were embraced. Andrew Doyle, the Poor Law Inspector responsible for both Denbighshire and Shropshire, made no reference to these discrepancies in either of his Reports. Further, Doyle's return for Ellesmere Poor Law Union was given as complete except for one 'Schedule A' involving 104 acres, whereas in actuality there were some 47,000 acres unreturned. Moreover the report was so worded that the impression was given that the position in some unions, notably Drayton, was worse than actually was the case. Fortunately Doyle was the exception. Less fortunately for the student of British agriculture, he surfaced again in 1880 as the Assistant Commissioner responsible for the

[1] J T Coppock, 'The Statistical Assessment of British Agriculture', *Ag Hist Rev*, IV, 1956, pp 12–13.

[2] Personal communication from J T Coppock in the light of my observations on the 1854 Reports.

[3] BPP Reports by Poor Law Inspectors on Agricultural Statistics (England) House of Commons Sessional Papers 1854–55, Cd 1928.

[4] Return of Union averages, House of Commons 490, 11 August 1854.

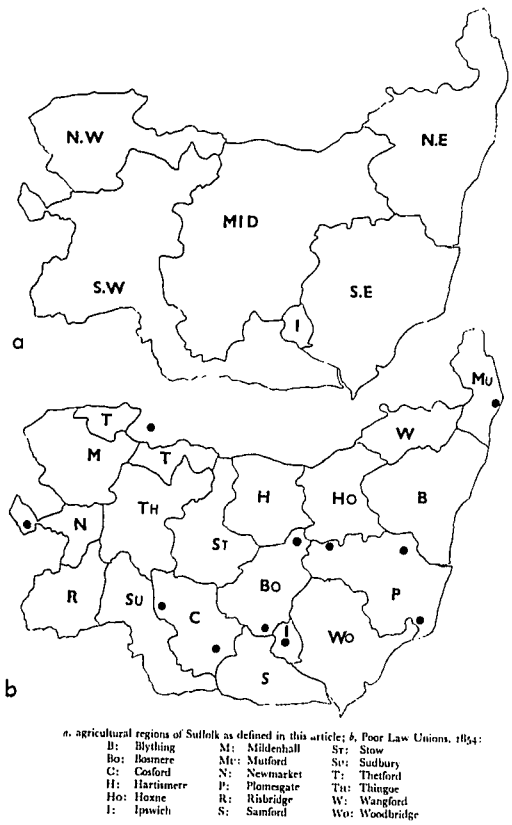
TABLE 1

Agricultural Statistics for Blything Union, Suffolk, 1854

Name of Union	*No of Parishes*	*Number of acres under grass*				
		Clover, lucerne and other Artificial Grasses	*Permanent Pasture*	*Irrigated Meadows*	*Sheep Walks and Downs*	*Total*
		A R P	A R P	A R P	A R P	A R P
Blything	49	7972 0 0	16,159 0 0	992 0 0	4026 0 0	29,149 0 0

No of acres in Houses, Gardens Road, Fences etc.	*No of acres in Waste (if any) attached to the Farm*	*No of acres in Wood and Plantation*	*No of acres in Commons belong to the Parish*
A R P	A R P	A R P	A R P
5309 0 0	1274 0 0	3126 0 0	925 0 0

No of acres in Holdings of less than two acres	*No of acres (if any) not accounted for*	*Total*
A R P	A R P	A R P
1052 0 0	155 0 0	11,841 0 0

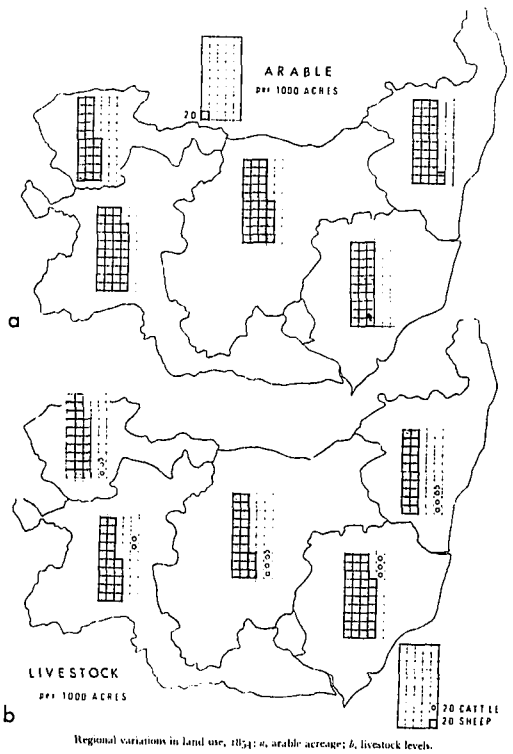


a, agricultural regions of Suffolk as defined in this article; *b*, Poor Law Unions, 1854:

B:	Blything	M:	Mildenhall	St:	Stow
Bo:	Bosmere	Mu:	Mutford	Su:	Sudbury
C:	Cosford	N:	Newmarket	T:	Thetford
H:	Hartismere	P:	Plomesgate	Th:	Thingoe
Ho:	Hoxne	R:	Risbridge	W:	Wangford
I:	Ipswich	S:	Samford	Wo:	Woodbridge

FIGURE 1

Agricultural regions and Poor Law Unions for Suffolk, 1854



Regional variations in land use, 1854: *a*, arable acreage; *b*, livestock levels.

FIGURE 2

Regional variation in land use, Suffolk, 1854, arable acreage and livestock level

reports for Wales and the West Midlands relating to the depressed state of agriculture. His reports were based on questionnaires, the content of which bore little reference to agriculture as such. When compared with commissioners like Druce and Coleman who actually took notes first-hand throughout their counties, one is left very conscious of Doyle's incompetence.

At ground level the Poor Law officials responsible for collecting the statistics were concerned at the poor rate of remuneration offered and the obstruction to their normal duties. In the instance of Worcestershire, collection of the schedules was hampered by the wintry weather and in Worcester Union a late return was made because of 'the cholera which prevented the enumerator, the Relieving Officer, from proceeding with his duties'.[5] There was also concern that new duties were to be imposed which were hardly relevant to those of the administration of the Poor Law proper. There was some justification for this view as Dr Kay, a former Assistant Commissioner for the Poor Law, had, in his capacity of Secretary to the Privy Council Committee of Education (1838–44), shown signs of developing the educational activities of the Poor Law Unions. The prospect of another department, the Board of Trade, saddling the unions with responsibility for collecting agricultural statistics was obviously one to be resisted.

Some factions were opposed to the Aberdeen government and in all probability many persons were anti-Gladstone. Certainly, in 1854 he was hardly a popular figure with country landowners and occupiers, having imposed in his capacity as Chancellor of the Exchequer an increase in income tax during the summer as a means of meeting the cost of the Crimean War. He refused to exempt the agricultural interest from the tax and there was also a sense of betrayal due to repeal of the Corn Laws, which was still fresh in the minds of many, who were resentful of the failure of the government to afford them compensation for removing protection from agriculture.[6] Certainly the opposition to, and actual failure to make, the 1854 Returns in several Poor Law Unions in some of the counties concerned, stemmed from those who had earlier been vigorous proponents of the Corn Law lobby, the Agricultural Protection Societies.

In Shropshire, this opposition was demonstrated in North Shropshire, and in the Ludlow Union was clearly attributable to occupiers who were known members of the Shropshire Agricultural Protection Society. In Shrewsbury and north Shropshire the campaign was given Parliamentary support by Disraeli, then member for Shrewsbury. Similarly, in Berkshire the hand of the Agricultural Protection Society was clearly to be seen.[7] However, one must not exaggerate the degree of opposition to the collection of the agricultural statistics. The great majority of occupiers complied with the request to complete 'Schedules A' and in those cases where there was a shortfall in the numbers returned, the enumerators went out and made up the details from actual inspection of farms and from parish rate books. In cases where there was a deliberate intention to conceal the facts this was most likely to occur in the return made for livestock. The statistics employed by the present writer are expressed in terms of densities per 1000 acres of the total acreage of each union. Discrepancies clearly show up when comparing one union with another, or one county with another. Thus the deficient returns from Wantage, Bradfield, Newbury and Hungerford Unions of Berkshire tended to depress the overall sheep density of the county and the resultant

[5] J Phillip Dodd, *Worcestershire Agriculture in the mid-Nineteenth Century*. Worcestershire Historical Society, Occasional Publications, 2, 1979, p 7.

[6] *Hansard*, adjourned debate on Corn Laws, 17 February 1846, 1099.

[7] J Phillip Dodd, 'Agricultural Protection in Berkshire and Opposition to the Collection of Agricultural Statistics', *Southern History*, 1986.

county total of 601 sheep per 1000 acres may quite properly have been of the order of 700 per 1000 acres, when one compares the situation with what prevailed on similar lands in Wiltshire and Hampshire.

I

However, before the total acreage of any county can be assessed for 1854, the true acreage has to be established. This is not as easy as might be imagined, as county acreages tended to fluctuate considerably, particularly as accurate returns did not become available until the advent of the Land Use Surveys of the 1930s. Where there were appreciable discrepancies between the acreage returned for 1854 and the better established acreage of the Land Use Survey, invariably the acreage not returned closely approximated to the acreage of unenclosed mountain, heath and rough grazing existent in 1854, but which was a land category not requested in 1854. This category of rough grazing was missing from all June returns until 1892, while the acreage of mountain and heath in each parish was not listed until the 1901 June returns. Only when the 1854 acreage is adjusted to take note of this category of land in rough grazing does it become possible to establish what the true 1854 return should have been and what in effect was missing from the acreage as returned. To take a case in point, the 80 per cent cover of Shropshire in 1854 makes the return a viable statistical source as a base for analysis. Further, when one notes that the 80 per cent comprises some 640,000 acres whereas the June return of 1866 relates to 621,000 acres of crops and grass, it reinforces the view that the 1854 statistics were more comprehensive for all the counties concerned in the 1854 collection than those of the early June returns compiled before *c*1873. Detailed analysis of all the factors involved makes it possible to affirm that the statistics for the 1854 returns are a viable source for assessment of contemporary land use. Reinforcement of this point may be gathered from the present writer's analysis for Norfolk.[8]

The problem of defining the county area is general for all counties throughout the nineteenth century. Even in the present day it is not unknown for discrepancies of *c*1,500,000 acres in statistics for England and Wales to arise.[9] As far as Norfolk is concerned, for want of more precise information we may take a figure of *c*1,350,000 acres as a working basis for the period covered by this discussion.

In his final report, Sir John Walsham stated that the Norfolk figures, after making appropriate adjustments, were within a few thousand acres of the 1851 Census acreage. In working over the statistics and making the same adjustments I find a difference of about 100,000 acres between the size of the 1854 Return and the total county area. The difference of 100,000 acres,[10] in a county the size of Norfolk with such an extensive coastline, is not of especial significance, and can be attributed to lands not included in the Return eg coastal marsh, saltings, mudflats, stretches of inland water such as the Broads and ornamental lakes, fenland, dykes, railways, sandlings, estuarine marsh, and park-land.

In this respect the 1854 Returns afford a coverage which compares very favourably with later Returns (Table 2).

The 1854 figures showed 16,834 acres of parish commons, a total which was confirmed by the Commons Report of 1873[12] which listed 16,406 acres. Parish commons do not appear in the Board of Agriculture Statistics but a Return of rough grazings was commenced in 1892 when

[8] J Phillip Dodd, 'Norfolk Agriculture in 1853–4', *Norfolk Archaeology*, XXXVI, Part III, 1976, p 255.

[9] R H Best, 'The Statistical Pattern of Land Use in Great Britain', *Geography*, XLIV, 1959, p 199.

[10] Inland water representing 43,000 acres, and 15,000 acres of marshland in the Northern Alluvial Plain, account for 60 per cent of this total.

[11] Includes Suffolk portions of Thetford Union, an area nearly equivalent to the deficient portions of Flegg, Guiltcross and Wisbech Unions.

[12] BPP, House of Commons, Paper 85, *A Return of Waste Lands — 1873*, 1874.

TABLE 2
Comparison of 1854 statistics with later Board of Trade June statistics

1854	Total crops and grass	1,021,059 acres[11]
1866	Total crops and grass	1,009,087 acres
1870	Total crops and grass	1,048,929 acres
1875	Total crops and grass	1,067,829 acres
1888	Total crops and grass	1,095,195 acres

(This was the largest Return ever made for Norfolk)

The figures for crops and grass made up of the acreages of tillage including rotation grass, and of permanent grass including irrigated meadow, exhibit reasonable agreement with those of later Returns.

		Acres		*Acres*
1854	Total arable	812,389	Permanent grass	208,670
1866	Total arable	800,215	Permanent grass	208,872
1870	Total arable	834,450	Permanent grass	214,479
1875	Total arable	836,807	Permanent grass	231,022
1888	Total arable	811,515	Permanent grass	283,680

32,798 acres were listed under this head. The 1854 Returns showed this information as farm waste, and parish commons, which total 31,000 acres. Some 55,000 acres of sheepwalk listed in 1854 brings up the rough grazing figure to 86,200 acres, not so dissimilar from the 1934 total of 84,144 acres; 51,221 acres of woodland were listed in 1854, a figure which closely corresponds with later Forestry Returns. The Land Utilization Survey of 1935 total, less Thetford Chase afforestation, shows 57,000 acres. Strangely enough the sum of woodland and rough grazings (including sheepwalk) in 1854 yields a total of 137,421 acres which tends to confirm the earlier estimate of 143,346 acres, reported by Arthur Young as 'waste' in 1795.[13] In addition to woodland and rough grazing, the 1854 Returns give details of the acreage of houses, gardens etc, an item which does not appear in later Returns.

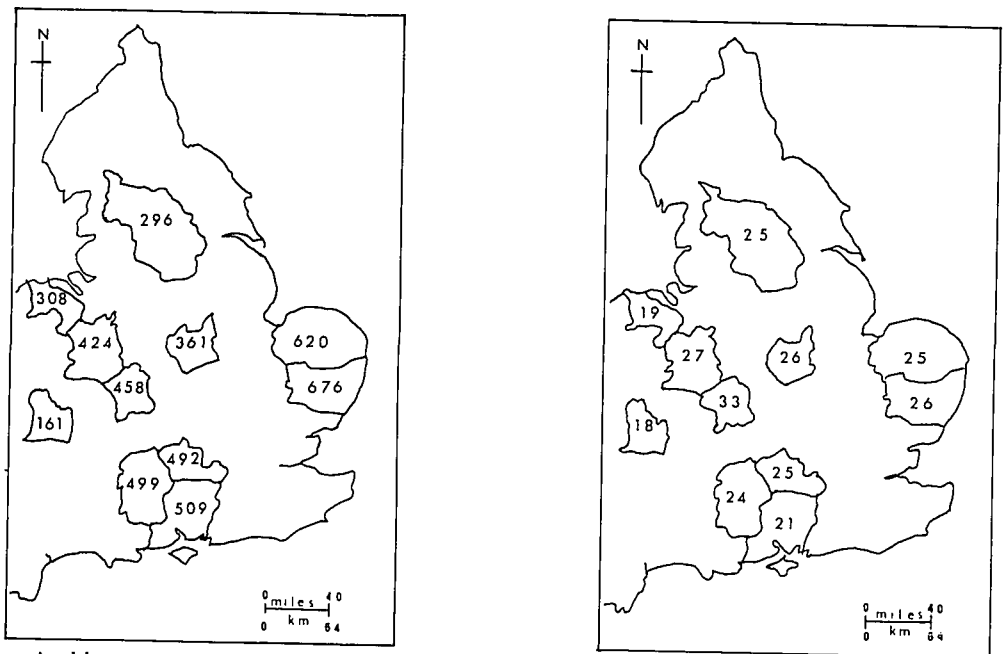
II

The counties concerned in 1854 were Denbighshire and Breconshire for Wales, Shropshire, Worcestershire, Hampshire, Wiltshire, Berkshire, Norfolk, Suffolk, Leicestershire and the West Riding for England (Figs 3 & 4). Scotland was treated in a much more efficient manner than in the scheme applied to England and Wales. The returns were made on a county basis which could be broken down into more satisfactory geographic regions for each county.

On the question as to what lay behind the intention of the Board of Trade to select these eleven counties, one may only presuppose that an attempt to compare land use in different geological and topographical conditions was a prime consideration. Brecon and Denbighshire comprise a view of Wales while in England, Worcestershire and Shropshire may be held to balance conditions of land use on the far side of England in Norfolk and Suffolk. The West Riding represents northern upland England and Berkshire, Wiltshire and Hampshire present a contrasting picture of the land use of the Chalk of Southern England.

Leicestershire provides the example of a livestock-orientated county and only one major geological conformation, that of the Jurassic rocks, was left out. This was unfortunate and Gloucestershire could well

[13] *Annals of Agriculture*, XXIV, 1795, p 10.



a. Arable per 1000 acres

b. Wheat per 100 acres of arable

FIGURE 3
Counties embraced by the collection of Agricultural Statistics, 1854

a. Cattle per 1000 acres

b. Sheep per 1000 acres

FIGURE 4
Counties embraced by the collection of Agricultural Statistics, 1854

have been included in place of one of the southern Chalk counties.[14]

In many ways the 1854 statistics provided much more information than was contained in the later June returns. The information was presented under some forty headings. Thirteen of these related to tillage crops, ten concerned aspects of land use comprising land in bare fallow, ley crops such as clover, lucerne and other artificial grasses, permanent pasture, irrigated meadows, sheepwalks and downs, number of acres in waste attached to the farm, number of acres in commons belonging to the parish, number of acres in wood and plantation, number of acres in holdings of less than two acres, in houses, gardens, roads, fences (ie urban land use).

Livestock were presented under ten headings. Horses and colts may be examined to determine whether breeding was a feature of any particular union. By relating the number of horses to the acreage in cultivation one may also discover whether the stock was in excess of what was necessary to work the land, which in turn may point to the employment of the excess stock for some non-agricultural use such as in traction for quarries and coal mines or in carriage at ports or urban centres. The influence of the urban population of the textile towns between the Calder and Aire could be seen to affect land use in more ways than one;[15] with insufficient arable to justify a horse population of any consequence, it was obviously the industrial factor which raised the horse stock to 18 per cent of the total for the Riding. At Goole, Selby and York, for reasons no doubt connected with port communications, the horse ratio rose to one to 16 acres.

Other categories of livestock were listed as milch cows, calves and other cattle including working oxen. For sheep there was individual listing of tups, ewes, lambs and other sheep. Swine were also noted. Analysis of the statistics for cattle and sheep provides an insight into the nature of the livestock economy. Allowing for the fact that the statistics were made up after the Martinmas and Michaelmas livestock sales, it can be determined whether dairying was a significant activity, whether breeding and rearing was a feature and what the fertility range of the cow or ewe stock may have been. In the London Basin region of Hampshire dairy cattle represented 52 per cent of total cattle stock and stores about 24 per cent. For store cattle the expense of winter keep and the factor of distance from the market could be seen to modify the overall average; thus in Kingsclere stores formed 16 per cent of the stock, while in Farnborough the proportion was 34 per cent, indicative of the influence of the Reading and Aldershot meat markets.[16]

With sheep the proportion of tups to ewes could be informative and this may be exemplified in the return for Uppingham Union in south-east Leicestershire.[17] Tups were in the ratio of one to fifteen ewes, a high proportion which must have contributed to successful fertilization. The relation of lambs to ewes likewise indicates flock fertility and the relative incidence of lamb mortality. At Uppingham ewes comprised 29.8 per cent of the total sheep stock and lambs 30 per cent, thus fertility-survival rate for lambs to ewes was one to one. The analysis of flock composition also is worthy of study to reveal whether rearing and fattening were of significance. At Uppingham the stock being carried on formed 38 per cent of the flock thus indicating that feeding and fattening were features of the sheep economy in this union.

[14] J Phillip Dodd, 'Gloucestershire Agriculture 1801–1854', *Trans Bristol and Gloucestershire Archaeological Society*, 97, 1979.

[15] J Phillip Dodd, 'The West Riding Crop Returns for 1854', *Yorks Arch Jnl*, 51, 1979, pp 125–6.

[16] J Phillip Dodd, 'Hampshire Agriculture in the mid-Nineteenth Century', *Proceedings of Hampshire Field Club and Archaeological Society*, 35, 1979, pp 243–4.

[17] J Phillip Dodd, chapter in *The Adaptation of Change: Essays upon the History of Nineteenth Century Leicester and Leicestershire*, ed Daniel Williams, Leicester, 1980, p 131.

III

The statistics yield no information on the size of farms and one has to adopt other approaches. Although statistically unsatisfactory, by dividing the acreage of a particular union by the number of 'Schedules A' completed, one is able to obtain a projection of mean farm size by which to compare one union with another. In Leicestershire for example, one is able to say that the farms in the SW region were the largest in the county with an average of 65 acres, but with only about half this figure in the Hinckley area. For the Soar–Wreake Valley farms were small units averaging 33 acres while in north-east Leicestershire, in Bingham Union farms were medium-sized at an average of 46 acres, but in Grantham Union they were somewhat larger at an average of 53 acres.[18]

The statistics for holdings of under two acres together with the urban acreage for each union are obviously of considerable value in discussing land use. In Worcestershire the average of holdings under two acres was 26 per 1000 acres. However, in the Black Country the percentage increased to 130 per 1000 acres. This was a direct development from the 1845 Chartist Land Colonization Scheme at Dodford near Bromsgrove: 'In the Stourbridge area there are numerous land societies which have come into existence within the last few years, by means of which a great portion of land has been divided into small lots, varying from one rood to one acre in extent, and is chiefly cropped with culinary vegetables.'[19]

The policy of presenting the statistics in terms of 1000 acres of total area enables one to isolate and discuss various features of the contemporary land use of unions. A case in point is that of the nature of crop rotations being followed. One speaks of the Norfolk rotation which in 1854 in virtually every Norfolk union was wheat, barley, turnips, leys (Table 3).[20]

In like manner soil differences may be picked out which influenced the nature of the cropping. In the Avon Valley of Worcestershire the presence of heavier soils could be seen in the rotation followed per 100 acres of arable (Table 4).[21] The high incidence of beans and bare fallow at the expense of barley and turnips pointed to a difficulty in working the heavier soils.

The role of the Chalk downland as a determinant in the land use of Southern England is brought out in Fig 5. The

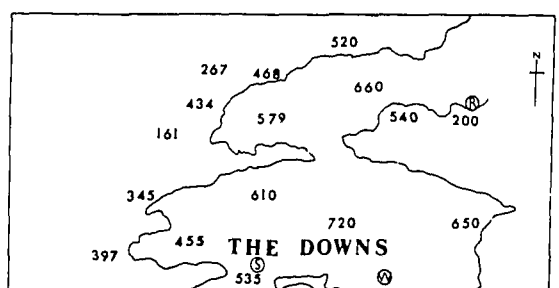


FIGURE 5
Arable acreage per 1000 acres on the South Downs, 1854
R = Reading S = Salisbury
D = Dorchester W = Winchester

Tertiary sands, gravels and clays south of the chalk illustrate the marked decline in arable working of the land, while on the clays to the west the reductions are even more in evidence. In North Berkshire in the Vale of White Horse the outcrop of the Corallian Beds operated to push up the arable acreage to 52 acres per 1000.

