

# *The* AGRICULTURAL HISTORY REVIEW



VOLUME 23 1975

PART I

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## FARMING IN THE NINETEENTH CENTURY

Tenure, Tenant Right, and Agricultural Progress in Lindsey, 1780-1850

J. A. PERKINS

The Development of Market Gardening in Bedfordshire 1799-1939

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Annual List and Brief Review of Articles on Agrarian History

DAVID HEY

PUBLISHED BY  
**THE BRITISH AGRICULTURAL HISTORY SOCIETY**

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# Tenure, Tenant Right, and Agricultural Progress in Lindsey, 1780-1850

By J. A. PERKINS

## I

IT is a commonplace of contemporary accounts of farming in Britain during the Agricultural Revolution of the later eighteenth and nineteenth centuries, and until quite recently of historical studies of that transformation, "that one of the major instruments of agrarian change was the long lease."<sup>1</sup> In describing one particularly badly cultivated part of Lindsey in the late 1790's, Arthur Young went so far as to state that "here are no leases, and therefore can be few or no effective improvements."<sup>2</sup> Another East Anglian writer who surveyed the state of farming in Lincolnshire in the 1790's for the Board of Agriculture similarly concluded that: "The only means of exciting a general spirit for improvement, would be, by granting leases."<sup>3</sup> The coincidence of long leases and progressive agricultural regions such as Norfolk and East Lothian did much to impress upon the minds of contemporaries the necessity of the former for the existence of the latter.<sup>4</sup> More germane to the subject of this essay, it has recently been stated that the absence of leases in southern Lincolnshire in the later eighteenth and early nineteenth centuries "was an important factor in explaining the backwardness of South Lincolnshire, particularly in comparison with the neighbouring county of Norfolk."<sup>5</sup>

Leases, of course, varied considerably in the length of their duration and, consequently, in their assumed efficacy as an instrument of agricultural progress. The period of time for a lease that was most favoured by agricultural writers and farmers was twenty-one years. As a Scottish professor of agriculture commented in the 1860's:

It seems to be generally admitted, that twenty-one years is the proper duration for an agricultural lease. Such a term suffices to give confidence to the tenant in embarking his capital, and secures to the landlord his legitimate control over his property, and due participation in its varying value.<sup>6</sup>

However, even leases of shorter duration, such as the common periods of seven and fourteen years, provided the tenant with a certainty of tenure and a fixed rental that

<sup>1</sup> R. A. C. Parker, 'Coke of Norfolk and the Agrarian Revolution', *Econ. Hist. Rev.*, 2nd ser., VIII, no. 2, 1955, p. 159; Lord Ernle, *English Farming: Past and Present*, 6th edn, 1961, pp. 200, 275, 325.

<sup>2</sup> A. Young, *General View of the Agriculture of the County of Lincoln*, 2nd edn, 1808, p. 13.

<sup>3</sup> T. Stone, *General View of the Agriculture of the County of Lincoln*, 1794, p. 96.

<sup>4</sup> The French agronomist L. de Lavergne was an early critic of this supposed correlation—Cf. *The Rural Economy of England, Scotland, and Ireland*, 1855, p. 110.

<sup>5</sup> D. B. Grigg, *The Agricultural Revolution in South Lincolnshire*, Cambridge, 1966, p. 62.

<sup>6</sup> J. Wilson, *British Farming*, Edinburgh, 1862, p. 542.

was at least superficially lacking in the widespread system of holding land from year to year.

In contrast to the long lease and at the other extreme of duration of tenure was tenancy-at-will, or the occupation of a farm on a year-to-year basis with usually six months' notice to quit given by either side to the tenancy agreement. This was generally considered to be "a mode of occupancy. . . most insecure for the protection of a spirited agriculturalist, and unfavourable to the promotion of extensive improvements."<sup>1</sup> As William Thornton observed in 1846, a tenant-at-will was "seldom silly enough, by expensive improvements to run the risk of having his rent raised, or of being ousted to make way for a higher bidder."<sup>2</sup> Sir James Caird, the doyen of Victorian writers on agriculture, was similarly of the opinion that "It is in the nature of yearly tenancy that there should be insecurity," and "it is vain to look for enterprise and progress where there is no real security." "How," Caird asked, "can a man subject to a year's notice be expected to improve?"<sup>3</sup>

In the later eighteenth century, at a time of rising prices for cereals to near-famine levels on occasions, long leases were seen as being pre-eminently necessary to encourage tenants to undertake the long-term investments required to bring poor grazing lands permanently under the plough.

Upon soils so rich that there is nothing to do, the want of them cannot be material; but upon all others, where liming, marling, draining, fencing, &c. are demanded, the want of a lease will often be the want of improvement.<sup>4</sup>

In the recent survey of British agriculture between 1750 and 1880 by the late Professor Chambers and Professor Mingay, although comparatively little importance is attached to the long lease as a stimulus to agricultural progress in general,<sup>5</sup> it is accorded a tentative role "in encouraging farmers to undertake the risks of cultivating newly enclosed waste lands by guaranteeing them low rents in the early years of tenancy."<sup>6</sup> In the 1840's this view was put forward most emphatically by John Grey when surveying the improvement of agriculture on the poor light soils of his native Northumberland over the previous hundred years. In his opinion, "Without the security and inducement to expend capital, which leases afford to tenants, such a rapid change . . . could never have been effected."<sup>7</sup> To which he added his belief that to "the custom of letting land on long leases, more than to any other cause . . . this county is indebted for its rapid improvement and high state of cultivation."<sup>8</sup>

<sup>1</sup> *British Husbandry; exhibiting the Farming Practice of Various Parts of the United Kingdom*, 3 vols., 1834-40, III, p. 130.