The management of sheep was a strong feature of the farm economy of the chalk but analysis of the statistics reveals significant

[18] *Ibid*, pp 126–8.
[19] William Ackroyd, 'Report on the 1854 Statistics from Stourbridge Union. 16 January 1855'.
[20] Dodd, 'Norfolk Agriculture', *op cit*.
[21] J Phillip Dodd, 'Worcestershire,' *op cit*, pp 21–2.

TABLE 3
Sample cropping in Norfolk Poor Law Unions in 1854

Union	*Wheat*	*Barley*	*Turnips*	*Leys*	*Other*	
Aylsham	25	24	23	24	4	Per 100 acres of arable
Walsingham	25	23	23	23	6	Per 100 acres of arable

TABLE 4
Sample cropping in Worcestershire Poor Law Unions in 1854

Union	*Wheat*	*Barley*	*Turnips*	*Leys*	*Beans*	*Fallow*	*Other crops*
Alcester	35	5	5	22	11	17	5
Evesham	36	8	7	15	12	12	10
County	33	9	9	16	10	13	10

differences in the stocking densities of the chalk counties themselves. Thus Wiltshire, containing a larger volume of downland than Hampshire, produced a sheep density of 942 head per 1000 acres, whereas for Hampshire the total declined to 585 per 1000. Cattle densities for the whole of the counties involved in the 1854 collection averaged 104 head per 1000 acres. In the instance of these two Chalk counties, the emphasis on cattle was markedly subsidiary to that placed on sheep and this is clearly demonstrated in the total of 79 head for Wiltshire and 46 per 1000 acres in Hampshire.

Obviously, the Chalk was far from being the only important factor in land use. Norfolk, with 620 acres of arable per 1000 compared with 509 for Hampshire, stocked cattle at 75 head and sheep at 650 head per 1000 acres.[22] In Leicestershire, where the arable content fell to 361 acres, the livestock totals were 223 head of cattle and 760 head of sheep per 1000 acres.[23] Cross-analysis of the data between counties reveals other features of interest. In north Shropshire, where the Whitchurch area practised cheese making as virtually a monoculture, the cattle density was 239 per 1000 acres. This was higher than most other regions in the kingdom and matches the average enjoyed by the whole of Leicestershire. However, with cattle stocking at 355 head per 1000 acres in the Market Harborough region of that county, the comparison serves to underline the differences in the contemporary attitude towards grassland improvement in the two counties.[24]

Similarly in the West Riding, the traditional importance of the woollen industry encourages belief that the limestone uplands of Craven would carry sheep in such numbers as to contrast favourably with most other mountain grazings. On investigation this proves not to be the case: for example on the Old Red Sandstone Uplands of east Breconshire,[25] and on the same formation in Radnor Forest, sheep densities were 50 per cent higher than in Craven. In either region the land is above 1000 feet OD and conditions of exposure are if anything more severe than in Yorkshire. However, the key to the difference in systems and densities probably derives in some measure from the nature of the feed available. Holliday and Townsend observe that 'the Calluna–Erica–Nardus blacklands provide the main diet in autumn and winter, and that absence of Nardus and Eriophorum reduces wintering

[22] J Phillip Dodd, 'Norfolk Agriculture in 1853–4', *Norfolk Archaeology*, XXXVI, part III, 1976.
[23] J Phillip Dodd, 'Leicestershire', *op cit*, 1980.
[24] J Phillip Dodd, 'High Farming in Shropshire 1845–1870', *Midland History*, VIII, 1983, p 161.
[25] J Phillip Dodd, 'The Brecknockshire Crop Returns for 1854', *Brycheiniog*, VI, 1960.

capacity'.[26] As these are all species found on the Old Red Sandstone but not on the limestone of Craven, where Festuca–Agrostia form the diet element in the ground vegetation, this indicates the answer.

IV

Prior to the commencement of the June Returns of the Board of Trade in 1866, there is a great statistical gap in the knowledge of the land use of the country. The case being made for the 1854 agricultural statistics extends coverage back for twenty years to the Tithe Returns, but what then? Much has been made of the 1801 Returns, but these are of very limited value. Often the county cover is far from complete and if one is familiar with the detail at parish level, the 1801 recorded acreages may turn out to be an underestimate. The returns provide information on the acreages of the basic cereals, wheat, barley and oats. There is also detail of turnips or rape but these were bracketed together so one is left to assume which was implied. Occasionally other crops are noted if the person making the return thought fit. Often the most valuable information occurs in the comments appended by some incumbent or their curates which may give information on other features of land use.

No information was provided on artificial grasses or leys nor on bare fallow, thus it is not possible to discuss the arable acreage. It is true that one dedicated writer has expended much time and energy in attempting to estimate the arable acreage of the country based on the meagre statistics given.[27] However, as leys could represent between 20 and 40 per cent of the arable acreage according to whether a four-course or a five-course rotation was employed while bare fallow could vary from 15 to 30 per cent of the arable acreage, it is clear that faced with such variables no arable projection is viable. The majority of commentators from Minchinton and Henderson onwards[28] have been content to present the statistics and discuss what can be determined as to crop ranking.

However, to formulate information of value one needs to plot the parish ranking, say for wheat, on a county map before it becomes possible to discern any sub-regional pattern for the county.[29]

Fig 6 for Herefordshire indicates how the data can be presented in map form, in this case with regions developed from the data.

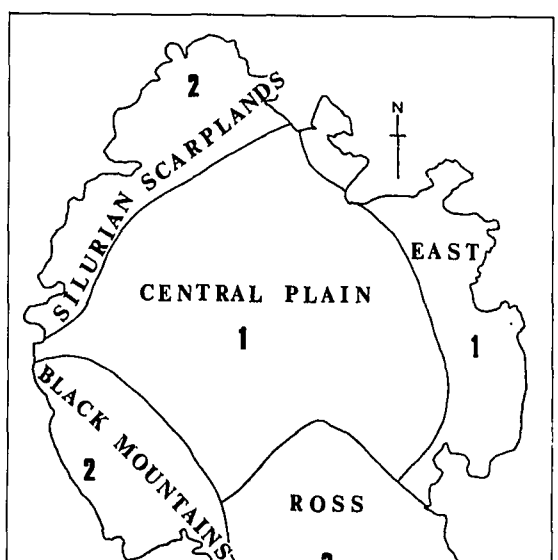


FIGURE 6
Agricultural regions in Herefordshire in 1850

Regions 1850
1 = virtual monoculture of wheat in 1801
2 = wheat and oats with barley a poor third
3 = wheat and barley more or less equal

[26] R Holliday and W Townsend, *York, a Survey*, British Association for Advancement of Science, 1959, Leeds, p 84.

[27] Michael Turner, 'Arable in England and Wales; estimates from the 1801 Crop Returns', *Journal of Historical Geography*, 73, 1981, pp 291–302.

[28] W E Minchinton, 'Agricultural Returns and the Government during the Napoleonic Wars', *Ag Hist Rev*, 1, 1953, pp 29–43. H C K Henderson, 'Agriculture in England and Wales in 1801', *Geographical Journal*, 118, 1952, pp 338–45.

[29] J Phillip Dodd, 'Gloucestershire', *op cit*; Dodd, 'Agriculture and Politics in the East and North Ridings', *Yorks Arch Jnl*, forthcoming, 1988.

In 1844–45 agricultural statistics were requested from the Poor Law Unions of Hartley Wintney and Basingstoke, and from Midlothian in Scotland, also Bailieborough Union in Ireland.[30] For Hampshire, only Hartley Wintney made a return, which, compared with the later return of 1853, was markedly deficient (Table 5).

TABLE 5
Agricultural statistics for Hartley Wintney, Hampshire in 1844–45 and 1853

Hartley Wintney	*Wheat*	*Barley*	*Oats*	*Turnips*	*Fallow*	*Leys*	
1844–45	3230	1840	1215	1664	1007	1626	acres
1853	4550	2887	2120	2830	1396	3212	acres

A further attempt was made to collect statistics in 1853 from Hampshire and Norfolk and in Scotland from Sutherland, Haddington and Roxburgh. For the latter Haddington and Roxburgh on the whole were satisfactory but this could not be said of Sutherland. In England opposition was encountered both in Norfolk where three unions refused to make returns while some parishes in Downham and Thetford Unions were deficient; there was a similar story in Hampshire but in both counties the efforts of the enumerators were successful in overcoming most of the difficulties. This was just as well because for Hampshire the 1853 statistics were useful in supplying deficiencies in those unions which opposed collection in 1854. However, for Hampshire the collections for both 1853 and 1854 were deficient for the Isle of Wight which obviously restricted the degree of comment possible.[31]

For informed appreciation of the changes taking place in the cultivated area of England one really needs to start with the data from the Tithe Surveys for those counties available for study. As an indication of what these may show, the following sample, meagre though it undoubtedly is, may be instructive (Table 6).

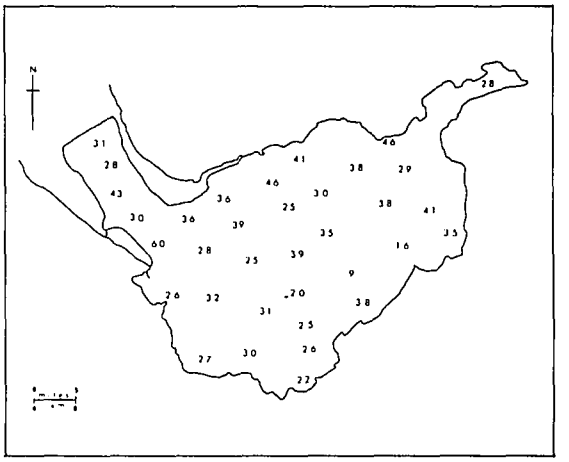


FIGURE 7
Percentage distribution of non-viable (20–49 acre) farms in Cheshire, 1840, extracted from the Tithe Survey

TABLE 6
Comparison of Tithe arable for selected counties with 1854 statistics and the 1875 June Returns

County	*Tithe per 1000 acres*	*1854*	*1875*
Herefordshire	420 arable	—	379
Cheshire	245 arable	—	249
Wiltshire	462 arable	499	501
Shropshire	494 arable	424	374

[30] BPP, House of Commons Sessional Papers, 1847, LIX, 468, 1–9. [31] Dodd, 'Hampshire', *op cit*, p 251.

It can be seen that without more data it is extremely unwise to make inferences as to long-term change.

The only firm basis on which to rest assumptions as to what was taking place in respect of land use in England and Wales from 1850 onwards is the body of solid fact contained in the agricultural statistics for 1854. The statistics for 1854 represent one-third of the acreage of England and Wales covering all types of land and a great diversity of physical conditions.

If one analyses the changes in land use taking place between 1854 and 1875, the following picture emerges (Table 7).

It will be observed that although total arable proportions hardly varied over the two periods, the wheat acreage did show a decline. Although data have not been extracted for all the counties for 1875, the difference for wheat was taken up by an increase in the ley proportion accompanied by a virtual phasing out of land in bare fallow.

In conclusion one can but reiterate that the 1854 Crop Returns make an important contribution to the study of agricultural history inasmuch as they represent a statistically viable source relating to one-third of the acreage of England and Wales and that 1854 must be regarded as the base-line for evaluation of later national statistics, particularly from 1875.

TABLE 7

Comparison of agricultural statistics for counties contained in the 1854 collection with those for the Board of Trade 1875 statistics

	Arable		*Wheat*		*Cattle*		*Sheep*	
County	*1854*	*1875*	*1854*	*1875*	*1854*	*1875*	*1854*	*1875*
Shropshire	424	374	110	96	136	166	492	576
Worcestershire	458	430	150	137	92	127	490	485
Leicestershire	361	344	94	87	223	267	760	886
Yorkshire, WR	296	263	74	56	130	144	518	426
Norfolk	620	617	158	146	75	80	650	537
Suffolk	676	653	174	155	58	69	510	501
Hampshire	509	516	119	105	46	60	585	578
Wiltshire	499	501	119	112	79	103	942	872
Denbigh	308	313	57	41	124	150	355	664
Brecon	161	150	28	20	76	79	580	1013
Berkshire		570		132		78		669
Per 1000 acres	431	430	108	99	104	120	535	721

Berkshire data for 1854 is not adequate for inclusion in this table.

The Breton Breed of Cattle in Britain: Extinction versus Fitness*

By C M A BAKER and C MANWELL

ANIMAL breeding in the third quarter of the twentieth century has been characterized by the trade in so-called 'exotic' breeds between countries. In the enthusiasm for this process, many aspects of a previous migration of breeds in the nineteenth century have been ignored. It is usual to discuss the nineteenth-century situation in terms of exports of well-known breeds, especially the Shorthorn and the English Leicester. However, there were many migrations of less well-known breeds. One of these was the Breton (also called the Brittany).

Today the Breton is little known outside its centre of origin and has low numbers.[1] But, earlier, the breed was sufficiently plentiful and well-regarded to be exported. Breton cattle are said to have been taken to Quebec soon after its founding in 1541 and again in 1608; it is generally accepted that, with Normandy cattle, the Breton gave rise to the breed known variously as the Quebec Jersey, French-Canadian or Canadian.[2]

Breton cattle also went to the USA. One writer suggested that the Guinea cattle of Florida were derived from the Breton,[3] but others have suggested that the Guinea cattle owe their origin to the Dexter.[4] Breton cattle may have been among cattle imported via the Channel Islands to New South Wales under the collective name of 'the St Helier breed' in the nineteenth century.[5]

In Great Britain, Breton cattle enjoyed several decades of popularity in the third quarter of the nineteenth century. The case history of this migration has important lessons for the present, especially in the context of the growing concern for conservation of rare and minority breeds.

I

Breton cattle are a French landrace, generally considered to be related closely to Channel Island cattle. The traditional criteria for this grouping are: proximity, conformation, high butterfat, yellow milk and butterfat and a yellow tinge to the skin. There are few data which allow any comparison of the frequency of protein polymorphisms, but two 'Brittany Shorthorns' screened by Bangham and Blumberg were both heterozygous for haemoglobins A and B, a polymorphism common in Channel Island cattle.[6]

* The authors' research was supported by a University of Adelaide Adelaide Research Grant 'Molecular Variation and Evolution of Domesticated Animals'.

[1] J J Lauvergne, 'The current status of cattle breeds in Europe', *World Animal Review*, 21, 1977, pp 42–47.

[2] L F Allen, *American Cattle: Their History, Breeding and Management*, New York, 1868; H E Alvord, 'The American cattle trade', *JRASE*, 2nd series, 13, 1877, p 356; J E Rouse, *World Cattle, III: Cattle of North America*, Norman, Oklahoma, 1973; M H French, I Johansson, N R Joshi and E A McLaughlin, *European Breeds of Cattle*, FAO Agricultural Studies No 67, Rome, 1966.

[3] R C Auld, 'The segregations of polled races in America', *American Naturalist*, 23, 1889, pp 683.

[4] J C Dollahon and M Koger, 'Inheritance of the Guinea trait in descendants of Florida Native cattle', *Journal of Heredity*, 51, 1960, pp 32–34. These authors suggested the relationship because Guinea cattle resembled the Dexter in the occurrence of a semi-lethal gene, which when heterozygous produced a viable dwarf calf, but when homozygous resulted in an inviable deformed 'bulldog' calf. The same gene has been said to occur in Breton cattle: see F A E Crew, 'The significance of an achondroplasia-like condition met with in cattle', *Proceedings of the Royal Society, London*, B95, 1923, p 246. This raises the possibility of relationship between the Breton and the Dexter.

[5] F McCaffrey, *First Century of Dairying in New South Wales*, Sydney, 1909.

[6] A D Bangham and D S Blumberg, 'Distribution of electrophoretically different haemoglobins among some cattle breeds of Europe and Africa', *Nature*, 181, 1958, pp 1551–1552.

At various times attempts were made to improve Breton cattle by crossing. Of the French breeds, only the 1760 importation of forty-five Bocage bulls (said to be at the suggestion of the then Bishop of St Pol de Leon) was thought to have left any mark. Its influence was said to be visible in the form of a grey tinge around the eyes and the muzzle in some individuals.[7] Further crosses in the nineteenth century were controversial. Frere considered that crosses with the Ayrshire or the Jersey did not improve conformation and that the former reduced butterfat. He liked crosses with the Durham, and claimed that these were heavier and had better conformation, matured earlier, and yielded more milk, at least as high in butterfat as the Breton. As for the pure Bretonne cow, Frere remarked '. . . a leading farmer has been known to be unwilling to be *seen* buying one'.[8]

Coleman quoted correspondents who condemned such crosses.[9]

'Marchadour Zaout' (a *nom de plume*) informed Coleman that :

> As a few instances among many, I may cite the monstrous puerility displayed, but esteemed as a *chef d'oeuvre* by its perpetrators (divers learned *agronomes*), in a cross between the Shorthorn bull and a Brittany cow; that with the Swiss bull — an equally wretched one; and . . . the most rational attempt by far . . . the Ayrshire . . . My own opinion . . . is that this animal, defective only (as a general rule) in size, is susceptible of all the amelioration needful by a judicious selection of parents from its own pure blood . . .'[10]

J C W Douglas, Manoir du Plessis, Chateauneuf du Fau, Finisterre, wrote to Coleman in similar terms:

> . . . time and money has been spent by theoretical men in experimenting with different crosses, and thus West Highlanders, Devons, Swiss, Ayrshires, and now latterly Durhams, have been tried. These gentlemen-fancy farmers, and now and again an ambitious peasant proprietor — with more coin and less brains than others of his fraternity, achieved great 'Kudos' and cause for speechifying and self-congratulation. While the rank and file of the *petits cultivateurs* . . . are left utterly aside . . . if indeed, the poor little starveling cow, the hardy and shapely milk-giver of the Breton cottar . . . is . . . to escape being swamped by a system of universal mongreling, it is not due to the agricultural intelligence of the period, but to the stolid rough common sense of the native . . . who has to live by his trade.'[11]

'Marchadour Zaout' pointed out that in the Bretonne cow, '. . . smallness of size is a desideratum to many people — for from what other source can the owner of a mere plot of ground obtain a fair supply of home-produced milk and butter?'.[12]

The Bretonne cow could be as small as thirty-two inches at the withers. Thirty-six inches was considered average. Under improved conditions, forty inches might be attained.[13] Writers mentioned the charming head and fine bone.[14] The horns were described as fine '. . . like that of an Alderney, but thinner and tapering away from the head . . .'[15] The colour was typically black-and-white in the Morbihan race, and red-and-white in Cornouaille.[16] The type is illustrated in Figs 1 and 2.

Frere criticized Breton cattle for the narrow chest, light hindquarters and 'enormous belly'. It was generally accepted that these characteristics were at least in part the result of harsh conditions. Breton cattle were found on 'sandy wastes' and 'poor granitic soil'. The cows might be tethered, or have to graze the roadsides; and the only supplementary feed was 'A scanty dole of bog hay, and haply a ration of pounded gorse or furze . . .'[17]

Breton cattle had the reputation of being healthy. They were also said to be hardy, although many were kept in at night or in stormy weather. They were often housed in the owner's cottage. This close association with people probably contributed to the

[7] P H Frere, 'Some account of Brittany cows. Taken from some notices by M Jamet, of Rennes', *JRASE*, 24, 1863, pp 213–216.
[8] *Ibid*, p 215.
[9] J Coleman, *The Cattle of Britain*, 1875, pp 146–151.
[10] *Ibid*, p 148.
[11] *Ibid*, p 151.
[12] *Ibid*, p 148.
[13] Anon, 'Report of the Stewards of Stock at the Battersea Show', *JRASE*, 23, 1862, p 372; Coleman, *op cit*, p 148.
[14] Frere, *loc cit*, p 215.
[15] Anon, *loc cit*, p 372.
[16] Frere, *loc cit*, p 213.
[17] Frere, *loc cit*, p 215; Coleman, *op cit*, pp 147, 149.

characteristics of docility and being easily managed.[18]

Milk yield was steady and could continue as long as eighteen months after calving.[19] The daily average ranged from one to three gallons.[20] Two and a half gallons were said to yield one pound of butter.[21] This compares well with the more usual yield of one pound of butter from three gallons of 'average' milk with 3.5 per cent butterfat. The butter was prized for its '. . .quality, colour and especially the *flavour*. . .';[22] and, with the exception of Jersey butter, was '. . . said to be not only more solid and waxy in texture, but to have a finer aroma than that produced from other breeds . . .'[23]

II

It is not clear when Breton cattle were first imported to Great Britain. Early records often lump together cattle of the Channel Island group and, even for a breed as well known as the Jersey, early importations have not been easy to trace.[24] Some Breton cattle may have been included under general terms such as 'French cattle' in the late eighteenth and early nineteenth century.

At the 1856 Chelmsford Royal Show, M Ris Allier, Directeur-Fondateur de la Colonie de Petit-Bourg, France, was awarded prizes in the classes for Foreign Cattle for his home-bred Breton bull (Tom Puce) and cow (Rosa Bonheur). Both animals were black-and-white.[25]

At the Canterbury Royal Show in 1860, Samuel Camfield Baker, The Pheasantry, Beaufort St Chelsea, Middlesex, received a prize in the Other Established Breeds classes for an 'In-calf Bretonne Cow, breeder unknown'.[26] The following year, at Leeds, Mr Baker was successful with a bull bred by himself and with three heifers.[27] Hobbs reported that the black-and-white Bretons were '. . . good of their order. Indeed, the bull was very beautiful; his head and eye were a complete study.'[28]

The 1862 Royal Show at Battersea had separate classes for Breton cattle. Mr Baker won a gold medal for his four-year-old bull, Prince, beating the French exhibits. All the animals were black-and-white except the gold medal cow, who was white and roan.[29] A reporter wrote, '. . . an excellent class of Bretons to which England contributed largely'.[30] However, apart from Prince, the prizewinners were all from France.

According to Coleman, Mr Baker was largely responsible for the introduction of Breton cattle as house cows. His selling points were docility and that the Bretons were more economical than Alderneys. This claim was upheld, one enthusiast going so far as to say that four Bretonne cows could be kept for one Alderney.[31] Messrs Baker informed Coleman: 'They are universally admired for their diminutive size . . . and for all small farms from two acres (now so much in fashion amongst ladies) they are specially adapted.'

Another writer noted: 'They are so docile, and bear tying up so well, besides living on 10 lbs of fodder a day, that the Bretonne cow is not infrequently reckoned as part of the luggage of families coming up to town for the season.'[32] For those who did not include a Bretonne in the baggage, '. . . not only have specimens been purchased by wealthy proprietors as a matter of curiosity, but also dairies set up by those who live by the sale of milk in the environs of London . . .'[33] Breton cattle also spread to Scotland. They were kept by the Comte de Flahault (in Clackmannanshire), the Duke of Montrose,

[18] Coleman, *op cit*, p 149.
[19] Anon, *loc cit*, p 372.
[20] Coleman, *op cit*, p 146.
[21] Frere, *loc cit*, p 214.
[22] Frere, *loc cit*, p 213.
[23] X A Willard, 'The American butter factories and butter manufacture', *JRASE*, 2nd series, 7, 1871, p 4.
[24] See for example papers in J Boston (ed), *Jersey Cattle*, 1954.
[25] *JRASE*, 17, 1856, p xxvi.
[26] *JRASE*, 21, 1860, p ix.
[27] *JRASE*, 22, 1861, pp xvii–xviii.
[28] W F Hobbs, 'Report on the Exhibition of Live Stock at Leeds', *JRASE*, 22, 1861, p 223.
[29] *JRASE*, 23, 1862, pp xlvi–xlvii.
[30] Anon, *loc cit*, p 372.
[31] Coleman, *op cit*, p 147.
[32] Anon, *loc cit*, p 372.
[33] Frere, *loc cit*, p 213.

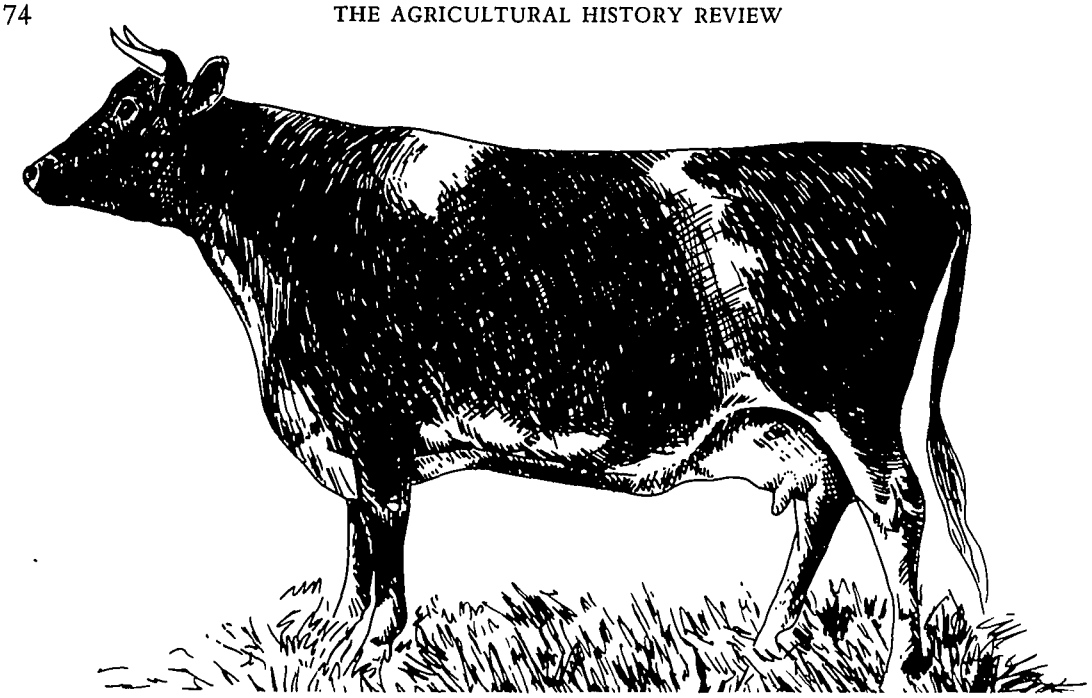


FIGURE 1 Bretonne cow, drawn after Harrison Weir's picture in J Coleman, *The Cattle of Britain*, 1875.

and a Mr Fleming kept 'a group' with his Ayrshires.[34]

The above information indicates that the main niche occupied by the Bretonne in Great Britain was that of the house cow, kept largely by the middle and upper classes who did not have a home farm to supply dairy products, and sometimes by wealthy farmers and landowners who were attracted by the novelty and by the high butterfat. High yields in a house cow can create an embarrassing surplus; and a cow with a moderate but consistent yield over a lengthy period (such as was attributed to the Bretonne) is preferred. High butterfat is also appreciated, as a moderate milk production then results in ample cream, fresh butter and cream cheese with relatively small amounts of skim milk and buttermilk. In addition, the Bretonne had intangible assets such as placidity, pleasing appearance and novelty.

Breton cattle continued to be exhibited at the Royal Show. Their success was variable, because most of the time they had to compete in classes for Other Established Breeds. At Newcastle upon Tyne in 1864, all the prizes went to Suffolks, and a critic complained that these deserved '. . . a better place than a class . . . of themselves and the nondescript Breton race'.[35] At Leicester in 1868, Breton cattle did not appear in the prize list, but the judges were kinder, and wrote, 'We cannot close this brief Report without a word in commendation of two exquisite Brittany cows shown in class LI, one of which especially appeared to be perfect of her kind.'[36] However, in 1869, at Manchester, Thomas Statter, Stand Hall, Whitefield, Manchester, came second in the class for Other Established Breeds, Cow over three years old, with his home-bred blue-and-white cow, Rose.[37]

The Breton had special classes in the section for Foreign Cattle at the 1879 Kilburn Royal Show. Bowstead reported: 'Of Bretons, a diminutive but symmetrically-made breed, closely resembling

[34] H H Dixon, *Field and Fern*, 1865, vol 1, pp 329 and 352; vol. 2, p 307.

[35] J D Dent, 'Report to the Council on the cattle exhibited at Newcastle', *JRASE*, 25, 1864, p 431.

[36] E Bowly, 'Report on the Exhibition of Live Stock at Leicester', *JRASE*, 2nd series, 4, 1868, p 443.

[37] *JRASE*, 2nd series, 5, 1869, p lxi.

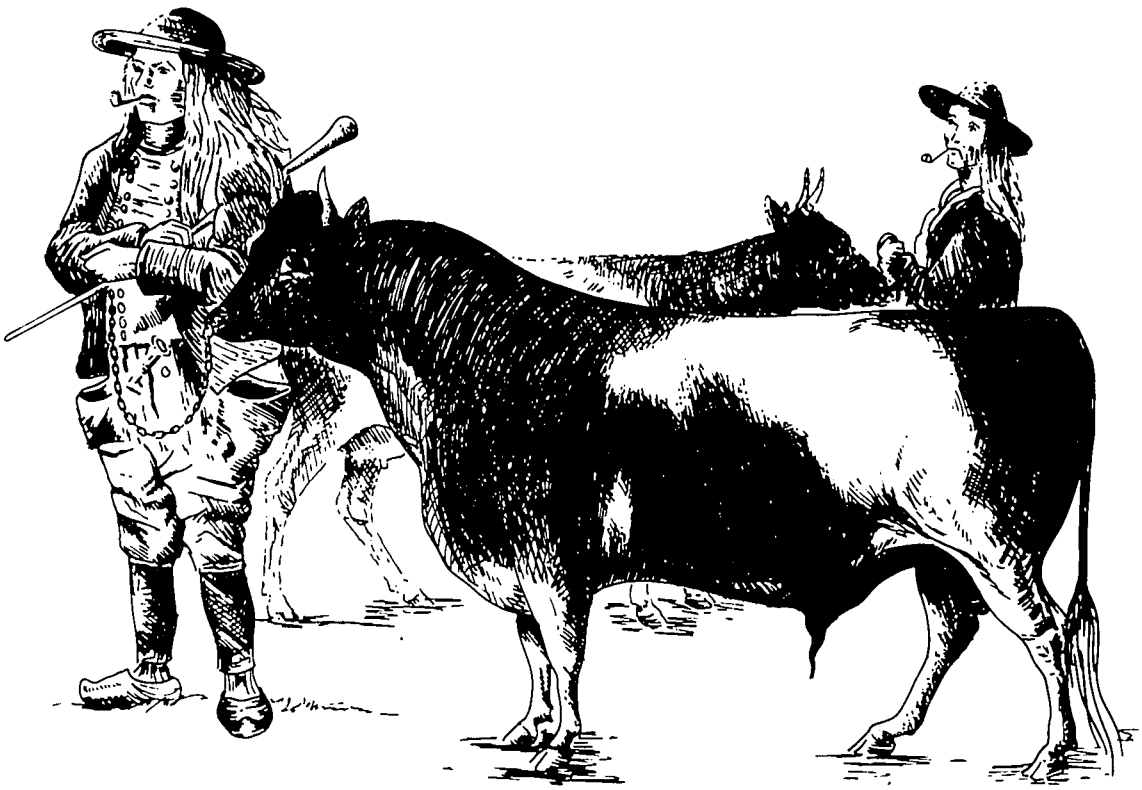


FIGURE 2 Breton bull, drawn after the picture by J C W Douglas in J Coleman, *The Cattle of Britain*, 1875.

the Kerries, there were only eight entries . . . The sole representative in Bulls over Two-years-old was "Jobie", bred in France, but exhibited by Mr Albert Dixon, of Windsor. This was a thickly made compact little fellow, with famous crops and loins, deep ribs, prominent rounds, broad chine and small bone, his great fault being the too high setting-on of the tail, characteristic of the breed. "Little John", the only Yearling Bull sent, had wonderfully big forequarters . . . Mr Albert Dixon . . . swept off all the prizes for Breton cows with three pretty little well proportioned creatures, the *premier* one having the reputation of yielding 10 quarts per day of rich milk. Her bag, which was well-formed, looked equal to the quantity and more. Mr Ladwick's "Polly", though not allowed a prize, was a true specimen of the Breton. In the Heifer Class there were only two entries, both belonging to Mr H B Spurgin of Northampton; "Lady Jane", the winner, though only two years and six months old, being in full milk and displaying a right good bag.'[38]

Despite this encouraging report, there do not seem to have been any more Breton cattle exhibited at the Royal Show. The breed did not appear in later accounts of livestock kept in the British Isles. For example, it was omitted from the later edition of Coleman, published in 1887.[39]

Coleman had noted a decline in the number of Breton cattle a few years earlier. He wrote, '. . . at first sight their almost total neglect in the present day would lead to the impression that their asserted superiority for the purpose of the small dairy was not founded on fact. We believe, however that these two contradictory positions are reconcilable, and that the good

[38] T Bowstead, 'Report on the British and Foreign cattle exhibited at Kilburn', *JRASE*, 2nd series, 15, 1879, p 637.
[39] J Coleman, *The Cattle, Sheep and Pigs of Great Britain*, 1887.

qualities of the Breton cow have been little, if at all, overrated.'[40]

Coleman explained the decline in two ways. The first was the reduced number imported, because '. . . the cattle disease regulations have to some extent interfered . . .' He noted that 'Messrs Robertson & Co, Eaton Farm, Cobham, Surrey, are now the only importers of cattle from Brittany.' Secondly, the shortage of Breton bulls raised difficulties for a breed in which most animals were kept as house cows. Coleman's supposition that Bretonne cows were '. . . too small to be safely crossed with any English bull . . .' was incorrect. A yearling bull of most breeds should not have been too heavy. Pregnancy and parturition with a calf sired by a larger breed should not have been a problem, as was demonstrated by Joubert and Hammond in crosses between South Devon bulls averaging 2464 lb and Dexter cows of 535 lb.[41] However, the use of bulls from other breeds would reduce the number of Breton cattle available, especially when imports from France became difficult.

A third reason is suggested by a comment reported by Frere: 'Remove her to rich land and she will take in much food, but the yield of milk never increases, and as she fattens her milk will dry up.'[42] There is evidence that an increase in size was encouraged by some breeders — and by judges. At Battersea Show in 1862, 'The prizes were generally awarded to the larger specimens, which were not so much fancied for their milk in toy dairies as the smaller ones from the more mountainous parts of Brittany, where the pasture is scanty.'[43] The descriptions of 'Jobie' and of 'Little John' at Kilburn in 1879 emphasize their beef characteristics. The white-and-roan cow at Battersea, and the blue-and-white cow at Manchester, hint at a Shorthorn cross. Macdonald and Macdonald who described the Breton as '. . . one of the most valuable . . .' of French breeds, ascribed some of the value to crossing with the Shorthorn.[44] It is possible that 'improvements' in conformation were at the expense of characteristics which made the Bretonne a desirable house cow.

A further possible reason is that the quarantine difficulties involved in bringing cattle from France favoured the spread of two Irish breeds in Britain. The Kerry (to which Bowstead likened the Breton) was already known, and the Dexter was beginning to be recognized to be useful for smallholdings and for households.[45] Finally it is said that the gene which when homozygous causes 'bulldog' calves, a syndrome usually associated with the Dexter, also occurs in the Breton.[46]

III

Although the Breton only occupied a small ecological niche in Great Britain, this does not mean that the historical and biological importance of the breed is small. It provides a case history which contradicts the commonly held belief that the decline and extinction of breeds of livestock is simply the consequence of the Darwinian evolutionary paradigm, epitomized by Herbert Spencer and Thomas Huxley's phrase 'survival of the fittest'.[47] This simplistic approach fails to recognize the role of both random factors and social systems.

Random factors have only recently been accorded full recognition as a major force in evolution, eg, non-Darwinian evolution

[40] Coleman, *op cit*, 1875, pp 146–7.
[41] D M Joubert and J Hammond, 'A crossbreeding experiment with cattle, with special reference to the maternal effect in South Devon–Dexter crosses', *Journal of Agricultural Science*, 51, 1958, pp 325–341.
[42] Frere, *loc cit*, p 215.
[43] Anon, *loc cit*, p 372.
[44] W Macdonald and J Macdonald, 'The agricultural features of the Paris Exhibition', *JRASE*, 2nd series, 15, 1879, pp 223–224.
[45] W Hooper, 'Kerry and Dexter cattle', *JRASE*, 3rd series, 9, 1898, pp 667–677.
[46] Crew, *loc cit*, p 246.
[47] For example I M Lerner and H P Donald, *Modern Developments in Animal Breeding*, 1966; P A Jewell and G L H Alderson, 'Genetic conservation in domestic animals: purposes and actions to preserve rare breeds', *Journal of the Royal Society of Arts*, 125, 1977, pp 693–710.

or neutral allele theory.[48] The very success of the Darwinian evolutionary paradigm prevented a recognition of Sewall Wright's emphasis on genetic drift in his controversy with the proponent of 'fitness', R A Fisher, a controversy which involved not only evolutionary theory but also livestock breeding.[49]

Social factors are often superimposed upon random ones to further complicate attempts to understand the decline and extinction of breeds. Whereas in the theory of evolution by natural selection 'fitness' is defined in terms of leaving the most genes in the next generation, R A Fisher's very choice of the word 'fitness' inevitably created a problem of value judgement. 'Fitness' in the show ring, or 'fitness' in different traits of agricultural production, differ from each other, and sometimes also from 'fitness' in the evolutionary sense.

Thus, in more recent years a few researchers have attempted to integrate 'fitness' with due allowance for the complexities of the real animal-breeding world, recognizing the important roles played by fads, fashion, agribusiness pressures and breed society interests, all superimposed upon changing economic and social patterns. For example, Hickman points out: 'Academic and bureaucratic influences on funding detract from effective genetic resource management and divert attention from the real problems to rare and endangered breeds in the industrialized areas of the northern Mediterranean region.'[50] In discussing the vacant niches left by agribusiness pressures in the USA, Hickman comments: 'It is difficult to believe that in all of North America there is no breed of medium size and production for use on small farms, bred pure and maintained on marginal land areas to supplement family income.'[51]

Allowing for the much larger size of even 'small' farms in the USA when compared with Europe, that sentence of Hickman's could summarize the situation for the Breton in Brittany and in Britain. Here was a very small breed of cattle, ideal for small farmers, able to thrive on marginal conditions where larger breeds would fail to yield their full productive potential, or in some cases simply fail to survive. Furthermore, as has been shown by the first-hand reports of British and American writers of the nineteenth century, the unique qualities of the Breton were appreciated, not only by Breton small-holders and by pioneers in the New World but by some of the British landed gentry and show-ring exhibitors. However, the élite, less dependent on the qualities of this special breed, could afford to be fickle. We note that, despite the complimentary comments on the Breton at the Royal Show, the representation of the breed quickly declined. But the evidence of contemporary writers makes it clear that the decline was not due to any lack of biological or economic fitness. The main reasons were the difficulty of importation because of new quarantine regulations and the availability of the similar Dexter and Kerry which, coming from Ireland, were not subject to the same quarantine requirements. Other factors, such as the decline in milk yield with over-generous feeding or in crossbreds, were largely due to mismanagement. The main potentially disadvantageous biological factor was the occurrence of the dwarfing gene.[52] But the same gene did not displace the Dexter from its niche in England[53] and, in heterozygotyes, was regarded as an advantage in the Guinea cattle of Florida.[54]

[48] M Kimura, *The Neutral Theory of Molecular Evolution*, Cambridge, 1983.

[49] C M A Baker and C Manwell, 'Population genetics, molecular markers, and gene conservation in bovine breeds', in C G Hickman (ed), *World Animal Science*, vol 11, *Cattle and Buffalo Resources*, Amsterdam, in press.

[50] C G Hickman, 'Management of animal genetic resources', *Proc 2nd World Congress on Sheep and Beef Cattle Breeding*, vol 1, Pretoria, 1984, paper no 10, p 1.

[51] *Ibid*, p 5.

[52] Crew, *loc cit*, p 246.

[53] G B Young, 'Population dynamics of the Dexter breed of cattle', *Journal of Agricultural Science*, 43, 1953, pp 373–374.

[54] Dollahon and Koger, *loc cit*, pp 32–33.

In the last thirty years the import of exotic breeds throughout the world has focused on the fast growth rate, for obvious economic reasons in beef production. However, more recently this enthusiasm has been tempered by a recognition that in many countries any additional agricultural expansion will have to involve lands which are often markedly suboptimal for high-production-rate breeds.[55] It has been found that, when all factors are considered, the less popular indigenous breeds often perform better economically in the long term.

Besides such environmental factors there are also important social factors which have been neglected. The last forty years have witnessed a resurgence of interest in rare and unusual breeds of livestock, and concern over extinction.[56] The last twenty years have also witnessed a growing realization of the problems which have arisen in the continual 'drift from the land' which has occurred over the last century. Some governments have tried to slow down that drift from the land in a belated recognition of the role of the small farmer, both in efficient agricultural production and in social stability. In addition, as part of the environmental movement in industrialized societies, there has also been a small counter-migration, from the city or suburb to the land with emphasis on self-sufficiency. Thus, there is likely to be in the future a greater need for breed diversity, as well as a greater recognition of the cultural and social justifications for keeping minority breeds.[57] In that perspective the Breton might well serve a special need and return to its original high esteem. Fortunately there are still some pure Breton cattle in Brittany, distinct from the descendants of the Shorthorn crosses which evolved into a separate breed, the Armorican.[58]

IV

Breton cattle are an ancient landrace which evolved in a milieu of harsh conditions and small farms. In the nineteenth century, a dichotomy of attitude to the breed developed. 'Progressive' agriculturalists sought to change it by crossing, while traditional farmers with small holdings resisted change. In Great Britain, imported Breton cattle were valued by the upper classes, because the traits which made the Bretonne economic to the small farmer also made her a good house cow. The subsequent exclusion of Breton cattle from the latter niche in Great Britain was not due to the intrinsic properties of the breed. Possible causes were the reduction of imports from France because of quarantine regulations; the inaccessibility to pure Breton bulls by many owners of Bretonne house cows; emphasis by British breeders and judges on beef conformation; and the availability of Kerry and Dexter cattle from Ireland. It is concluded from this case history that the popularity of a breed is not, as suggested by some writers, solely or mainly a function of fitness for a particular niche.

[55] For example H Hamburger and K A Ramsay, 'The current status and future of animal production and breeding in developing countries: the Southern African region, *Proc 2nd World Congress of Sheep and Beef Cattle Breeding*, vol 1, Pretoria, 1984, paper no 3, pp 1–31.

[56] W Landauer 'Shall we lose or keep our plant and animal stocks?', *Science*, 101, 1945, pp 497–499; M L Ryder, 'Why should rare breeds of livestock be saved?', *International Zoo Yearbook*, 16, 1976, pp 244–49; J J Lauvergne, 'Organisation of the conservation and management of genetic stocks of large farm animals', *Animal Genetic Resources Conservation Management*, FAO Animal Production and Health Paper No 24, Rome, 1981. pp 318–331; K Maijala, A V Cherekaev, J M Devillard, Z Reklewski, G Rognoni, D L Simon, and D Steane, 'Conservation of animal genetic resources in Europe, Final Report of an EEAP Working Party', *Livestock Production Science*, 11, 1984, pp 3–22.

[57] Baker and Manwell, *loc cit.*

[58] French *et al*, *loc cit*; Rouse, *op cit*, 1, *Cattle of Europe, South America, Australia and New Zealand*, 1970. In 1962 the Armorican amalgamated with the Main Anjou to form the Rouge de l'Ouest.

Farm Size in England and Wales, from Early Victorian Times to the Present

By DAVID GRIGG

THE SIZE of farms cannot be said to be a dominant theme in the agricultural history of modern England and Wales; the three essays on agriculture in a recent economic history of modern Britain contain no more than one passing mention of changes in farm size,[1] whilst the topic does not receive much more notice in agricultural histories of modern England.[2] Further, most of the work on farm size in the last half century has been done by agricultural economists rather than agricultural historians. There was a time, however, when historians were more concerned with farm size, and much of their interest was aroused by two books published at the beginning of this century. Herman Levy argued that between 1750 and 1850 the small farm was largely extinguished by two forces, Parliamentary enclosure and the favourable movement of grain prices relative to livestock prices. J L and Barbara Hammond's book *The Village Labourer* reinforced the view that enclosure was fatal to the small farmer.[3]

No one now believes that the small farmer was totally eliminated between 1700 and 1851. Sir John Clapham, using the Census returns, was able to show that small farms, of over 5 acres and less than 100 acres, were 62.5 per cent of all farms in England and Wales in 1851.[4] Since he wrote there has been comparatively little research on farm size in the eighteenth and early nineteenth centuries, but it seems agreed that there was a decline in the number of small farms and a growth of larger farms; however whilst Parliamentary enclosure may have often caused the demise of small farms, amalgamation also went on in areas which had long been enclosed.[5]

Prior to the 1851 Census and the commencement of the agricultural census in 1866 there were no national statistics on the size of farms in England and Wales. On the period since statistics are available — adequate statistics on farm size were first collected by the Board of Agriculture in 1885 — there have been two divergent views. Levy, writing in 1911, argued that the agricultural depression of the 1880s and 1890s, with its falling cereal prices and relatively favourable prices for livestock products and vegetables, led to the reversal of the long-term trend towards large farms.[6] Some forty years later a number of writers argued that from the 1880s to the 1930s there had been a slow increase in the number of small farms, and a decline in the larger farms; this trend was then reversed, with the large farm increasing and the small farm

[1] E L Jones, 'Agriculture 1700–1800', in R Floud and D McCloskey (eds), *The Economic History of Britain since 1700*, vol 1, *1700–1860*, Cambridge, 1981, pp 66–86; G Hueckel, 'Agriculture during industrialisation', *op cit*, pp 182–203; C Ó Gráda, 'Agricultural decline 1860–1914', *op cit*, vol 2, *1860 to the 1970s*, Cambridge, 1981, pp 175–97.

[2] C S Orwin and E H Whetham, *History of British Agriculture 1845–1914*, London, 1964, pp 284–5; P J Perry, *British Farming in the Great Depression 1870–1914: an historical geography*, Newton Abbot, 1974, pp 101–04; Edith H Whetham, *The agrarian history of England and Wales, vol VIII, 1914–39*, Cambridge, 1978, pp 44–5; B A Holderness, *British agriculture since 1945*, Manchester, 1985, pp 127–8.

[3] H Levy, *Large and Small Holdings: a study of English agricultural economics*, Cambridge, 1911; J L and Barbara Hammond, *The Village Labourer*, London, 1911.

[4] Sir John Clapham, *An economic history of modern Britain: free trade and steel 1850–1886*, Cambridge, 1932, p 264.

[5] G E Mingay, 'The size of farms in the eighteenth century', *Econ Hist Rev*, 14, 1961–2, pp 469–88; J R Wordie, 'Social change on the Levenson-Gower estates, 1714–1832', *Econ Hist Rev*, 27, 1974, pp 569–98; J V Beckett, 'The debate over farm sizes in eighteenth- and nineteenth-century England', *Agricultural History*, 68, 1983, pp 308–25.

[6] Levy, *op cit*, 1911.

declining.[7] Others, possibly a majority, emphasized the stability of farm size structure from the 1880s to the 1950s.[8] However since 1945 there has been universal agreement that the large farm has increased at the expense of the small farm, although because of changes in the definition of a farm in the agricultural census since the 1960s, it has been difficult to trace the more recent trends.[9]

It seems worth reviewing the trends in farm size since 1851 on a number of counts. First, there are several ways of measuring trends in farm size, and these can give apparently contradictory results. Thus it will be shown that although the large farm now occupies more of the agricultural area of England and Wales than it did in 1851, the structure of farm size is very little changed. Second, there have been important changes in the way statistics of farm size are collected, and failure to note this may lead to errors of interpretation. Thus some writers have commented on the dramatic decline in the number of small farms in the 1960s and 1970s without also noting that the Ministry of Agriculture removed more than 50,000 holdings from the census after 1967.[10] Third, it should be recalled that between 1885 and 1975 there has been a substantial reduction in the area of crops and grass in England and Wales due mainly to urban expansion, and that this in itself would cause a considerable fall in the number of farms even in the absence of amalgamation.[11]

I

There are various ways of measuring trends in the size of farms or agricultural holdings. One is to trace the changes in the total number of *holdings* over time; unfortunately, for a number of reasons, this gives no necessary indication of changes in the total number of *farms*. Second, the average size of farms can be calculated by dividing the total area occupied by crops and grass on farms by the total number of farms. Again, this has defects: it conceals trends that there may be in different size classes, and exaggerates the importance of the smallest farms which make up a large proportion of all farms but account for a small proportion of the area occupied. A third method is to trace the absolute numbers in each of the size classes published by the Ministry of Agriculture, viz 5–50 acres, 50–100 acres, and so on; and a fourth way is to calculate the *area* occupied by each size class over time. But because there has been a considerable decline in the total area in crops and grass in England and Wales since the 1880s, due to the expansion of non-agricultural land uses, it is necessary to consider the *structure* of farm size; this can be done by calculating the percentage of the *number* of holdings in each size class or the percentage of the *area* occupied by each size class. This distinction is important, for the structure by *numbers* showed little change from Victorian to recent times. On the other hand, there have been major changes in the structure by *area*.

By whatever means farm size is measured, the results depend upon the accuracy and

[7] D K Britton, 'Are holdings becoming larger or smaller?', *Farm Economist*, 6, 1950, pp 188–97; F W Bateson, 'Farm sizes and layout', in F W Bateson (ed), *Towards a Socialist Agriculture*, London, 1946, pp 106–23.

[8] G P Hirsch, 'The size of farm holdings in England and Wales', *Farm Econ*, 9, 1958, pp 84–9; M E Rutherford and G P Hirsch, 'The size of farm holdings in England and Wales', *Farm Econ*, 8, 1955, pp 32–41; Sir E J Russell, *Agriculture: today and tomorrow*, 1945, p 6; E J Thomas, *Introduction to Agricultural Economics*, 1949; Viscount Astor and B Seebohm Rowntree, *British Agriculture; the principles of future policy*, Harmondsworth, 1939.

[9] D K Britton, 'Some explorations in the analysis of long term changes in the structure of agriculture', *Jnl Agric Econ*, 28, 1977, pp 197–209; D K Britton, *The changing structure of British agriculture*, Newton Abbot, 1968; D K Britton and K A Ingersent, 'Trends in concentration in British agriculture', *Jnl Agric Econ*, 16, 1964, pp 26–52; R C Hine, 'Structural policies and British agriculture', *Jnl Agric Econ*, 24, 1973, pp 321–9; S A Robson, 'Agriculture structure in England and Wales 1955–1966; a quantitative analysis', *Farm Econ*, 11, 1970, pp 460–81; F G Sturrock and H J Gunn, 'The development of large scale farming', *Westminster Bank Review*, February, 1968, pp 59–65.

[10] R Body, *Agriculture: the triumph and the shame*, 1982, p 13; D K Britton, 'Is there a case for farm income support?', in Centre for European Agricultural Studies, *Agriculture: the triumph and the shame: an independent assessment*, Centre for Agricultural Strategy, Reading, June, 1983.

[11] R H Best, *Land and living space*, 1981.

consistency of the statistical sources, which must now be considered.

II

The *only* comprehensive survey of the size of *farms* in England and Wales was taken at the population censuses of 1851, 1861 and 1871, when householders who returned their main occupation as farmer or grazier were asked to state the size of their farm. They were instructed to exclude upland hill pastures from the area and presumably it was the area in crops and grass only that was returned, although rough grazing in lowland areas may have been included. Some of the returns are those of retired farmers, thus inflating the numbers. J C Morton, however, believed that retired farmers were no more than 2 per cent of the total, although a later study of Huntingdonshire put the figure nearer 12 per cent.[12] More important, only those who regarded farming as their major source of livelihood returned themselves as farmers. Yet it is certain that many small farms whose occupiers had another and more important form of employment were not included, and thus the smaller farms were understated.[13] The farm sizes of those who regarded themselves as farmers are contained in the enumerators' schedules for 1851, 1861 and 1871. However, comprehensive results at the county and national level were only published for 1851. The General Report printed the number and area for twenty-one size classes in England and Wales as a whole, whilst the *number* but not the *area* of farms in these size classes was published for each registration county.[14] The data collected for the 1861 and 1871 censuses were not published for England and Wales, but in the 1871 census the numbers in each size class for seventeen counties, all in eastern and southern England, were printed.[15]

An *agricultural* census has been held in England and Wales every year since 1866. Among the many items farmers have been required to enter upon a printed census form has been the size of their farm, or more accurately the size of their *agricultural holding*. Forms have gone not to those on a list of farmers but, until 1892, to all *occupiers* of more than ¼ acre of agricultural land and afterwards to occupiers of more than 1 acre. Until the late 1970s occupiers were asked to return only the acreage in crops and grass on their holding; since then not only crops and grass, but the total area, including woodland, rough grazing and all other land. From 1912 to 1975 data on the *number* of holdings in the classes 1–5, 5–50, 50–100, 100–300 and 300 acres and over are available each year, and indeed for more classes in some years. But before 1912 data for these same classes are only available at irregular intervals; 1885 is the first year in which data for all these classes are available. Data on the *area* under crops and grass in each size class are available from the population census of 1851, and from the agricultural censuses of 1885, 1895, 1913, 1915, 1924, 1944 and more regularly since then. The boundaries of the class limits were changed in 1942; prior to 1942 the class limits were from '*over* 5 acres to and including 20 acres' etc; after 1942 they were defined as '5 acres and under 20 acres' etc. The classes are referred to here, for convenience, both before and after 1942, as 5–20 acres, 20–50 acres, and so on.[16] Since 1976 the number and area of holdings has been published in size classes measured in hectares, the class limits of which do not correspond — except for the small classes — to the earlier acreage limits, whilst since 1979 data have been published only for total area, not for crops

[12] J C Morton, *Labour*, 1887, p 12; W Ogle, 'The alleged depopulation of the rural districts of England', *JRSS*, 52, 1889, pp 205–32.

[13] Clapham, *op cit*, 1932, p 263.

[14] 1851 Census Great Britain, Age, Civil Condition, Occupations and Birth Places, Vol 1. Accounts and Papers, Vol 88, part 1, 1852–3.

[15] *Census of England and Wales, 1871. General Report*, Vol 4, 1873, xliv–xlviii.

[16] Ministry of Agriculture, *A Century of Agricultural Statistics: Great Britain 1866–1966*, HMSO, 1967.

and grass. Hence the continuity of the agricultural census data at the national level ends in 1975.

The area included in the size of a farm does present problems. Where data are only available for the area of crops and grass on farms — and this means most years before 1979 — the size of upland farms in Wales, the Pennines and the North Yorkshire Moors may be understated. J T Coppock has used the census figures for 1970, which include rough grazing, to plot the distribution of farm sizes.[17] There is however a further difficulty. In the 1880s, 1890s and 1920s it is possible that some permanent grass was neglected and would subsequently be returned by the farmer as rough grazing; hence the area returned as crops and grass, and thus the size of the farm, would be reduced. Conversely in the period since 1940 it is possible that farmers have upgraded rough grazing, and thus the size of their farm is inflated as a result of redefinition rather than genuine enlargement.[18]

There are however more difficult problems in interpreting the trend in farm size. The population census data refer to *farms* but the agricultural census to *holdings* of agricultural land and the two are by no means the same. Many of the smaller agricultural holdings consisted of land not used for agricultural production, but accommodation land for butchers and others, park land, private gardens and other such land. This problem may be partly overcome by eliminating from the analysis all holdings smaller than 5 acres.[19]

Perhaps more seriously many English farms are divided into two or more physically distinct holdings, although run as one farm business. Until 1922 occupiers were instructed to return a census form for *each* holding; thereafter, to return *one* form for each *farm*, even if split into several holdings, although to what extent they complied is unknown. It should also be noted that for the first forty years of the agricultural census, forms were collected by officials of the Customs and Excise, which may have encouraged evasion or inaccurate answers. The Ministry of Agriculture believes that the returns are reasonably accurate from the 1890s although occupiers were not required by law to return a form until 1927.[20] Even then some holdings remained undetected. The rationing of animals feeds in 1942 revealed a large number of hitherto unrecorded holdings, for the most part very small.

A third problem is that many of the agricultural holdings were — and are — part-time holdings. A number of surveys had indicated that a large proportion of all the holdings in England and Wales was farmed part-time, but it was not until 1968 that the Ministry of Agriculture attempted to define full-time holdings and to remove part-time holdings from the published tables of holding size.[21] Some 47,000 statistically insignificant holdings were deleted in 1968 on the grounds that they occupied less than 4 hectares of agricultural land, had no employed workers and needed less than 26 standard man-days of work per year. The thresholds of full-time were raised in 1973, and by 1977 a further 9600 holdings had been excluded. In addition, farmers who had continued to return more than one form for what was a single farm business were instructed to return only one form in future. Hence from 1968 onwards both the total number of holdings and the numbers in the smaller size classes are not directly comparable with the preceding years. The

[17] J T Coppock, *An Agricultural Atlas of England and Wales*, 1976.
[18] B E Cracknell, in discussion of Britton and Ingersent, *op cit*, 1964.
[19] Ministry of Agriculture, *The Agricultural Output of England and Wales 1925*, HMSO, 1927, Cmd 2815.
[20] E Thomas, 'Changes in the size of agricultural holdings in England and Wales during the past 100 years with particular attention to small holdings and the problem of small holdings', *Proceedings of the First International Conference of Agricultural Economists*, 1929, pp 139–56.
[21] Ministry of Agriculture, *National Farm Survey of England and Wales (1941–43), a summary report*, HMSO, 1946; J Ashton and B E Cracknell, 'Agricultural holdings and farm business structure in England and Wales', *Jnl Agric Econ*, 14, 1961, 472–500.

population census data for 1851 in contrast only included occupiers of land for whom farming was their main source of livelihood.[22]

Hence there are clearly considerable problems in interpreting the trend in the size of *farms*; indeed for most of the period it is only *holdings* that can be traced. But, as already noted, the way in which trends are measured can lead to differing interpretations of change. These are now considered.

III

The total number of holdings of over 5 acres rose slightly from 1870 to 1915 (Table 1) and then declined by 27 per cent to 1966, by 46 per cent to 1975; but much of the decline between 1966 and 1975 was due to the exclusion of holdings — 47,000 — which were defined as statistically insignificant in 1968. Three-quarters of the fall in the total number of holdings was accounted for by holdings of 5–50 acres. Some of the decline may be attributed to the return, after 1922, of one form for several holdings, rather than a form for each holding. More important, the total area in crops and grass fell by over 2½ million acres between 1915 and 1966 due largely to the conversion of farmland to urban uses. As much of this conversion was near towns, where farms are smaller than the national average, [23] some of the decline in numbers can be attributed to the elimination of holdings rather than the amalgamation of small holdings into larger units.

The mean size of agricultural holdings over 5 acres was remarkably constant from 1885 to 1951, with a slight decline to 1925 and increase thereafter (Table 1). After 1951 there was an undoubted increase, although between 1966 and 1983 much of this was due to the exclusion of statistically insignificant holdings from the published data and the inclusion of rough grazing in the area in holdings in the figure for 1983. In addition it should be noted that Acts of 1957 and 1967 attempted to accelerate the demise of small, uneconomic holdings by paying part of the costs of amalgamation and offering annuities to farmers who retired. They do not seem to have had a marked impact.[24] The figures for mean size of holding confirm the impression of stability from the late nineteenth century

TABLE 1
Total number of holdings over 5 acres,[1] England and Wales, 1870–1983

Date	*Number*	*Area[2] (000 acres)*	*Average size (acres)*
1870	336,497		
1885	338,715	27,378	81
1895	342,649	27,382	80
1915	342,710	26,773	78
1925	330,425	25,636	78
1935	312,503	24,757	(79)[3]
1944	295,247	24,136	82
1951	296,332	24,251	82
1960	273,135	24,254	88
1966	248,636	24,154	97
1975[4]	186,116	23,536	126
1983	173,336	26,921[5]	155

[1] From 1942 'of 5 acres and over'.
[2] Crops and grass on holdings of 5 acres and over.
[3] There are no figures for the area on holdings over 5 acres for 1935. An estimate for the area of holdings of 1 to 5 acres has been deducted from the total area in crops and grass.
[4] Statistically insignificant holdings were excluded from the tables after 1968.
[5] Total farm area on all statistically significant holdings.

Sources: Ministry of Agriculture and Fisheries, *The Agricultural Output of England and Wales 1925*, HMSO 1927, Cmd 2815;
Ministry of Agriculture, Fisheries and Food, *A Century of Agricultural Statistics, Great Britain, 1866–1966*, HMSO, 1968;
Agricultural Statistics, Great Britain, 1866–1966, HMSO, 1968;
Agricultural Statistics, England and Wales 1975, HMSO, 1976;
Agricultural Statistics, United Kingdom, 1983, HMSO, 1984.

[22] Ministry of Agriculture, *The changing structure of agriculture 1968–1975*, 1977; *Agricultural Statistics 1978–9 England*, HMSO, 1981.
[23] P G Craigie, 'The size and distribution of agricultural holdings in England and abroad', *JRSS*, 50, 1987, pp 86–149.
[24] Robson, *op cit*, 1970.

until 1951 which has been noted by many writers.

From the 1880s the number of holdings of 5–20 acres has been in continuous decline (Fig 1). But of the classes over 20 acres,

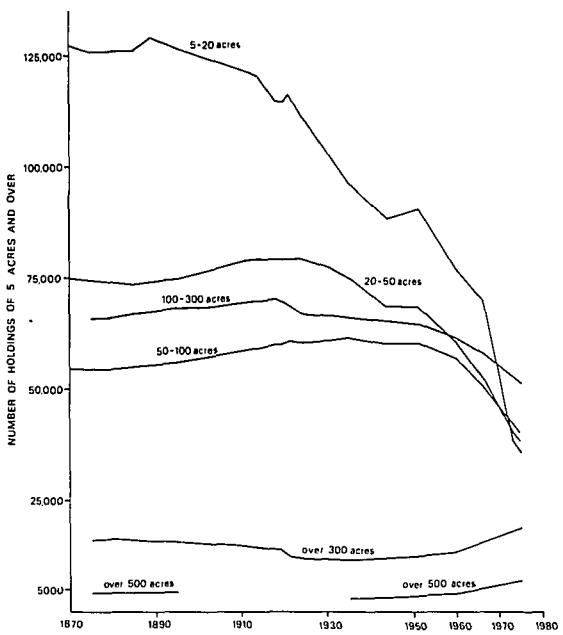


FIGURE 1
Changes in the number of holdings in each size class, 1870–1975

those beneath 300 acres *increased* from the 1880s until the 1920s and then declined, whilst in contrast the number of holdings over 300 acres declined until the 1920s and thereafter increased. It is possible that some of this latter change is due to changes in the definition of rough grazing by farmers. But it must also be recalled that there was a marked fall in the area of crops and grass over this period (Table 2A). Hence the percentage of the number of holdings in each size class may be a better indicator of change (Table 2B). The relative importance of small, medium and large holdings, by numbers, changed little between 1885 and 1960; it is possible to extend this comparison to 1851 and 1975. Part-time farms were not included in the population census data of 1851; between 1968 and 1975 the Ministry of Agriculture excluded a large number of small and part-time holdings, and exhorted farmers with separate holdings to return one form. By 1975 a holding must have been near to being the same as a farm and the two years can thus be compared. In 1851 the proportion of the number of farms in each size class under 300 acres except that of 50–100 acres was slightly less than in 1975 (Table 3a). Each size class over 300 acres was slightly more. But the differences are small and it is possible to claim that there was little change in the *relative* importance of each size class by *numbers* between 1851 and 1975 (Table 3a).

Large changes in the *number* of small holdings may have little effect on the *area* occupied by the size classes. Conversely, comparatively small changes in the number of large holdings may influence the area in that class very substantially. Hence trends in farm size may be usefully analysed by considering the *area* occupied by each size class. In Fig 2 the major changes are the slow increase in the area occupied by medium-sized farms (100–300 acres) until

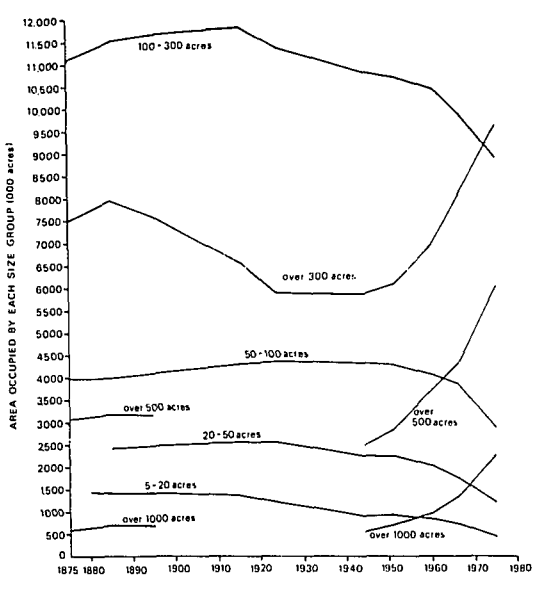


FIGURE 2
Changes in the area in crops and grass occupied by holdings in each size class 1875–1975

TABLE 2
England and Wales 1851–1983

Date	Crops and grass[1] (000 acres)	Small (5–100 acres)	Medium (100–300 acres)	Large (over 300 acres)
	A: Area of crops and grass occupied by small, medium and large holdings			
1851	24,660	21.6	44.7	33.7
1885	27,379	28.9	42.1	29.0
1895	27,382	29.5	42.6	27.8
1915	26,773	31.1	44.1	24.7
1924	25,636	32.6	44.3	23.1
1944	24,136	31.0	44.8	24.2
1951	24,251	30.8	44.0	25.2
1960	24,254	28.7	42.9	28.4
1966	24,154	25.6	40.5	33.4
1975	23,537	19.8	37.5	42.7
1983[2]	26,954	14.4	31.8	54.3
	B: Number of small, medium and large holdings			
	Total numbers[1] (000s)	%		
1851	215,615	62.5	29.7	7.8
1870	336,497	76.6	23.4	
1885	338,715	75.3	19.8	4.9
1895	342,649	75.3	19.9	4.8
1915	324,710	75.5	20.3	4.2
1925	330,425	75.7	20.4	3.8
1944	295,247	73.7	22.2	4.1
1951	296,332	73.9	21.8	4.3
1960	273,135	72.0	22.9	5.0
1966	248,636	70.1	23.5	6.4
1975	186,116	62.5	28.0	9.5
1983[2]	185,993	59.6	26.7	13.7

[1] Area and numbers of holdings of 5 acres and over.
[2] Includes all statistically significant holdings and is of total area; figures for over 300 acres are an estimate.

Sources: *1851 Census, Great Britain. Age, civil condition, occupations, and birth places*, Vol 1, Accounts and Papers, Vol 88, pt 1, 1852–3;
Ministry of Agriculture and Fisheries, *The Agricultural Output of England and Wales 1925*, HMSO, 1927, Cmd 2815;
Ministry of Agriculture, Fisheries and Food, *A Century of Agricultural Statistics, Great Britain, 1866–1966*, HMSO, 1968;
Agricultural Statistics, England and Wales, 1975, HMSO, 1976;
Agricultural Statistics, United Kingdom, 1083, HMSO, 1984.

the First World War and the steady decline thereafter, and the dramatic decline of the larger farms (over 300 acres) from the 1880s to the 1920s and the equally dramatic rise since 1944. The trends in the area occupied by the other smaller classes have been less marked but they have declined since the 1920s. It should be recalled that there was a considerable decline in the total area of crops and grass from the 1880s onward. Hence the relative importance of each size group must be examined (Table 2A). From 1885 until 1924 the percentage of the area occupied by small- and medium-sized farms

TABLE 3
England and Wales 1851 and 1975

Size (acres)	*(a) Number of holdings*				*(b) Area of crops and grass*			
	1851	%	*1975*	%	*1851*	%	*1975*	%
5–20	42,315	19.8	36,595	19.7	523,905	2.1	423,973	1.8
20–50	47,829	21.9	38,883	20.9	1,598,945	6.5	1,290,919	5.5
50–100	44,558	20.7	40,780	21.9	3,206,451	13.0	2,945,381	12.5
100–150	29,020	13.5	23,453	12.6	3,627,500	14.7	2,857,112	12.2
150–300	35,133	16.3	28,671	15.4	7,388,275	30.0	5,974,435	25.4
300–500	11,646	5.4	10,646	5.7	4,360,925	17.7	4,029,221	17.1
500–700	3,076	1.4	3,560	1.9	1,802,300	7.3	2,072,021	8.8
700–1000	1,267	0.6	2,031	1.1	1,038,750	4.2	1,669,514	7.0
1000 & over	771	0.4	1,497	0.8	1,123,300	4.5	2,273,678	9.7
	215,615	100	186,116	100	24,660,351	100	23,536,253	100

Sources: 1851 Census, Great Britain. Age, civil condition, occupations and birth places, Vol 1, Accounts and Papers, Vol 88, pt 1, 1852–3;
Ministry of Agriculture, Fisheries and Food, *Agricultural Statistics, England and Wales, 1975*, HMSO, 1976.

increased, that of large farms declined. Thereafter the area occupied by the former two classes declined, that of the latter rose from less than one-quarter of the area of crops and grass to one-third; the arguments for comparing 1851 and 1975 can also be applied to the data on area. Somewhat surprisingly the *percentage* of the area occupied by the small farms has fallen very little, the medium-sized more substantially, from 44.7 per cent to 37.5 per cent (Table 3b), whilst the larger farms have gained considerably, in contrast to the small changes in the percentage of the *number* of holdings in each class. As can be seen in Table 3b, it is the very big farms, over 500 acres, which have made most of the gain. All classes under 500 acres occupy proportionally less of the area of crops and grass than they did in 1851.

Clearly then, any interpretation of changes in the farm size structure of England and Wales depends upon which measure is used. Because of the great decline in the area in crops and grass since the 1870s, structure as well as the absolute number or area occupied in each class has to be considered. In terms of the relative structure of numbers there was little change between 1885 and 1966, or indeed between 1851 and 1975. But in terms of the area occupied the period is dominated by the decline of the larger farm from the 1880s — and possibly since the 1870s — to the late 1920s and thereafter the rapid growth of farms over 300 acres. Even so it was not until the later 1960s that the proportion of the area occupied by holdings over 300 acres reached one-third, the proportion which had been occupied by such *farms* in 1851.

IV

There were important regional differences in the trends in the area occupied by small holdings between 1885 and 1924, and between 1924 and 1973.[25] As noted already, the area occupied by small farms increased in the first period, but only very slightly (Table 4). Indeed, in many counties in the north of England and in Wales there was an actual decline, and the larger increases were found in the counties of the southern fens and in Wiltshire, Dorset and Hampshire. This may have been due to the more active acquisition of land by county councils to create small holdings under the Acts of

[25] The change of county boundaries between 1973 and 1974 prevents the use of later figures.

TABLE 4
Changes in the area of crops and grass occupied by small and large holdings, England and Wales, 1885–1973

Region	*Percentage change in the area occupied by holdings of 300 acres and over*			*Percentage change in the area occupied by holdings of 5–100 acres*		
	1885–1924	*1924–73*	*1885–1973*	*1885–1924*	*1924–73*	*1885–1973*
1 East	−16.2	+55.5	+30.7	+11.1	−57.5	−46.9
2 East Central Midlands	−20.8	+74.1	+37.8	+ 4.7	−50.5	−48.1
3 South-east Midlands	−17.8	+54.6	+27.0	+ 5.2	−54.0	−51.6
4 South central	−27.8	+41.5	+ 2.1	+28.8	−41.1	−24.2
5 South-east	−40.0	+88.5	+13.7	+ 7.8	−54.5	−51.0
6 West Midlands	−27.2	+72.9	+25.8	+11.4	−35.0	−27.6
7 North-west	−30.0	+35.2	+35.2	− 5.8	− 5.9	−61.8
8 North	−30.0	+91.7	+33.9	+ 1.4	− 6.0	− 4.8
9 South-west	−47.6	+132.0	+21.6	+17.5	−27.0	−14.6
10 Wales	−44.6	+178.0	+53.8	+ 3.9	−31.0	−28.4
South-west, Wales & North (6–10)	−34.9	+102.3	+31.7	+ 3.3	−36.4	−34.3
East and south (1–5)	−21.2	+45.7	+24.5	+10.5	−86.2	−84.8
England and Wales	−24.4	+66.8	+26.2	+ 5.8	−42.0	−39.1

Source: Ministry of Agriculture, *A Century of Agricultural Statistics Great Britain, 1866–1966*, HMSO, 1968.

1892, 1908, 1916, 1918 and 1926.[26] More noteworthy were the spatial variations in the decline of holdings over 300 acres, for although the decline occurred in all counties except Rutland and Huntingdon, the decline was least in the east and south where arable husbandry and large farms predominated in 1885, and greatest in the areas of small farms and livestock production (Table 4) in Wales, the south-west and north-west. This pattern was reversed in the half century after 1924, for although the area occupied by holdings over 300 acres increased in every county except Northumberland the increase was greatest in the west, in the very regions where decline had been greatest in the preceding period (Table 4). Between 1924 and 1973 the decline of the smaller farm was universal, but it was greatest in the east and south-east, least in most counties in the south and west, Wales, the north-west and the West Midlands.

Although of course there have been great changes in the area occupied by farms of different sizes in the counties of England and Wales, the broad geographical pattern has remained unchanged since mid- and late-Victorian times. In the east and the south — roughly east of the Pennines and south of a line from Rutland to the Bristol Channel and then due south to the English Channel — the large farm was of above average importance; west of this line, in the south-west, Wales, the industrial counties of the midlands and the north-west, the small farm predominated in 1851, and compared with the east and south-east, still does.[27]

[26] J A Venn, *The foundations of agricultural economics*, Cambridge, 1933, pp 110–11, 129–38; E H Whetham, *op cit*, 1978, pp 137–9, 217–19.

[27] D Grigg, 'Small and large farms in England and Wales: their size and distribution', *Geography*, 48, 1963, pp 268–79.

V

Since 1975 size classes have been recorded in hectares rather than acres and from 1979 the total area on farms rather than simply the area in crops and grass has been recorded by the Ministry of Agriculture, making it impossible to make direct comparisons of the distribution of farm size before and after 1975. Nonetheless the statistics show a continuing decline in the smaller size groups, and a growth in the larger size groups (Table 5).

has been an increase in the number of holdings which are returned as separate holdings in the census but are run as a single business enterprise. This is due to the increasing number of family partnerships, where, for example, father and son run two physically distinct holdings, or where a landlord has added a formerly tenanted farm to a home farm and run it as a single business, or where companies organize several separate farms as a single financial activity. Thus in a survey of east Norfolk

TABLE 5
Agricultural holdings in England and Wales, 1977 and 1983

	Total	*Under 19.9 ha*	*20–39.9 ha*	*40–99.9 ha*	*100–199.9 ha*	*200 ha & over*
			A: Number of holdings			
1977	199,131	84,942	37,463	47,945	19,160	9,621
%	100	42.7	18.8	24.1	9.6	4.8
1983	185,993	76,395	34,434	45,861	19,193	10,110
%	100	41.1	18.5	24.7	10.3	5.4
			B: Total area occupied by holdings			
1977	10,968,134	651,159	1,085,277	3,037,281	2,631,006	3,563,410
%	100	5.9	9.9	27.7	24.0	32.5
1983	10,912,625	596,664	1,001,918	2,919,924	2,645,468	3,748,652
%	100	5.5	9.2	26.7	24.2	34.4

Sources: *Agricultural Statistics UK 1980 and 1981*, HMSO, 1982; *Agricultural Statistics UK 1983*, HMSO, 1984.

There is no doubt that this is a real trend, and indeed is a continuation of tendencies apparent for some fifty years. However, some qualification is necessary. First, since 1968, and continuing until the present day, holdings which do not meet the Ministry of Agriculture's minimum thresholds for a statistically significant holding have been excluded from the published data on holding size, thus the decline in both the total number of holdings and in particular of the smaller holdings is exaggerated. Conversely some authorities believe that the number of very large farms, particularly those over 700 acres, is understated.[28] This is because there in 1978, 125 separate holdings were identified in the annual census but were run as only fifty-nine businesses.[29]

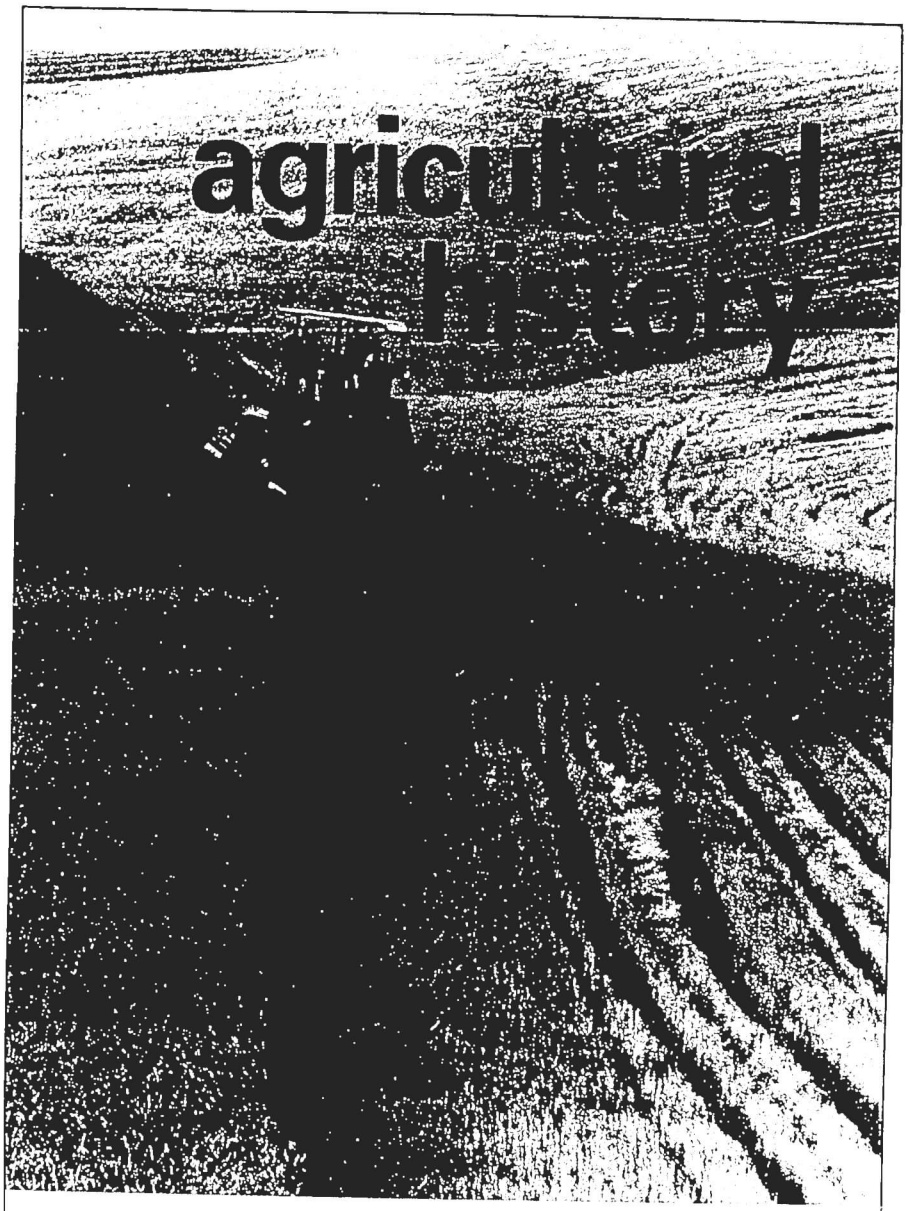
VI

This paper confirms that there was a significant change of direction in farm size change in the 1920s. Before the 1870s the larger farms were increasing at the expense of small farms, but this was reversed in the 1880s, and until the 1920s the smaller farms increased absolutely and proportionally, whilst the larger farms declined. Since then the trends of the earlier nineteenth century

[28] *Report of the Committee of Inquiry into the acquisiton and occupancy of agricultural land*, HMSO, 1979, Cmd 7599 (Chairman, Lord Northfield), p 35.

[29] Holderness, *op cit*, 1985, p 128; T K Marsden and D G Symes, 'Landownership and farm organization: evolution and change in a capitalist agricultural region', *International Journal of Urban and Regional Research*, 8, 1984, pp 388–99.

have re-established themselves, although it was not until the mid-1960s that farms over 300 acres occupied the same proportion of crops and grass as they had in 1851, whilst as late as 1975 the numerical structure of English farming showed little difference from 1851. Changes in the measurement of farm size and the deletion from the census of statistically insignificant and minor holdings since 1968 makes it difficult to continue the analysis on a consistent basis but there seems little doubt that the growth of the large farm at the expense of both small- and medium-sized farms continues. In 1983 13 per cent of the holdings accounted for over half the total land occupied by statistically significant holdings in England and Wales. But just as the agricultural holding has never been synonymous with the farm, so it would seem that changing patterns of farm business may soon require yet further changes in definition.



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Postgraduate Research in Agricultural History in British Institutions of Higher Education: a Survey

By MICHAEL HAVINDEN

At the September 1985 meeting of the Executive Committee of the BritishAgricultural History Society it was suggested that it would be interesting to know whether the cuts in funding to institutions of higher education, which had commenced in 1981 had had any effects on research in agricultural history; and if so to determine what these effects had been. Accordingly I undertook to circulate the Institutions, and in consultation with the Treasurer, Dr E J T Collins, I designed a simple questionnaire which was sent to 50 Universities, 30 Polytechnics and 48 Agricultural Colleges and Agricultural Museums.

The questionnaires were sent out in December 1985 and asked six simple questions. They were deliberately kept brief to encourage busy lecturers to go to the trouble of filling them in and returning them. The first two questions asked how many students were undertaking research in agricultural history (or related areas) and how they were distributed amongst the age brackets 21–26, 27–32, 33–37 and over 37. The next two questions asked how many of the students were in receipt of grants, and the years in which they first registered for their research degrees. The next question asked whether the research was on British, or European agricultural history or on some other part of the world; and the final question asked for a division into chronological periods, as between Ancient (to AD 400) Medieval (400–1500) Early Modern (1500–*c*1750) and Modern (since *c*1750). These chronological divisions were necessarily arbitrary and did not fit all cases, but generally speaking the respondents did not have difficulty in assigning their students amongst these categories. The response to the questionnaires naturally varied. First, the institutional response was rather mixed, as may be seen in Table 1, where it is analysed into three categories.

The response from the universities was particularly gratifying at 66 per cent, especially as several universities sent responses from more than one department so that the total number of university responses was 48 from the 33 universities who replied; and consequently the total number of responses from all institutions was 73 — as oppposed to the 58 responding institutions shown in Table 1. It is difficult to assess the significance of non-response. It is probable that the majority of non-responding institutions failed to reply for the simple reason that they had no students working on agricultural history, although this cannot be regarded as applying in all cases since fourteen agricultural colleges and six polytechnics without such students took the trouble to reply. Admittedly this was not very onerous for them.

Although the response from the universities was in general most encouraging there

TABLE 1
Institutional response

Type	*Number circulated*	*Number replying*	*% Replying*
Universities	50	33	66
Polytechnics	30	10	33
Agricultural Colleges, etc.	48	15	31
TOTALS	128	58	45

were a few which failed to reply in which I either know, or suspect, that some research in agricultural, or at least agrarian history, was being undertaken. These included Oxford, Edinburgh, Glasgow, Swansea, Cardiff and the New University of Ulster. Thus the number of universities with no research students working on agricultural history was probably fewer than the seventeen implied by Table 1.

In all, 81 research students in agricultural history were identified, who were located in 27 institutions (47 per cent of those who replied). This left a disappointing group of 31 responding institutions (53 per cent of the total) where no research in agricultural history was being carried out. However, if we make some allowance for non-respondents who do have such students, it would probably be fair to say that the situation is not quite so depressing as these figures might imply. It is probably unrealistic to expect many agricultural colleges to be able to sustain research students in agricultural history, and their inclusion in the survey gives it an unnecessarily downward bias.

Polytechnics may be in a similar position, in that they are mostly located in towns, and this may give their research orientation a somewhat urban bias. This however cannot be the whole story since the four Polytechnics which recorded having research students working on various aspects of agrarian history, were all urban (Coventry, City of London, Oxford and Sunderland).

The distribution of the research students amongst types of Institution is shown in Table 2, where they are also sub-divided into full-time and part-time groups.

The distribution between full-time and part-time research students can be regarded as heartening in one sense, because rather more than half the research students (56%) were full-time; and this result was perhaps unexpected. On the other hand the fact that as many as 44 per cent of the students were part-time could be interpreted as a sign that the cuts were biting. This fear is reinforced by the replies to the question about grants, which revealed that only 30 per cent of the research students (24 students) were, or had been, in receipt of grants (21 at universities and 3 at polytechnics) — leaving 70 per cent as self-financing, mostly on a part-time basis. It can however be taken as an encouraging sign that 57 research students were sufficiently interested in agricultural history to undertake postgraduate research at their own expense.

This pattern of part-time work was reflected in the age structure of the research students, of whom 53 per cent (43 students) were 27 years old or more, and 47 per cent (38 students) were under the age of 27 years at the time of the survey.

This slightly gloomy picture is however a little brightened when the length at which the students had been at work is examined. Of the 81 research students at work during the survey period (which extended from about December 1985 to June 1986) no fewer than 50 (63 per cent) had commenced work in 1983 or after — that is they had been at work for less than three years, while only 37 per cent of the students had commenced their work more than three

TABLE 2
Distribution of Research Students by Institutional Type

	Number of Institutions	*Full-time Students*	*Part-time Students*	*Total*	%
Universities	22	42	27	68	84.0
Polytechnics	4	3	9	12	14.8
Agricultural Colleges, etc.	1	1	–	1	1.2
	27	46(56%)	36(44%)	81	100

years before the survey was taken. This result was heartening and suggests that entry into research work may not have been too severely impeded by the cuts; but the lack of an earlier survey with which to compare this one, means that there can be no certainty about this: it is probable that considerably more research students were at work in the 1960s and 1970s, than in the early 1980s.

Another piece of information which the survey revealed was the type of academic department in which the students were working, but as agricultural history is an inter-disciplinary subject, which cuts across the traditional disciplines, this information is perhaps not very significant; but for what it is worth 43 of the 68 university postgraduates were working in History or Economic and Social History Departments (63 per cent) and 20 were working in Geography Departments (29 per cent). The remaining 5 students were in Economics or Agricultural Economics Departments (7 per cent). It was not possible to categorize the 13 students working in polytechnics and colleges.

The final piece of information revealed by the survey relates to the regions and chronological periods that the students were investigating. Not surprisingly the overwhelming majority were working on British agricultural history (74 students or 91 per cent) with only 7 students (9 per cent) working on other areas, nearly all of these being European. The sub-division into chronological periods of those working on British agricultural history is shown in Table 3.

That the modern period would predominate was always probable, but that its predominance should be so overwhelming with over 71 per cent of the students was perhaps a little surprising. That the ancient and medieval periods should have drawn forth a somewhat small interest was perhaps also not surprising, but that they should have together attracted nearly twice as many students as the early modern period was certainly unexpected. It would appear that the rich vein of the early modern period may be like a mine which has been overworked. It has attracted so much attention from distinguished scholars like

TABLE 3
Postgraduate Research in British Agricultural History by Chronological periods

Period	*Number of postgraduates*	%
Ancient (prior to 400 AD)	2	2.7
Medieval (400–1500)	10	13.5
Early Modern (1500–1750)	7	9.5
Modern (post–1750)	53	71.6
Longer periods	2	2.7
	74	100

R H Tawney, W G Hoskins, Eric Kerridge, Eric Jones and many others; and latterly of course from Joan Thirsk and her team of co-authors of Volumes IV and V of the *Agrarian History of England and Wales*, covering the years 1500 to 1750, that aspiring young scholars may feel that it needs a long rest, and that we need time to digest the extensive researches of others before renewed efforts are devoted to the early modern period. If this is so, it would be a pity because, despite all the work that has been done, many of the most critical aspects of the period, such as the real incidence and causes of enclosure, the disappearance of the English peasantry, and the genesis and diffusion process of the manifold agricultural improvements of the time still elude our full understanding. The social history of the countryside in this period is another unclear area. There is still much work to be done on early modern agricultural history, and if this survey has done nothing else it has at least drawn attention to a research 'gap' which needs to be filled.

In sum, can any general conclusions be drawn from the survey? The fact that 81 postgraduate researchers in agricultural history were identified may be regarded as an encouraging sign, even though we do not know how it compares with earlier periods. Nor should the number 81 be taken as sacrosanct, since there is a suspicion that some respondents may not have fully understood the questionnaire and have put down *all* their departmental research students, regardless of topic. On the other hand a possible overshoot in this connection might be offset against a number of research students who were not identified by the survey, either because their Institution was not circularized (some colleges of further education for instance) or because their institution did not reply to the questionnaire. With a bit of luck, these two figures may have cancelled each other out. The numbers of postgraduate research students may therefore be regarded as giving some cause for satisfaction, but certainly not for complacency.

The chronological distribution was more worrying, and it is to be hoped that the modern period may receive less emphasis in the future and that the early modern and medieval periods will attract greater attention.

Finally, while the universities seem to be sustaining a reasonable amount of research in the subject, there would appear to be considerable scope for expansion in the polytechnics and colleges. While these institutions clearly have even more serious funding problems than the universities (and no one should underestimate the difficulties they have to contend with) it is to be hoped that in future they may be able to steer a few more research students towards agricultural history.

I should like to extend my warmest thanks to all those institutions who replied to my questionnaire; to Robin Stanes, Honorary Research Fellow in the Economic History Department at Exeter University, who undertook much of the labour of analysing the returns; and to Mrs Celia Manning Departmental Secretary, who helped to identify the institutions and sent out the questionnaires.

Book Reviews

M JONES, *England before Domesday*. Batsford, 1986. 174 pp. 41 figures; 20 plates. £17.50 (hardback); £9.95 (paperback).

R V Lennard called Domesday England 'an old country'; for Jones it is an ancient one. It is the argument of this book that much of it dates from prehistory. The rich Domesday meadow of the Upper Thames valley had been open grassland since the second millennium BC; Domesday's managed woodland goes back in some form to the fourth millennium, and as coppiced plots to the first. If the major change in the post-glacial landscape was the clearance of the wildwood, that too was prehistoric, the open and chequered landscape of Domesday England achieved by the turn of the Christian era. If 'age' has become 'antiquity' in Dr Jones's analysis, his argument suggests only *modern* man is vile. The English environment was formed through six millennia of human activity, which spread the simplified, steppe-like eco-system of agriculture, and in the process helped the formation of podzolized heath and moor where round barrows bury not only the agents of this desolation but the archaeological evidence of the once richer environment. All this at the expense of the wildwoods' diversity. But our prehistoric ancestors enriched as well as simplified. Their mixed landscapes of clearance and managed woodland provided habitats for a wider flora and fauna, their gathering places supported an enormous variety of life — though cereal-eating beetles and human intestinal parasites make the ecological equation of 'variety' and 'virtue' dubious. Hand-in-hand with the spread and intensification of prehistoric agriculture went the multiplication of our categories of agricultural weeds. The dreary impoverishment of monoculture is our own invention.

The tools of landscape and environmental archaeology have pushed back the frontiers of knowledge beyond the documented historical period, which is less than one-tenth of this book. The results may occasionally leave the historian uneasy. Political and social as much as economic factors must have formed Jones's 'landscape of ancestors' and even more so the boundaries already clear in the second and first millennia BC. Pressure on resources is only one element in the definition of property rights, albeit a fundamental one. But for his period and methodology, consideration of such factors might invite unfounded speculation. Archaeological excavation is geographically patchy, but even allowing for this there is a *positive* lack of evidence for some of his continuity arguments in midland and eastern England. Since these are precisely areas argued to have changed during the historical period, more attention to the evidence of that period was necessary here. Yet these are minor criticisms beside his overall achievement. Excellent illustrations, detailed exemplification and clear, accessible exposition combine to make this essential reading for all those unfamiliar with the findings and methodology of the burgeoning area of environmental archaeology.

PAULINE STAFFORD

PAUL COONES AND JOHN PATTEN, *The Penguin Guide to the Landscape of England and Wales*. Penguin Books, 1986. 348 pp. 83 illustrations. £6.95.

Books about landscapes, real and imagined, fearful and utopian, are currently much in favour, and represent in many respects a strange amalgam of circumstances, some to do with the long and strong tradition of landscape description and analysis by geographers and local historians, some reflecting the value afforded to landscape as nostalgic and as therapeutic release from the times of economic depression in which we live. All the more important, therefore, that new offerings of this *genre*, notably those that follow in the much-respected Hoskins tradition, should be lively, well-informed, well-written, and visually attractive.

Two well-known historical geographers, Paul Coones and John Patten (until recently making the landscapes of the historic present as Minister of State for Housing, Urban Affairs and Construction), have produced a well-structured introduction to the landscapes of England and Wales, combining scholarly authority and caution with the narrative skills necessary for the telling of this most fascinating selection of stories.

After a short and pithy introduction on the nature of landscape, the authors launch forth boldly but selectively into a series of descriptions, of varying length, of the main periods of landscape development. Thus, successive chapters deal with: The Natural Landscape; Prehistoric and Roman Landscapes; Dark Ages Landscapes; Medieval Landscapes; Pre-industrial Landscapes; Landscapes of the Industrial Revolution and the Victorian Era; with a conclusion on The Modern Landscape. A similar sequence is followed in each chapter: an initial outline and explanation of the characteristics and changes for each period being followed by detailed analysis of some selected and representative sites. The Medieval Landscapes chapter (Chapter 4), for example, treats of Domesday England, the Normans and Wales, the economic background to the medieval landscape, medieval agrarian landscapes, forests, chases and parks, castles, fortified houses and moated settlements, rural settlement, and towns. The illustrative examples (twelve individual sites plus a group

of 'failed' new towns) include Braunton Great Field, Corfe Castle, Tintern Abbey, Old Sarum, and Burford.

An inevitable problem with a work such as this is that of condensation of such a massive range of landscape types and experiences into a single book. Unevenness of treatment of particular periods is an almost inevitable consequence. While the very long first chapter on the natural landscape is an important base, one wonders about the need for so much detail of geological sequences (including such credible but curious designations as 'Permo-Triassic landscapes'), when later on little is said about fortified sites and monasteries, for example. Other gripes might include the short shrift given to the Roman villa, the very traditional analysis of the data from Domesday Book, the excessively short and in some respects trivial last chapter on the modern landscape, and, in particular, the extremely poor quality of reproduction of photographs. This having been said, the authors have obviously followed their own interests and styles (including comments which give an occasional hint of the House of Commons in its more jocular moments), and have avoided the common but irresponsible way of presenting the past as a series of neat and undisputed progresses towards a better material life for the population at large (hence their section on 'landscapes of wealth and poverty' in Chapter Five). Full map references are given for the sites chosen as examples, and the maps and drawings are helpful. This book deserves a popular following, which will be increased if the publishers give the necessary and urgent attention needed to improve the quality of reproduction of photographs in subsequent printings.

R A BUTLIN

MARJORIE KENISTON MCINTOSH, *Autonomy and Community: the Royal Manor of Havering, 1200–1500*. CUP, 1986. xiv + 319 pp. £30.

The manor of Havering was held by the crown throughout the later Middle Ages. A multitude of references in royal administrative records, detailed manorial extents from 1251 and 1352–3, and a series of manor court rolls from 1382 onwards (with some earlier fragments) would have been enough to stake its claim for attention. But, as it is revealed to us in this admirable study, the history of Havering has other more distinctive attractions. The manor was a large one that stretched northwards from the northern shore of the Thames to include the villages of Havering-atte-Bower and Hornchurch and the market town of Romford. It contained 16,000 acres spread across a variety of soil types. Dr McIntosh's account of the agrarian and demographic history of this extensive area, which she explored initially in her *Economic History Review* article of 1980, makes a vivid contribution to our knowledge of the relationship between population and resources in the thirteenth and fourteenth centuries. Romford lies only thirteen miles from London, so that the opportunities for marketing agricultural produce were unusually good; the market there was already by the fourteenth century a source of supply for the capital. The absence of earlier court rolls precludes the study of this aspect of the manor's economy before the Black Death, but the book is rich in information concerning the commercial activities of Havering people after 1350. It is a further point of interest that Havering illustrates the development of legal practice relating to ancient demesne in the thirteenth century and shows how tenant rights affected the way in which the manor could be administered. The discussion here extends to show that some Havering men were drawn into the Revolt of 1381, which explains why court rolls are now available only from 1382.

As the book's title suggests, and as chapters 5 and 6 demonstrate, Havering was in many respects more like a free borough than an ordinary manor in the later Middle Ages. The crown had no direct interest in the administration of the manor court there, which was occupied more in resolving conflicts within the community than with the enforcement of seigneurial control from without. This autonomy, added to the manor's exceptional commercial development, means that many of the conventional distinctions between urban and rural society are here inappropriate. Moreover, exceptional freedom and commercial opportunity worked extraordinary effects. Under the influence of London and Londoners the manor moved vigorously in the later fifteenth century towards a higher concentration of property and greater economic specialization. Fatstock and dairy produce were the main components in agricultural development. 'By the end of the fifteenth century, Havering displayed many features of a capitalist agricultural organisation as it developed in other regions during the sixteenth and seventeenth centuries' (p 227). Opinion has moved strongly in recent years in favour of an integrated approach to rural and urban history, and this study provides powerful encouragement and assistance to research in that direction.

R H BRITNELL

ALFRED W CROSBY, *Ecological Imperialism. The Biological Expansion of Europe, 900–1900*. CUP, 1986. xvi + 368 pp. 7 figures, 20 plates. £27.50 (h/c), £9.95 (p/c).

The author's earlier publication, *The Columbian Exchange. Biological and Cultural Consequences of 1492*,

aroused considerable interest when it appeared in 1972. This new volume will come as no disappointment.

It begins by highlighting the paradoxes whereby those parts of the globe which are most like Europe in terms of population and culture are also particularly remote from Europe — across major oceans. Although these lands now hold the world record for the export of foodstuffs of European provenance, there were no crops of wheat, barley or rye, or cattle, sheep, pigs or goats, to be found within their borders 500 years ago. Indeed, there were still only 5 million whites in North America in 1800. South America had less than half-a-million, and Australia only 10,000 whites. New Zealand was still Maori country. The deluge took place between 1820 and 1930, when the equivalent of a fifth of the entire population of Europe moved to the 'new' lands, and flourished wherever it was possible to raise those commodities in demand back in Europe, and wherever the resident population was too small to meet that demand.

In setting out to explain why the migrants were so successful, the author recalls the impact of the first humans to reach America and Oceania, who found it so easy to slaughter the larger animals as to eliminate them altogether. The Amerindians, Aborigines and Maoris were in effect shock troops, clearing the way for a second wave, which began with the *marinheiros* of the post-medieval period, when, in the author's colourful language, 'chickens met kiwis, cattle met kangaroos, Irish met potatoes, Comanches met horses, Incas met smallpox — all for the first time. The countdown to the extinction of the passenger pigeon and the native peoples of the Greater Antilles and of Tasmania had begun.' The world's greatest demographic disaster had begun — the lands opened up by Columbus, Cook and other *marinheiros* became charnel houses. European diseases spread so rapidly among the indigenes that smallpox broke out often far ahead of its source, affecting peoples who had barely heard of, let alone come into contact with, the white invaders.

Twentieth-century technology alone could not have achieved so great an impact. It was the combination of the *marinheiros* and 'their portmanteau biota' that brought about a revolution more extreme than any since the extinctions of the end of the Pleistocene. The author cites the spread of weeds (the tramps of our flora) and the experience of New Zealand to illustrate why it was so one-sided an affair. The Empire never struck back. Contemporary observers expected something of an equal exchange between mother country and colonies, or at least something in proportion to the size of the flora and fauna. Even in respect of diseases, it was all 'wondrously one sided' — venereal syphilis being the New World's only important disease export, and, despite its notoriety, even this never stopped population growth in the Old World.

So many book titles give an exaggerated impression of what might be found between the covers that it comes as a shock to encounter a title that hardly does justice to the contents. The book's global sweep encompasses the course of events in both the Old and New Worlds since man first made any impact on earth. Written in an extremely readable style, the text is likely to be quarried for its many stimulating ideas, and the references for an introduction to the enormous literature which already exists on what another reviewer has called the 'biopolitics of civilization'.

JOHN SHEAIL

J V BECKETT, *The Aristocracy in England, 1660–1914*. Basil Blackwell, Oxford, 1986. 512 pp. £22.50.

Dr Beckett's textbook will occupy the commanding heights of this territory for years to come. In some 500 pages he has summarized and synthesized a vast bibliography of secondary literature on the role played by the English aristocracy in government (central as well as local), in public administration (in the shires and at Westminster), and above all he has surveyed the manifold connections between this highly important social group and the long-term growth of the economy from 1660 to 1914. The book deals not only with landed estates but includes chapters on the aristocratic contribution to the spread of communications, to the development of towns and to the rise of modern industry.

From the Restoration down to the Great War, a rather closed, fairly small and socially homogeneous élite ruled over a population and presided over an economy that grew more rapidly, urbanized more extensively, industrialized to a far greater degree and opened up its frontiers to international commerce more thoroughly than any of its European neighbours. How the English aristocracy consolidated and maintained political authority as well as cultural hegemony over a society undergoing such rapid economic change is the big question that informs this excellent book. In some ways that may appear as a surprising theme for Dr Beckett to tackle because his scholarly reputation rests upon impressive contributions to agrarian history. Furthermore, modern economic historians are inclined to leave the exploration of supposed connections between 'sub- and superstructures' to Marxists or their colleagues in general history. Nevertheless, Dr Beckett's invasion of this particular and highly contested territory is to be commended because some real expertise of how and why agriculture,

industry and towns developed from 1660 to 1914 is, potentially at least, as relevant to explanations for the long survival of aristocratic authority as any knowledge of politics, however detailed and scholarly. Moreover, his book is timely because its publication follows hard upon Jonathan Clark's controversial attempt to present 'English Society, 1688–1832' as an *ancien régime* almost undisturbed and unperturbed by the social or economic changes of the Industrial Revolution. Dr Beckett would agree and indeed his book suggests that the *ancien régime* survived almost intact through to the 1880s. Thereafter and right down to 1914 power slipped only slowly from the grasp of England's aristocracy.

The book very properly opens with definitions and enumerations of the aristocracy. Familiar and fine distinctions are elaborated upon between nobility and aristocracy, peerage and gentry, baronets and gentlemen. This discussion ends up with the usable notion of aristocracy as a governing class (titled and untitled) recruited from a small social group with fairly well defined boundaries. As the Stones have also recently demonstrated, the British élite was anything but open, especially after 1688. An almost indispensable passport for entry took the form of landed estates of a certain size, which were, however, difficult to acquire and to build up because the legal and social obstacles deliberately erected by kin groups who already possessed much of the land at the end of the seventeenth century restricted its turnover and sale to aspiring aristocrats. The ownership of land remained stable and by European standards highly and increasingly concentrated.

Although passwords and the styles of behaviour required to carry ambitious families into this exclusive estate could be acquired at public schools and ancient universities, family pedigree counted for far more when it came to the creation of peers and baronets, for election to Parliament, in obtaining the highest ranks in the army and the navy and in the selection of men for top posts in diplomacy and the civil service. For example, it was not until two centuries after the Glorious Revolution of 1688 that the House of Commons contained a majority of members socially representative of industry and commerce. Only 14 per cent of all new peers created between 1837 and 1881 came from families that were not aristocratic or gentry, and the overwhelming majority of that tiny proportion happened to be merchants and bankers ('gentlemanly capitalists') rather than industrialists.

Young Englishmen and women needed much more than 'love' to break through the fortified barriers of birth and hereditary privilege. Overwhelmingly the sons (including younger sons) of the aristocracy married within a socially-defined circle. With a few notorious exceptions, misalliances with actresses, singers and beauties of the day remained the stuff of novels and drama rather than upper-class life. Only 3 per cent of aristocratic men married the daughters of wealthy merchants in the eighteenth century. When attitudes towards 'outmarriages' softened in the Edwardian era, brides tended to emerge from banking circles or the United States and reflected the integration of land, city and transatlantic wealth.

Paradoxically in the most bourgeois and industrial of European societies the authority and values of aristocracy were, in Dr Beckett's words, 'accepted and everyone else conformed' and he suggests, 'a major reason for this acceptance is that the aristocracy never became anachronistic and a primary reason for this was their positive economic contribution'. Dr Beckett is concerned that 'the aristocracy have not generally received a good press for their contribution to economic development'. And he is determined to confront the rather negative view of their role conveyed most recently by historians such as Michael Bush, Martin Weiner and Harold Perkin whose writings form part of a radical antipathy to aristocracy that runs back through Henry George, John Stuart Mill, Thomas Spence and Tom Paine to Adam Smith and beyond to the English Revolution.

In the other camp no less a thinker than Edmund Burke would have applauded the scholarship and style that a judicious modern economic historian has unearthed for the defence of aristocracy which was, all too often in Burke's view, 'rashly slighted in the shallow speculations of the petulant assuming coxcombs of philosophy'. But what does Dr Beckett's case for a positive economic contribution add up to and what does it explain?

First and famously, as owners of up to 75 per cent of the nation's cultivable land the aristocracy fostered agrarian progress upon which industrialization and urbanization depended. Agricultural history is Dr Beckett's own well cultivated territory and he is suitably cautious in delineating and appraising the part that great proprietors played in the one sector of the evolving economy that they dominated as a birthright. He certainly appreciates that 'the central purpose of an estate was to produce a level of profit sufficient to support the lifestyle expected of an aristocrat. He had to finance portions and jointures, a London household, electoral expenditure and other outgoings depending on his personal predilections.' Nevertheless, the pursuit of profit for whatever reason may have redounded to the good of the national economy. In commercial societies throughout Europe aristocrats were drawn into the exploitation of resources they inherited, not only land but also coal and other minerals located on their domains. What is more at issue is how active and entrepreneurial was that involvement particu-

larly during the early stages of the Industrial Revolution?

Historians may sympathize with Dr Beckett's wish to 'redress the balance' in favour of aristocracy but a close reading of the case studies and noble name after noble name that he musters leads this 'coxcomb' to conclude that (despite some well-advertised examples to the contrary) the English aristocrary neither managed nor led the rather slow progression to a more productive agriculture. What it did was to preside gracefully over the work, vision and expertise of lesser men: owner-occupiers, large tenant farmers and agronomists such as William Marshall.

By 1660 aristocrats had already withdrawn some distance from farming and thereafter their absences from the countryside became a cause for social concern. Home farms remained less for experimental and demonstration purposes but rather to supply great houses with fresh provisions. The divorce between ownership and control in British agriculture is now recognized as premature. Stewards who ran aristocratic estates were seldom trained in agronomy and held their positions in order to safeguard their master's rents. Moreover, as Dr Beckett observed, 'Between the best and least well managed estates a great gulf yawned.' By standards set in industry and commerce the rates of re-investment from rents collected on the larger estates were not particularly impressive, at least not before 1815; while the laws pushed through Parliament by the landed interest, first to subsidize and then protect the cultivation of grain, raised the value of farmland and depressed the rate of industrialization. Aristocrats also used their political power to speed up the slow but voluntary evolution from open field to enclosed farms. Dr Beckett supports the orthodox and positive view of parliamentary enclosure but modern research pioneered by Havinden and reinforced by Yelling, Snell and Allen begins to question the presumed connection of enclosure to the growth of yields per acre. In the short term, the effects of politically inspired changes in agrarian property rights consisted essentially of a transfer of income to landowners and an increased incidence of underemployment among the rural workforce. At the end of his balanced survey of 'Aristocracy and Agricultural Revolution' Dr Beckett simply suggests their 'contribution to change was much more positive than their image as *rentiers* would suggest'.

Turning to manufacturing, most historians now agree that aristocrats played a negligible part in that leading sector. Their estates provided industry and towns with major raw materials: mineral ores, stone, slate, timber and above all with coal. Very sensibly, as the owners of these potentially valuable property rights, they provided the threshold funds and political support required to mine, cultivate and transport raw materials to works, factories, towns and ports. As with agriculture, aristocrats usually stood at some distance from direct involvement with the exploitation of natural resources and tended to operate through lessees and occasionally through managers. They then collected royalties, rents, wayleaves and interest. But it would be interesting to discover the degree to which they funded the risks involved in searching and boring for minerals. The legal frameworks under which individuals owned and exploited mines and quarries varied across Europe in the eighteenth and nineteenth centuries. Dr Beckett would probably agree that some international comparisons may be required before we can conclude that the English way of affording absolute subsoil rights to landowners constituted a more cost-effective system of supplying the national economy with minerals and energy supplies than, say, the more centralized systems pursued in France and some German princely states. To uncover details of an English aristocracy facilitating the exploitation of its property rights in minerals, stone and timber is interesting but hardly surprising. And the rents obtained from such riskless forms of enterprise may have been 'excessive'?

Surely similar sorts of questions arise wherever historians seek to evaluate the 'aristocratic contribution' to the spread of a communications network or the development of towns? It may not be sufficient merely to document the examples and to pinpoint the numerous cases of aristocratic investment in parliamentary promotion of turnpikes, canals, railways and housing. Their inherited wealth and political authority placed aristocrats precisely in positions where they could obstruct or facilitate the development of transportation and towns. Again the 'proportions' of aristocratic incomes invested in social overhead capital cannot be described as anything remarkable. Moreover, Dr Beckett is too good a scholar to hide examples of aristocrats who for the sake of privacy or for aesthetic predilections of their own resisted canals and railways and the 'encroachment' of towns and populations. Most, for the obvious enrichment of their families and for the preservation of their social estate, went along with the onward march of progress. For all that effort the aristocracy demanded and received 'heavy' compensation for their land as well as seats on Boards through which they safeguarded their rights to be consulted, placated and above all remunerated. Radicals (and no doubt many entrepreneurs who at the time sensibly kept their heads down) found the obeisance and money paid to aristocracy offensive. But a majority of businessmen, the professional and especially the working classes considered the order to be perfectly natural.

Was the manifest lack of challenge to the political and pecuniary claims of aristocracy rooted (as Dr Beckett argues) in a widespread recognition that the contribution of the ruling élite to making Britain into the 'first industrial nation' and the 'workshop of the world' had been positive and important? Contemporary perceptions on this issue are difficult to sum up. But the 'facts' so carefully assembled by Dr Beckett hardly support a case for the economic significance of aristocracy. Indeed the technical innovations, entrepreneurship, risks, organization and drive required to carry the economy to the pinnacle of its international success, at the end of the Victorian boom, came overwhelmingly from groups lower down the social scale.

And so apparently did most of the capital required to fund the slow and steady rise in the rate of net investment which occurred for two centuries after the Restoration. Although the point will never be nailed with statistics, Dr Beckett's admirable summary of that contentious issue of aristocratic debt leaves an impression that the savings which flowed from other social groups into the hands of the aristocracy may on balance have been used to sustain its conspicuously delightful style of life.

Defenders of aristocracy may rejoin that this did not matter very much. Some even go further and assert that the upper classes' high propensity to consume maintained levels of effective demand and employment. Unfortunately the counterfactuals implicit in these lines of argument are impossible to test. At first sight the economy appears to be 'awash' with investible funds. But investment particularly in the infrastructure and housing was interest-elastic. Net domestic capital formation did not grow at a particularly impressive rate, especially after 1873 when the economy came under greater competitive pressures. Banks of the day were not attuned to listen, let alone search for smaller and riskier ventures in domestic industry and commerce. On the contrary the City and, increasingly after 1844, provincial bankers demanded from their clients precisely the kind of security and credentials to borrow funds that the aristocracy so manifestly possessed. Furthermore the fastidious and cosmopolitan tastes of the upper classes did nothing to promote the diffusion of techniques of mass production which carried American and German industry ahead of Britain towards the end of the nineteenth century. Their 'bespoke' style of consumption, emulated by those just beneath them in the social scale, helped to maintain the craft tradition in British industry long after its day was over.

Except by implication, Dr Beckett did not elaborate upon the traditional case for aristocracy, namely that it provided society with political stability and good government 'on the cheap'. It is certainly true that England's first estate performed political and administrative functions that were only slowly professionalized and properly remunerated. Just how well the aristocracy ran central and county government is too large a question even to raise in a review. But the myth of an inexpensive state has been a long time dying. Over the period 1660 to 1914 per capita taxation in Britain was higher than anywhere else in Western Europe. Most of these taxes went into the acquisition and defence of the largest occidental empire since Rome. The British Empire was also the creation and creature of aristocracy. Imperialism played no small part in the long political survival and continued accumulation of wealth by the nation's hereditary élite; and the costs and benefits of both Empire and aristocracy are now beginning to be weighed up in the cold light of history.

For years to come Dr Beckett's text will be a point of embarkation for historians concerned to explain the survival of aristocracy in this most commercial and capitalist of European societies. Perhaps at the end of that voyage of enquiry (which must include some comparisons with even more anachronistic hereditary élites who survived elsewhere in Europe) that fact will no longer seem paradoxical. After all it is political change and not political adaptation and stability that is unusual. I suspect moreover that when all the research is in, the hegemony of aristocracy in England from 1660 to 1914 had little to do with its special contribution to the long-term development of the nation's economy, which probably grew despite and not because of its hereditary ruling élite.

PATRICK O'BRIEN

DAVID W HOWELL, *Patriarchs and Parasites: the Gentry of South-West Wales in the Eighteenth Century*. University of Wales Press, Cardiff, 1986. ix + 310 pp. £27.

More than twenty years ago Professor G E Mingay wrote that before a comprehensive picture of the eighteenth-century landed gentry could be assembled there would need to be detailed accounts of the gentry of particular areas. He wrote primarily in the context of England, but with the publication of David Howell's new book it is Wales, and particularly south Wales, which has received the most attention in recent years. When added to Philip Jenkins's and Joanna Martin's work on Glamorgan, this study of Cardiganshire, Carmarthenshire and Pembrokeshire, the post-1974 county of Dyfed, provides us with a splendid portrayal of the south Wales gentry. Much of the story, it has to be said, does not come as a surprise, but the meticulous documentation confirms what might have been anticipated and helps to provide firmer grounds for

painting in the comprehensive picture for which Professor Mingay was looking.

The gentry of south-west Wales turn out to have been relatively thin on the ground (even when the group is defined in such a way as to include a number of peers whose lifestyle was essentially similar). They were also poor, at least by comparison with their counterparts in Glamorgan and England. Largely as a result, their hands were often tied. Many of them, for example, were interested in improving the value of their estates and the efficiency of management, but because they had small properties and were relatively impecunious this proved more difficult to achieve in practice than in theory. Few landlords had the capital to invest, and little was done to improve farming through the terms of leases — partly because this would have involved a movement away from the three-life lease, which remained common. By 1800, they had achieved only limited success in persuading their tenants to adopt improved farming. Similarly, the opportunities for coal mining often had to be passed over to companies, or occasionally to partnerships of gentry, in order that sufficient capital could be made available. The consequence was that coal income seldom contributed substantially to landed revenue, and in general the gentry role in industrial development was severely curtailed.

Despite these constraints the gentry of south-west Wales were no Squire Westerns; indeed, Howell's study confirms — if it was ever necessary — how even in the furthest corners of Wales Macaulay's picture of an inebriated squirearchy simply does not ring true. The majority were cultured and refined (though a few admittedly drank too much), they had libraries, and they encouraged the Welsh language. Such interests were perhaps not surprising in view of their education and upbringing, and their links with the social round of London, the spas, and even the Continent. A number built houses and laid out parks, and their overall quality of living was not dissimilar to that of their colleagues in Glamorgan. An underlying tendency towards Jacobitism in the first half of the eighteenth century did not really affect their basic loyalty or their interest in politics, although sitting MPs seem to have been generally undistinguished at Westminster except in so far as they represented local interests and needs when required to do so. Their forte, so to speak, lay in the locality, as justices of the peace, and officers of the militia. If a few of the gentry neglected their local duties, the majority were model paternalists, and most of them made a positive contribution to the life of the region. Most people seem to have accepted that they were doing a good job, and harmonious relationships were the order of the day. Apart from occasional differences of opinion regarding enclosure, this tranquil picture only began to change towards 1800 when the gentry's relations with the rest of society became strained. Howell sees dissent — which the majority of the gentry distrusted — as the medium through which social dislocation was channelled.

Overall, this is a splendid study. Although primarily providing a detailed picture of what was happening in one region, because it is set in the broader context of the questions raised about landed society over the past two decades it also adds to our knowledge of the gentry in the distant counties, and at the same time provides evidence which will help historians to draw firmer conclusions about the overall position of the gentry during the eighteenth century.

J V BECKETT

PAUL BRASSLEY, *The Agricultural Economy of Northumberland and Durham in the period 1640–1750*. Garland Publishing, New York, 1985. iii + 224 pp. $28.

The publication of an Oxford BLitt thesis originally presented in 1974 may at first sight seem rather pointless, particularly as a digest of it appeared in 1984 as Chapter Two of *The Agrarian History of England and Wales, V, i* 'Regional farming systems', incorporating more recent related work. While the editors of the Garland series in British Economic History (Peter Mathias and Stuart Bruchey) offer no introductory account of the purpose of the series, it must be assumed that its purpose is to make more readily available, in their original form, significant postgraduate dissertations in British Economic History. While one may have mixed feelings about such a general venture and the attendant problems pertaining to their dates of origin, in this case the venture may be justifiable in respect of the incorporation of an interesting series of case-studies of the economic history of individual estates in Northumberland and Durham in the period 1640–1750.

After an introductory section which deals briefly with the nature of agriculture in the north-east before 1640 and the physical background to farming in the region, the work divides into four chapters and a concluding section. The first chapter is concerned with factors affecting demand for agricultural produce, including changes in the size and distribution of population, the relationship between population and industrialization, the wages and employment trends of agricultural and industrial workers, and short- and longer-term changes in food supplies and food prices. The population figures are mainly derived from sixteenth-century estimates, the Hearth Tax returns, and notes by Bishop Chandler during a Durham diocesan visitation in 1736.

Useful data for agricultural workers' employment conditions and wages are derived from an interesting series of labour accounts, notably those for the Shipcote and Park estates at Gateshead. The overall indications are that in the period concerned prices in the long term were stable against a rising demand for agricultural produce in the region, indicating an increase in agricultural production.

The remaining three chapters are devoted to an analysis and proof of this proposition of an increase in agricultural production. Chapter Two thus deals with aspects of landownership, and includes detailed case-studies of estates with widely differing histories of acquisition and development, notably the Percy estates, which differ from most in respect of their scale, distribution, absentee owners, and archaic systems of rent and fine. It was possible for land to be bought and retained at this period, even at times of adverse economic pressure, because of the easy availability of mortgages and other types of credit. Rents generally increased, indicating that debts could be serviced by increased rents at a time of increasing demand and yield. Changes in the structure of agriculture are discussed in Chapter Three, including enclosure and the regional variations in estate management practices. Chapter Four is concerned with technological aspects of farming and indicates the relatively late experience of the region of the innovations associated with the initiation of the agricultural revolutions further south.

The dissertation is well written, and the principal theme logically and coherently developed and illustrated. Current postgraduates looking for an example of high quality thesis-writing and construction will find a useful model here. That having been said, one still wonders whether — given the price of the book — it might not have been wiser to update the original thesis in the light of much more recent material and ideas and to produce something of even greater value than this valuable period piece?

R A BUTLIN

MAURICE BARLEY, *Houses and History*. Faber and Faber, 1986. 290 pp. £27.50.

In the introduction to his latest book, Professor Barley tells us that the title was originally to have been *The Archaeology of the House* and that this title was abandoned lest the prospective reader anticipate an account of the excavated remains of the past. Such a title would have been misleading anyway in that the book depends on archaeology in the wide sense of studying surviving buildings through fieldwork and history in the sense of studying documents about buildings. In fact the book is a social history in describing the life-style of various social groups through their dwellings.

More than half the book is devoted to the period *c*1066 to *c*1550 and readers familiar with the author's other books will be surprised at the balance between the two parts, but he explains that England and Wales are exceptionally rich in the survival of domestic buildings of the Middle Ages and the later buildings can here (in contrast to many Continental countries) be studied by reference to the earlier. In his preface Professor Barley explains that his attempts to understand the vernacular houses of the countryside led more and more to study what is often called 'polite' architecture, and, implicitly, that houses of town and countryside should be considered together. Only one chapter of the eight in Part I is devoted to Small Houses; the remainder include chapters on Royal and Aristocratic Houses, Manor Houses, the houses of Monks and Clergy and the houses of all the wealthier classes in the towns. Archaeology in the narrower sense of excavation is represented in the first chapter on Anglo-Saxon houses. Many readers will find this closely-written but wide-ranging half of the book of special value.

Rather less than half the book is devoted to the rather shorter period of 1550 to about 1850, a period with an even greater abundance of buildings and documents available for study. Here the proportions are changed in that one chapter out of six refers to the architecture of Country Seats, while there is a long chapter on Farmhouses and Cottages, a short chapter on Parsonage Houses, but nothing on the palaces of bishops, and a chapter on Urban Houses which extends to the terraced cottages of industrial workers. In this part as in the other there is a great deal about building materials and constructional methods. Readers devoted to vernacular architecture may find this part of the book rather compressed.

In the book as a whole there are over 200 illustrations comprising photographs and drawings which are mainly plans and isometrics. All have a welcome freshness. Most of the photographs have been taken by the author and are correspondingly appropriate but it is a pity that in an otherwise attractive piece of book production so many of the photographs have been reproduced in a size too small for their full quality to be appreciated. The plans come from many sources but most have been re-drawn in a consistent style and illustrate the points made with great clarity. Most of the isometrics illustrate buildings more completely than is possible in single photographs while some of the isometrics succeed in making clear quite complex matters of sectional design.

There is only one distribution map, but an interesting one. It is a tentative attempt to show where and in what intensity medieval peasant houses survive in England and Wales. It is equally interesting

in showing where they do not survive: Cornwall and half of Devon, all the western half of Wales, the Limestone Belt, and also the whole of England north of a line joining Liverpool and Norwich, except that some survival in the Vale of York is balanced by lack of survival in most of the East Midlands.

There is no doubt that *Houses and History* makes an important contribution to the literature on its subject. It provides an overview which is welcome at a time when many studies of houses are of individual examples or of parish or county groupings. It is up-to-date in a subject which is rapidly developing. But above all it is authoritative. Based on a lifetime of intense activity by its author, it contrives neatly and attractively within a convenient format a distillation of its subject which will be useful both for the specialist and for those who see evidence from houses giving light to illuminate their own subjects.

R W BRUNSKILL

MICHAEL TURNER (ed), *Malthus and His Time*. Macmillan, 1986. xx + 244 pp. £29.50.

Malthus exercises a perennial fascination over scholars. This latest addition to the corpus of Malthusian literature had its origins in a conference held in 1980 which heard over 170 papers (a Malthusian crisis indeed!), fifteen of which now appear in this slim volume. Such a number squeezed into 244 pages has created an unreasonable pressure on resources with the result that some of the essays are too short to be effective. Nevertheless, the general impression is of a stimulating collection that adds something both to our understanding of Malthus and of the society in which he lived.

The essays are arranged in four themes: population, land, labour, and capital. In the first, E A Wrigley demonstrates that Malthus, although a poor prophet of future demographic and economic trends, was a remarkably astute observer of past ones. Barry Stapleton shows that Malthus's jaundiced views of the reproductive habits of farm labourers were based on real life in the Surrey parishes where Malthus had his living. J P Huzel argues (again) that Malthus was wrong in seeing a link between the Old Poor Law and population growth. Lars Magnusson examines the empirical evidence behind the remarks on Scandinavian population in the second edition of the *Essay*; and François Pradel de Lamaze searches for evidence of Malthusianism in south-west France.

Part II contains four essays: a useful survey of the course of rents in the age of Malthus by Prof Mingay; a tantalizingly brief sketch of the consumption habits of the landed classes, 1790–1830, by David Cannadine that does not really succeed in exonerating them from the charge of abdicating their responsibility to the lower orders; a valuable study by Michael Turner of the corn crises of 1795 and 1800 which demonstrates that Malthus had good cause to worry about the balance between population and resources; and a characteristically original analysis by Wray Vamplew of the operation of the corn laws.

Parts III and IV are generally less successful, although Bernard Eccleston's discussion of labour markets is a useful insight into the complex realities of labourers' earning; Malthus was more aware of these than some of his contemporaries. Similarly, Anne Digby shows that between the publication of the first edition of the *Essay* in 1798 and the New Poor Law, Malthus's opinions on poverty were complex and evolving. Annie Vinokur's account of Malthusian ideology is also complex, but here the quality stems more from the author than from her subject. The three essays in Part IV, by François Crouzet, B L Anderson and Edmond Cocks, on Malthusian concepts of capital, stand somewhat apart from the rest of the collection; their focus is directed at the less demographic aspects of Malthus's writings.

Malthus emerges from this scrutiny remarkably well. Some of the authors seem not to like him or his ideas a great deal. But none can deny that Malthus was a major social philosopher living at a time when Britain was experiencing the greatest economic and social transformation in its history. This was Malthus's opportunity and he seized it.

L A CLARKSON

JONATHAN BELL and MERVYN WATSON, *Irish Farming 1750–1900*. John Donald, Edinburgh, 1986. viii + 256 pp. Illus. £14.

There are few works that detail how agricultural tools and machinery were used and particularly how they fitted in to the farming systems of a certain area. This book is most welcome, therefore, in outlining the use of both traditional cultivation implements used in Irish farming in the period 1750 to 1900 and tools and machinery introduced, more or less successfully, in that time. In all cases the implications to the farming system and on the social level are investigated as far as possible. The subject is a very broad one and the authors are the first to point out that their study is an introductory one.

Some implements, such as spades, characterized as the 'most distinctive Irish agricultural implement' and ploughs, are given separate chapters. Others are grouped into the type of cultivation, such as the preparation of land for crops which concentrates on drainage, sowing, harvesting, and threshing and winnowing. Certain crops are treated individually,

notably potatoes, flax and hay because of their importance to the area. Chapters on 'Landlords, Farming Societies and Agricultural Improvement' and 'The Theory and Practice of Improvement' serve to introduce and draw conclusions to the work.

Whilst most of the improvements were implemented on larger holdings the authors stress the contrasts found both regionally and across the social scale. Sources for the larger holdings are more readily available through the publications of the Farming and Agricultural Improvement Societies and Farming Journals but a wide variety of evidence has been looked at for the smaller holdings, including oral evidence. Likewise the pictorial sources are drawn from many areas and cover both the older and newly introduced methods using, for example, working demonstrations in museums to redress the balance towards the new improvements. The book overall reinforces recent thinking which has begun to question the established view that Irish agriculture during this period was very backward. This is achieved through a study of the farming techniques and how they were often closely adapted to local conditions, both physical and social. In many cases the introduction of improved methods would only prove suitable where there were economies of scale, and elsewhere the traditional farming systems continued to work well.

ANNIE HOOD

ROGER J P KAIN with RODNEY E J FRY and HARRIET M E HOLT, *An Atlas and Index of the Tithe Files of Mid-Nineteenth Century England and Wales*. CUP, 1986. xxviii + 651 pp. 582 figures, 108 tables. £55.

Roger Kain's *Atlas* appears with great timing on the 150th anniversary of the Tithe Commutation Act of 1836 (TCA). It is billed as a sequel to his joint volume with Hugh Prince, *The Tithe Surveys of England and Wales* (CUP, 1985). The ESRC, at a time of severe pressure on its resources, must be congratulated for supporting the project on which the *Atlas* is based. This has been public funding well spent.

The TCA coincided with a turning point in British agrarian history. The open fields with their communal arrangements had all but disappeared, encroachment on the wastes in many places was at its furthest limits, and improved farming techniques were accomplished facts if not necessarily of universal usage. Just around the corner was 'High Farming' — new investment, drainage, scientific methods in the use of fertilizers and dramatic increases in crop yields. What we get from the Tithe inquiry is a remarkable supply-side cross-sectional view of English and Welsh farming *c*1840.

The TCA commuted tithes to a fluctuating money payment. This was based on an average of the actual value of tithes paid in each parish or township over the previous five years. This value was then apportioned among the properties of each tithe district according to the land use of each component farm or field. The inquiry enacted to achieve this reached out to 14,829 tithe districts in England and Wales, and found that tithes remained to be commuted in over 12,000 of them. Of the three categories of document that the inquiry generated — the maps, apportionments and the files — the present work is devoted to the files, a wealth of materials on matters agricultural and procedural prepared by the local tithe agents or assistant tithe commissioners. A tithe file was opened for each of the 14,829 tithe districts. Without further details the reader should be aware that the information generated was not always consistently presented across the country. The local commissioners or agents perceived their counties to be characterized by either arable or pastoral farming. For arable counties they inquired into the titheable acreage, the acreage of arable, meadow and pasture, woodland, common, orchards, gardens and hops, with separate acreages for arable crops, together with yields and prices with which to calculate the value of gross output. After all it was directly or indirectly a financial arrangement which was in the process of commutation. In the pastoral counties they inquired into the ploughed acreage, the pastoral acreage including seeds, and the course of crops, which, as the author explains, allows estimates of the acreages under individual crops to be made. Quite clearly, therefore, the detail on land usage is not as comprehensive for the pastoral as for the arable areas, and because of problems over misreporting livestock numbers — the basis of valuation of the titheable produce of grassland — the livestock data have only been indexed, not mapped, in the *Atlas*. Even where parts of tithe districts were tithe-free, the produce of the whole tithe district was commonly enumerated. The author rejected those districts where less than 90 per cent of the total acreage was covered. Various other problems — especially tithe commutation at the time of parliamentary enclosure — ensure that what remains for analysis is a sample of English and Welsh farming *c*1840.

The *Atlas* sets out to accomplish two objectives, literally an atlas, and also a substantial index. From the wealth of quantitative data contained in the files the author presents what he calls a flavour — but I think more akin to a feast — of the distribution of farming practices in England and Wales. For each of thirty-one English counties there are up to

twenty-two maps displaying parish or township distributions of, for example, arable, pasture, woodland and commons acreages as a percentage of the tithe districts, the distributions of various crops as percentages of the arable, and yields per acre of those crops. For all of the Welsh counties and for Yorkshire West and East, Bedfordshire and Huntingdonshire, there are tabular land use aggregates without maps, and for the remaining six counties of Nottinghamshire, Leicestershire, Northamptonshire, Middlesex, Cumberland and Westmorland, the survivals of data are too few for analysis. This three-tier division was determined by the survival of usable data. Basically, if 18 per cent of the tithe districts in a county had acceptable data then that county was given the full treatment in terms of maps and summary statistics. The mapping was achieved by computer. The package and method which presents the data in the best light at the local level, but also allows cross-county comparisons to be made, is the GIMMS–IV package, using choropleth maps with uniform class intervals within each type of map. The maps themselves now stand as the means of communicating the agricultural history of the period without further analysis, though a short text accompanies each county to indicate, amongst other things, the individuality of the local commissioners and agents, giving some flavour of how they perceived their task and their local countryside. The author also presents tabular estimates of broad county land and individual crop usage, and average crop yields. Finally, for England and Wales there are summary maps set at the county level showing various crops as percentages of the arable, showing average yields, and giving a regional assessment of the gross output of wheat, barley, oats, and all grains combined. There are also summary tables indicating the acreage and output of specific crops for England and Wales, together with an interesting comparison of land use across time ranging from the 1801 crop returns through to the 1872 June returns, using the tithe files, amongst other sources, for intermediate comparison. My calculations indicate that for England in 1801 wheat, barley, oats, pulses and turnips were distributed in the proportions 34, 19, 27, 10, and 9 per cent, and in *c*1836 they were 38, 23, 18, 7, and 15 per cent. Although wheat, barley and turnips had been in the ascendancy, the combined acreage under all arable crops had increased from about 6.5 million acres to nearly 9 million. Average crop yields do not appear to have changed much over the same period; wheat yields for example were about 20/21 bushels per acre in 1800/01 rising to only 21.7 bushels in *c*1836.

As an aid to the user of the tithe files in their raw state the author has completed his *Atlas* with remarkably detailed Place and Subject Indexes. The first lists all of the nearly 15,000 tithe file districts within their counties along with their unique PRO reference numbers, includes a description of the status of each district — parish, township, etc — and indicates the categories of documents contained in the files. The subject index, which is cross-referenced with the PRO numbers, is arranged in counties and then under 182 subject headings. To do justice to the indexes would require a review in its own right. Needless to say the range of subjects is as comprehensive as this reviewer could imagine.

The data on which the *Atlas* is based is now in the public domain, available through the ESRC Survey Archive at the University of Essex. It will take a long time fully to appreciate the scale and worth of this work. This reviewer is still digesting the enormity of the project, and as such this review is little more than a potted guide, but he feels confident that users of the *Atlas* will agree that Dr Kain has provided a masterly and scholarly reference work.

MICHAEL TURNER

MARIE HARTLEY and JOAN INGILBY, *Dales Memories*. Dalesman Books, Clapham, 1986. 142 pp. Illus. £7.95.

In 1954 Maurice Beresford reviewed *Yorkshire Village* by Marie Hartley and Joan Ingilby. He noted how, without claiming to write economic history, the authors had succeeded in doing so. Now, some thirty years and several books later, the two writers have once again entered the sphere of economic history. However, this publication is concerned with much wider topics. Miss Hartley and Miss Ingilby also range happily through social, architectural and agricultural history. Their parameters are neither temporal nor topical but geographical, as all the contents relate to the Yorkshire Dales.

The book opens with a fascinating account of the fluctuating fortunes of the deer, from the chases of the Middle Ages to the eighteenth century when the deer finally died out (though recently, due to afforestation, they have returned). The next chapter concentrates on corn mills or, more specifically, on those occurring in one small area, Dentdale. It is this micro approach that is so valuable to other historians writing more general regional or national studies. Barns are examined in the following two chapters and provide a wealth of information on barn types and individual buildings. With the careful plans, neat line drawings and attractive photographs supporting the narrative, the details given here will enhance the recent national barn survey.

Mountain sheep and the local incidence of transhumance (with reference to Ladurie's *Montaillou*) are scrutinized and a clear picture of sheep movement

and the problems inherent in such an activity emerges. The useful study of some early nineteenth-century Dales emigrants, their motivation and destination, will provide flesh for the statistical bones of other historians' researches.

The final chapter is entitled 'A Sheaf of Memories'; the reminiscences of eight different individuals/families are recounted and serve to highlight the whole emphasis of the work. The book is a collection of studies of landscape, people, and events which together formed the living community of the Dales and which are epitomized in Marie Hartley's painting on the cover. The contents are painstakingly researched and though some of the complicated accounts result in complex sentence structure, the careful reader can follow the meaning. For the serious researcher the sources are well footnoted and placed at the end of the book.

Dales Memories combines successfully many disparate elements. It is yet another triumph for Marie Hartley and Joan Ingilby and demonstrates that the honorary degree recently conferred upon them by York University is well deserved.

C S HALLAS

FRANCESCA BRAY, *The Rice Economies, Technology and Development in Asian Societies*. Blackwell, Oxford, 1986. xvii + 254 pp. 3 maps, 22 figures, 15 tables. £22.50.

Ms Bray's latest book will arouse controversy. It labels 'primitive' Asian historical methodology, dismisses 'Eurocentric models' as inapplicable, and challenges the notion that Asia's rural economies are changeless. The author claims wet-rice cultivation has led to developments unlike those in Europe. However, this work is not a rehash of the hydraulic societies/oriental despotisms hypotheses. Indeed the writer makes plain their weaknesses. Asian socio-economic history is seen as having been shaped by rice's nutritional value, higher yield than other cereals, varietal multiplicity, and water needs. Its domestication resulted in high population densities accompanied by land-saving, labour-using technologies, favouring peasant agriculture. The plant's labour requirements have facilitated the introduction of commercial crops and rural manufacturing but discouraged the emergence of capitalist farming, a rural proletariat or release of workers to urban areas.

Rice-growing processes are explained and the evolution of cultural techniques traced. In antiquity, farmers already practised seed selection, transplanted seedlings, and used shallow ploughs and harrows. Among later pre-modern innovations were simple sowing and weeding machines and commercial fertilizers. Hydraulic technology advanced from exploitation of natural marshes to the construction of bunded fields and artificial ponds, then to tank-fed canal networks, and, finally, to deltaic flood plain systems.

Water control calls for resources unavailable to the cultivator and conflicts over water use necessitate collective management. Examination of past and present government works leads the writer to note their dependence on the cooperation of villagers, whose involvement in planning and decision-making is recommended. Many older projects, however, were initiated by religious bodies, wealthy individuals, and local communities. State schemes, except the deltaic, often merely extended or integrated such undertakings.

Along with intensive rice production developed tenancy. But the skill required of cultivators, it is argued, protected tenants. According to the author, landlords lose power when they become absentees, a proposition which, if substantiated, could illuminate the study of Asian political history.

Bray's concerns extend to the present and the future. She discusses rural–urban income inequalities, western agricultural machinery, group farming and the 'Green Revolution'. Official support for land reform and rural industrialization is urged.

One wishes for a more extended treatment of the many issues raised. European historians might find their area's agricultural development too narrowly described. Large farms, a rural proletariat were less widespread, mechanization and labour-shedding more recent than Bray's Euro-model portrays. Asianists will be grateful for the highlighting of similarities among rice economies. Doubtless, an explanation of the enoromous differences in economic development found in the vast region where rice is the staple would have been even more appreciated. Why, today, is Japan urbanized and industrialized whereas Southeast Asia remains largely rural and agricultural? What accounts for Japan having a capitalist and China a socialist economy? Since the theories the author criticizes seek to treat such matters, these questions cannot be considered irrelevant. Nevertheless, this study, the product of Ms Bray's first-hand experience and wide reading of Chinese, Japanese and European sources, will provide rice economy specialists with several insights and much on which to argue and reflect.

P K HALL

SANDRO ROGARI, *Ruralismo e Anti-industrialismo di Fine Secolo. Neofisiocrazia e Movimento Cooperativo Cattolico*. Le Monnier, Florence, 1984. 272 pp. L20,000.

Agriculturists for many centuries lamented the low levels of productivity of Italian agriculture. Dr Rogari describes the curious, and virtually

unknown, episode of an Italian agronomist who argued, in the 1880s–90s, that scientific methods, in the form of nitrogen induction in the soil, promised limitless increases in productivity, which would result in world-wide economic and social consequences. The author of this old-new agricultural utopia, Stanislao Solari, was a former naval officer, who combined an ingenuous positivist faith in technical progress with an unusually modern vision of a unified world market. He argued that nitrogen induction was not dependent on capital, and that climate alone marked the limits of productivity and hence the optimal choice of crops, from which he deduced (ignoring all other factors of production) that transport costs would thus make American grain uneconomical in Europe. On this somewhat shaky foundation he erected an elaborate superstructure, in which the dangerous and perverse effects of industrialization and urbanization would be checked, competition and conflict over markets for manufactured goods would cease, with a return to the land as the only true source of wealth and the emergence of a natural, climatically-imposed equilibrium of agricultural production, with related but subordinate transformation industries.

Solari's ideas, like those of so many other prophets, would be of little importance, were it not that the nitrogen technology (both through chemical additions and rotations) was experimented and publicized successfully in central and northern Italy, and for a brief period (1896–1906) was adopted by the nascent Catholic political movement as part of its programme to redeem Italian peasantry through agricultural cooperatives. Dr Rogari follows with clarity the troubled relationship between the successive Catholic movements and Solari's extremely sectarian followers, explaining convincingly why and how the latter were increasingly marginalized. But for readers of this journal, the main interest lies in the effective diffusion and application of agronomic ideas, among some lay as well as Catholic circles, which presumably contributed towards the very sharp rise in Italian agricultural productivity which occurred in the first decade of the twentieth century, as well as in Solari's extraordinarily archaic and ahistorical belief, as late as in the 1890s, that agriculture could substitute industry.

STUART WOOLF

KEVIN STARR, *Inventing the Dream: California through the Progressive Era*. OUP, 1985. xi + 380 pp. £21.

Kevin Starr began pursuing the idea of California, what is has meant to Americans and non-Americans alike since its first sighting by white men in the 1540s, in a companion volume, *Americans and the California Dream*, published in 1973. That focused largely on the north of the state and ran up to 1915. The present volume, somewhat despite the subtitle, concentrates on the south and on Los Angeles and its environs in particular, ending in the late 1920s. The author has set himself a prodigious task in attempting to identify the various components of place and culture, idea and reality, myth and function but he does, to a large degree, succeed. It is also true that drive occasionally falls victim to detail and focus to overwide angles, but the work is never dull even at its most discursive.

Starr very rightly begins substantively with the Hispanic rancheros who, despite their fate as non-economic men, their status- rather than their goal-orientation, their Catholicism and their largely racially mixed origins, have come to serve as California's communal ancestors. It is perhaps a pity here that Starr does not investigate the cultural reverberations in the claim in Kenneth Goode's *California's Black Pioneers* that they included Pio Pico, the last Hispanic governor, though Starr might reply that he is pursuing white America's view of the period, one given major definition in Helen Hunt Jackson's *Ramona* in 1884. That sentimental yet so welcomed mixture of pro-Indian, pro-Hispanic, pro-pastoral and anti-entrepreneurial arguments reminds us that it has never been California's role to mirror realities.

This is pointed up in the title of Major Benjamin Truman's 1874 treatise *Semi-Tropical California* which helped introduce the climatic into the composite idea so inaccurately: semi-arid would have been the far better description. Such promotional tracts lead on to the entrepreneurs who had so much to do with selling the idea of southern California in particular, men of the order of Harrison Gray Otis and their writers, pre-eminently Charles Fletcher Lummis. Gray's motives are easily understood: he wished to make money from rising real-estate values. Lummis's drives were more complex, some of them shared and more obvious in the work of Joseph Pomeroy Widney, whose major preoccupation is given by the title of his 1907 work, *Race Life of the Aryan Peoples*. There were many of that generation who saw the West in general as a refuge from the mongrel hordes now sweeping into eastern cities from south-eastern Europe and some saw southern California, as Starr shows, as the new regenerative Aryan paradise. He does not, however, consider the idea which might emerge from a reading of Jackson Lears's *No Place of Grace*, that such boosters were also attracted by the possibilities of a non-industrial, antimodernist society. Antimodernism, as defined by Lears, might explain why a region so heavily populated by midwestern Protestants so easily accepted its Catholic past.

Starr deals in detail with the arts of the region with particular reference to the Arroyo culture. His

descriptions highlight the fact that the work focuses mainly on a middle-class world. There are occasional mentions of ethnic groups but little of the lower classes, something that follows from the largely literary sources used. The full descriptions of the new agriculture, especially of the orange and the grape, do not make it clear who benefited from them if showing how the region did, its image partly fixed forever in the labels on the orange boxes increasingly sent east and abroad with the advent of efficient refrigeration.

No study of what California means to the world could ignore Hollywood and Starr gives that subject two full chapters. These do not quite do the necessary job for they do not establish the form and content of the idea as held from the outside. There is too much of a jump to the chapter on Arthur Page Brown and San Francisco architecture and the two chapters on California Progessivism needed sharper focus, while as the bibliography frankly admits, they do pay very close attention to the work of Richard Hofstadter and George E Mowry who produced their major statements in 1955 and 1958 respectively. At this point readers may feel that they are learning little new and not quite enough about why Progressive political reforms helped refine the California idea.

It would be wrong, however, to end on a negative note. There is much to be admired here; the learning, the breadth of reference, the style and the commitment to the subject are laudable. This is a worthy successor to the companion volume.

R A BURCHELL

Notes on Contributors

N J MAYHEW has been an Assistant Keeper at the Heberden Coin Room in the Ashmolean Museum, Oxford since 1971. In addition to purely numismatic work his special interest lies in the application of numismatic evidence to historical problems. His recent publications include 'Frappes de monnaies et hausse des prix en Angleterre de 1180 à 1220' in *Études D'Histoire Monétaire* ed John Day, Lille, 1984, and he is currently engaged on a study of Scottish Medieval Prices.

DR MADELEINE GRAY is a former archivist who received a PhD in Welsh history from the University of Wales in 1985. She is at present based in Cardiff and works as a freelance cataloguer, researcher and lecturer. She has published several articles on local society and the property market in south-east Wales in the sixteenth and seventeenth centuries and is currently editing the final volume of Sir Joseph Bradney's *History of Monmouthshire* for publication by the South Wales Record Society.

DR GAVIN BOWIE works for the Hampshire County Museum Service, and is currently curator of the new Eastleigh Museum, which opened last year. He has been researching into and lecturing about aspects of modern agricultural history since 1978, mainly in his spare time. He has just completed an assessment of the role and function of watermeadows in the rural economy of Wessex, 1640–1850, and is currently investigating the world of enriching and exciting manures in English agriculture in the first half of the nineteenth century.

DR J PHILLIP DODD is editor of *Cheshire History*. His main research work has been on British agrarian history and he has published several books, the latest being *A History of Frodsham and Helsby*. He is a part-time tutor for the Department of Extension Studies, University of Liverpool. Currently he is working on Reports of the Select Committees on Agricultural Depression in their role as a medium for promoting agricultural protection.

C M ANN BAKER and her husband, PROFESSOR C MANWELL, have been until recently, members of the Department of Zoology, the University of Adelaide. Miss Baker worked for a number of years as an Advisory Officer with MAFF, and most of her research has been concerned with the genetics and evolution of domesticated animals. She is co-author of *Molecular Biology and the Origin of Species*, and an honorary member of the Australian South Devon Cattle Breeders' Association.

DAVID GRIGG has been in the Department of Geography at the University of Sheffield since 1959. His earliest research interests were in English agricultural history and *The Agricultural Revolution in South Lincolnshire* was published in 1966. After some twenty years concerned with other aspects of agricultural change his current interest is again in modern English agricultural history.

Shorter Notices

LAWRENCE STONE, *The Causes of the English Revolution 1529–1642*. Ark, 1986. xv + 185 pp. £3.95.

Lawrence Stone's book, a well-known guide for generations of undergraduates to the upheavals of seventeenth-century England, was first published in 1972. It availed itself of the methods and terminology of the social sciences and conveniently divided its discussion under the headings of presuppositions, preconditions, precipitants and triggers. Equally confident in its handling of the socio-economic aspects of the gentry controversy and the politics of Parliament, it provided a suggestive and challenging guide to the complex related problems of the crisis in early Stuart England. Though described as a second edition the present volume is largely a reprint and is substantially the same book which appeared in 1972; only a supplement of sixteen pages — 'Second thoughts in 1985' — is new. The justification is that 'much of the new work [since the early 1970s] either supported, or at least did not directly contradict, what had been said originally, and that the areas in need of serious modification were relatively small'. Although not fundamentally untrue, a relatively brief appendix hardly provides sufficient space for a proper assessment of the incredibly prolific recent historiography of the English Revolution.

R C RICHARDSON

NIGEL HARVEY, *Historic Farm Buildings Study: Sources of Information*. Ministry of Agriculture, Fisheries and Food, 1985. vii + 76 pp. (Obtainable from Miss Frances Campbell, MAFF, Farm Buildings Group, Great Westminster House, Horseferry Road, London, SW1P 2AE.) £5 incl p & p.

The value of standing farm buildings as evidence for agricultural history is being increasingly recognized as the buildings themselves fall increasingly under threat from obsolescence followed by demolition. There has been a feeling that official policies favoured demolition without thought of the consequences for agricultural history let alone for the preservation of the agricultural heritage. Now the Ministry of Agriculture, Fisheries and Food has recognized that the work of its Agricultural Development and Advisory Service should include some acknowledgement of the 'historical content' of farm buildings and has commissioned this study by Nigel Harvey to help its officials.

Mr Harvey's enquiries have revealed the existence of a substantial amount of information in published or report form on historic farm buildings and a large number of organizations and individuals engaged in their study. Inevitably some errors have crept in and some omissions been made: for instance the first specialized conference on historic farm buildings was the meeting of the Vernacular Group in December 1966; the meeting of December 1977 was the second; the first systematic survey of historic farm buildings, that of D C G Davies submitted as a thesis in 1952, might have been mentioned; and the work of English Heritage includes much more than listing and maintenance of properties in care, for that body provides grant aid for the repair of many historic farm buildings whether ancient monuments or historic buildings. However, corrections and additions are invited and we can expect that successive editions of this valuable report will become even more comprehensive.

The report is more than a bald collection of facts and lists; it includes pertinent comments and snippets of fascinating information as well as thoughtful recommendations. All students of agricultural history through the medium of farm buildings stand in debt to Nigel Harvey for his efforts and MAFF for its sponsorship.

R W BRUNSKILL

G E MINGAY (ed), *The Victorian Countryside*. Routledge & Kegan Paul, 1986. Vol 1, xvi + 363 pp; 48 plates, £10.95; Vol 2, ix + 335 pp; 50 plates, £10.95.

This is an unabridged paperback edition of the two large volumes on the Victorian countryside that appeared first in hardback in 1981. The considerable reduction in price over the original should bring this collection within the price range of a number of readers who until now have had to resort to their local libraries whenever they needed to refer to it. The size and coverage of this work, with its forty contributors and forty-six chapters, encompassing all aspects of Victorian rural Britain from 'The Model Village' to 'Rural Crime and Protest', and 'Agriculture and Science' to 'Landscape in Nineteenth Century Literature', already ensure that it has a wide readership. The individual chapters are conveniently grouped into five sections which cover 'The Land', 'Agriculture and the Countryside', 'Country Towns and Industries', 'Landed Society', and 'Labouring Life'. Besides being a source of reference, these sections permit the reader a wider view of particular themes. They allow the major topics to be followed, if not in every aspect, then at least in their most important features. The fact that the sections contain between six and thirteen chapters provides the reader with a number of different perspectives for each one. There are also

three chapters that deal specifically with the issues that were of special concern for Wales, Scotland and Ireland. The standard of all sections and chapters is high, and as they are written to appeal to the layman as well as the expert this should also commend the volumes to a wide readership.

RICHARD PERREN

NOEL NEWMAN, *Recollections of seventy years' farming in Bottisham*. Staine Hundred Local History Society, 1986. 27 pp. Illus. £1 (+ £0.25 p & p).

This short tract, written by a farmer who started work on a Cambridgeshire farm just prior to the First World War, gives some interesting insights into the practical aspects of farming rotations in the Bottisham area early this century. It concentrates on the four-course system incorporating sheep folding most common in the vicinity. The text is supported by some very good photographs of subjects not frequently recorded. The style, however, is extremely brief, and is tantalizing for all that is left unsaid. Additionally, over half the work is devoted to farming practices at the turn of the century, with the vast changes effected since then, including the introduction of the tractor, being given in outline only. In all, an interesting work that could have done with much expansion and a little more organization.

ANNIE HOOD

H ST G CRAMP, *A Yeoman Farmer's Son*. Oxford Paperbacks, 1986. 182 pp. £4.95.

When this book was first published as a hardback in 1985 it was acclaimed as a sequel to *Lark Rise*. While it is not quite in the same class there are similarities. Essentially the account is a catalogue of Harold St George Cramp's memories of growing up as a yeoman farmer's son and of the village community which formed his environment between the First World War and 1930. The book supports those agricultural historians who hold that the yeoman farmer survived and, in some cases, thrived into the present century. Some interesting details of farming practice are given; the continuing existence of the barter system, the relationship between yeoman seller and dealer buyer, the use of luck money, and the importance of the milk cheque are all graphically described. Both the thrift and the opportunism of the yeoman farmer are highlighted. One of the main impacts of the book is the underlying optimism despite the frequent voicing of despair by Yeoman Cramp. As his son explains, 'Farmers have a perverse philosophy: trouble or its prospect make delightful conversation when you know that you're basically safe.'

The author seeks to make the book a literary as well as an historical work. Washday meant that the orchard 'looked as if the mainmast of a full-rigged sailing ship had collapsed across it', and there are some memorable phrases: 'The Great War scratched at our calm for a time.' Repetition occurs in several places and by the end of the account this becomes irritating.

Generally the book is easy to read and may well achieve popularity. For the agricultural historian, however, it provides no new insights and will take its place with the increasing number of anecdotal accounts of our recent rural past.

C S HALLAS

E CSIZMADIA and M SZÉKELY, *Food Economy in Hungary*. Akadémiai Kiadó, Budapest, 1986. 218 pp. £12.50.

It has to be said that this book is something of a struggle. It is a struggle primarily, and most regrettably, because of the translation, which is not by a native English speaker and is often impenetrable and peppered with interesting and occasionally amusing neologisms. It is further marred by some unnecessary exposition of Marxist-Leninist theory and a generally pedestrian style.

This said, for those interested in Hungarian agriculture, the struggle is worth it. The book contains a wealth of statistical material about Hungarian agricultural performance and a thorough presentation of the financial regulators governing state and cooperative farms. There is also a full discussion of issues such as the role of small-scale family farms, the efficacy of farm partnerships and joint ventures, 'technically-oriented production systems', pricing policy, vertical integration, and the pattern of state procurement. The book certainly does not belittle Hungary's achievements, but neither does it ignore its failures. The discussion of farm efficiency and productivity is particularly telling.

The publishers claim that the book will be of interest to a wider audience of Third World readers, yet the book is weakest at explaining which policy factors led to Hungary's agricultural success. A straightforward historical account such as Ferenc Donáth's *Reform and Revolution* (Budapest, 1980) is more suited to this purpose. Nevertheless, as a complete and up-to-date English language source book on the state of Hungarian agriculture in the mid 1980s, Csizmadia and Székely's book is excellent.

NIGEL SWAIN

Notes and Comments

ANNUAL CONFERENCE AND AGM, 1987

The Spring Conference paid its first visit to Northern Ireland and was held at the Northern Counties Hotel, Portrush from 6–8 April 1987. Most of the papers had an Irish theme. Dr D Dickson spoke on the evolution of the cattle fair in Ireland, 1600–1900; Mr J Burtchael discussed Waterford merchants and landed investment in eighteenth-century Ireland; while Mr T Power dealt with landownership and the landed class in eighteenth-century Tipperary. Professor J Lee gave a more general paper on agriculture and development. Three more diverse papers were given on Wednesday: Dr T M Devine on the potato famine in the Scottish Highlands, 1846–50; Professor G L Cunningham on the early history of English allotment gardens; and Dr C Thomas on land reform and colonization in Yugoslavia 1919–39. A most successful excursion to North Antrim was led by Dr Jonathan Bell.

The 35th AGM was held on 7 April 1987. Professor Mingay was re-elected President of the Society, Dr Collins re-elected as Treasurer, and Dr Overton re-elected as Secretary. Dr Chartres was re-appointed as Editor of the *Review*. The meeting expressed thanks to Dr Dennis Baker who retired from the Executive Committee thus leaving five vacancies to be filled. Following a ballot, Dr P Dewey, Dr H S A Fox, Mrs C S Hallas, Dr D Howell, and Dr R Perren were elected to the Executive Committee.

The Chairman of the Executive Committee, Dr Hey, presented the Committee's report. Membership of the Society stood at 908, a net increase of 31 members over the year during which 43 new members joined the Society. The Treasurer presented the audited accounts of the Society which indicated that expenditure was in excess of income so that reserves were being depleted. The Executive Committee would therefore be considering the possibility of a subscription increase at its September meeting. Dr Chartres reported that Volume 34 (1986) of the *Review* was the largest yet produced at 236 pages. The flow of articles was generally satisfactory with the exception of material on the seventeenth and eighteenth centuries and the index to the *Review* should be published in 1988.

At the conclusion to the meeting thanks were expressed to Professor P Roebuck for organizing a most successful conference.

WINTER CONFERENCE, 1987

Booking forms for the 1987 Winter Conference to be held jointly with the Historical Geography Research Group of the Institute of British Geographers on 5 December 1987 at the Institute of Historical Research, Senate House, Malet Street, London WC1E 7HU, should be inserted in this issue of the *Review*. The theme of the conference is 'Agriculture in Wartime'.

SPRING CONFERENCE, 1988

The Society's Spring Conference will be held at Plaxtole House, Kings Lynn, Norfolk, from Wednesday 6 to Friday 8 April 1988. Note that this year the conference will be held before the Economic History Conference and will take place from a Wednesday to a Friday instead of the usual Monday to Wednesday. Full details and booking forms should be circulated with the next issue of the *Review*.

BACK NUMBERS OF THE *REVIEW*

Members will be aware that not all past issues of the *Review* remain in print, although many are available through the Treasurer of the Society. One member, Professor Lord McGregor of Durris, finds that one copy is missing from his set, and seeks a replacement for Volume 9 part II (1963). Members wishing to dispose of back numbers, and any who might be able to supply the specific issue referred to above, should contact the Treasurer.

PROFESSOR W H CHALONER

It is with great sadness that we note the death on 25 May 1987 at the age of seventy-three of Professor W H Chaloner, former President of the Society and Chairman of the Executive Committee. He served on the Executive Committee of the Society for more than twenty-five years, and as President will long be remembered for his distinctively droll after-dinner remarks at the Spring Conference annual dinner of the Society. With his death the Society loses a very valued member.

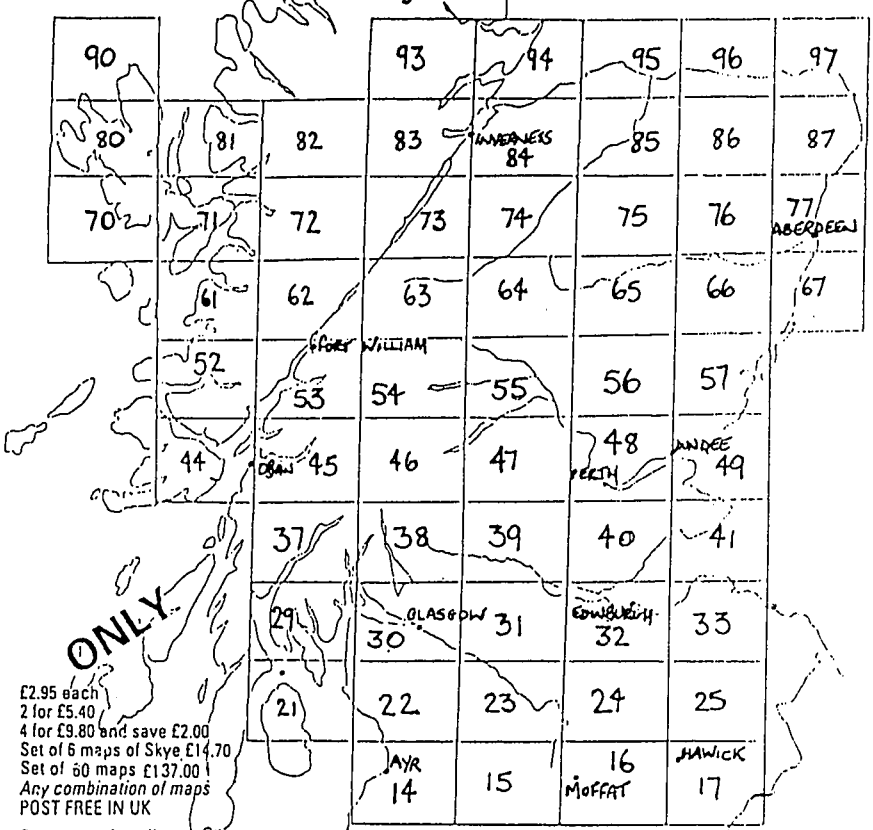
ROTHAMSTED EXPERIMENTAL STATION ARCHIVES

The library of the Rothamsted Experimental Station has recently been catalogued with the support of a grant from the Leverhulme Trust. The archives of nineteenth- and twentieth-century material consist principally of items relating to Sir John Bennet Lawes, mainly working notebooks and correspondence, and the large series of working records of Sir Henry Gilbert. The nineteenth-century archives have been untouched since the early years of this century, and copies of the catalogue, together with details on access to the records, are available from the Librarian. The unbound catalogue is available, price £10, from the Librarian, Rothamsted Experimental Station, Harpenden, Herts, AL5 2JQ.

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THE BRITISH AGRICULTURAL HISTORY SOCIETY

Articles and correspondence relating to editorial matter for the *Agricultural History Review*, and books for review, should be sent to Dr J A Chartres, Editor, *Agricultural History Review*, School of Economic Studies, The University, Leeds LS2 9JT.

Correspondence about conferences and meetings of the Society, and about more general matters, should be sent to Dr M Overton, Secretary BAHS, Department of Geography, The University, Newcastle upon Tyne, NE1 7RU.

Correspondence on matters relating to membership, subscriptions, details of change of address, sale of publications, and exchange publications should be addressed to E J T Collins, Treasurer, BAHS, Museum of English Rural Life, The University, Whiteknights, Reading, Berkshire.

Correspondence on advertising should be sent to Dr R Perren, Department of Economic History, University of Aberdeen, Aberdeen AB9 2TY.

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Contributions and letters on any aspects of the history of agriculture and rural society and economy should be sent to the Editor. Articles should not normally exceed 8000 words in length, but, very exceptionally, manuscripts of up to 15,000 words can be considered. Proposals for Supplements, of length intermediate between the long article and the book, normally not exceeding 30,000 words, should also be sent to the Editor. Intending contributors are advised first to obtain a copy of the *Review*'s 'Notes for Authors and Reviewers' from the Editor. The Society does not accept responsibility for the opinions expressed by contributors, or for the accidental loss of manuscripts, or for their return if they are not accompanied by a stamped addressed envelope.

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