<sup>2</sup> W. T. Thornton, *Over-Population and its Remedy*, 1846, p. 293.

<sup>3</sup> J. Caird, 'General View of British Agriculture', *J.R.A.S.E.*, 2nd ser., XIV, 1878, p. 318.

<sup>4</sup> *Hull Advertiser*, 16 Feb. 1799.

<sup>5</sup> J. D. Chambers and G. E. Mingay, *The Agricultural Revolution 1750-1880*, 1966, pp. 46, 165-6.

<sup>6</sup> *Ibid.*, p. 48.

<sup>7</sup> J. Grey, 'A View of the past and present State of Agriculture in Northumberland', *J.R.A.S.E.*, II, 1841, p. 158.

<sup>8</sup> *Ibid.*, p. 157.

Contrary to the opinion of advocates of leases, the thesis of a cause-effect relationship between the long lease and agricultural progress does not appear to accord with the facts of agricultural history during the later eighteenth and nineteenth centuries. From the end of the eighteenth century onwards, when the pace of advance in agriculture generally, and the rate of conversion of waste lands to permanent tillage in particular, were perhaps more rapid than during any previous period of history, the lease was increasingly replaced by tenancy-at-will to the extent that by 1850 the former was "the exception throughout England."<sup>1</sup> Some observers explained this contradiction of their tenets in terms of factors extraneous to the development of farming techniques. Thus, to G. C. Brodrick the initial reason for the decline of leasehold during the war period was

The extraordinary rise of agricultural prices during the Great War [with France, which] rendered most landlords unwilling to part with the immediate control of their properties, except at an exorbitant rent. On the other hand, the extraordinary fluctuation of these prices may well have deterred prudent tenants from "hanging a lease round their necks," as the saying is, and undertaking to pay an exorbitant rent for a long term of years.<sup>2</sup>

As regards the reason given by Brodrick for a decline in the popularity of leases amongst tenants, it may be true that the wholesale prices of foodstuffs fluctuated to a greater extent during the war period than before or subsequently. However, such fluctuations were about a distinctly rising trend of prices that tended to erode the real value of the fixed money rents derived from long leases.

Many leaseholders were undoubtedly badly hit by the catastrophic fall of agricultural prices in the middle of the second decade of the nineteenth century. In "an evil hour" shortly before the collapse, for instance, the lawyer father of Anthony Trollope took a farm "on a long lease from Lord Northwick."<sup>3</sup> According to the novelist, "That farm was the grave of my father's hopes, ambitions, and prosperity, the cause of my mother's sufferings, and those of her children, and perhaps the director of her destiny and ours."<sup>4</sup> Such an experience, which was comparatively widespread, may have made farmers more wary of long leases. But the main effect was to remove from farming those amateurs who had been attracted into the industry by the high prices and profits of war time.

Once agricultural prices had established themselves at a lower and more stable level after 1815, a revival in the popularity of the long lease might have been expected to materialize. The fact that this did not occur has been ascribed to non-economic forces. The "Chandos Clause" of the 1832 Reform Act, by giving the vote to tenants paying £50 and above in annual rent for their farms, was commonly supposed to have encouraged the adoption of tenancy-at-will by landowners to ensure

<sup>1</sup> J. Caird, *English Agriculture in 1850-51*, 2nd edn, 1968, p. 481; F. M. L. Thompson, *English Landed Society in the Nineteenth Century*, 1963, pp. 230-1.

<sup>2</sup> G. C. Brodrick, *English Land and English Landlords*, 1881, p. 205.

<sup>3</sup> Anthony Trollope, *An Autobiography*, 2nd edn, 1950, p. 2. <sup>4</sup> *Ibid.*

their control over the political allegiance of tenants.<sup>1</sup> To Caird the clause was a mixed blessing to the tenant in that it

strengthened their hold on the consideration of their landlord, but at the same time gave him an unfortunate interest in the continuation of a system [i.e. tenancy-at-will] which kept him dependent on his will.<sup>2</sup>

The rising predilection of estate owners for the preservation of game also stimulated the spread of tenancy-at-will, at least according to Brodrick, because under that system of tenure the occupier who interfered with the game could be more easily removed than a leaseholder.<sup>3</sup>

While market forces, and the desire of landlords for political dominion and game preservation may have contributed to the decline of the long lease, it would appear that other more fundamental causes were involved to bring about the replacement of one system of tenure that was supposedly necessary for agricultural improvement by another that was supposedly detrimental to such a purpose. In this respect it is arguable that the long lease was both inapplicable and unnecessary in the conditions of farming that obtained in the later eighteenth and nineteenth centuries. In short, it may be said, firstly, that the long lease was more suited to periods of relative stability in agricultural prices, profitability, and techniques, than to those of fluctuating prices, secularly rising profitability of farming, and rapid agricultural change; and secondly, that the main attributes of the long lease, namely security of tenure and pecuniary reward for improvement, were better provided for under the system of tenancy-at-will by the normal relationship existing between landlord and tenant, and by the development of tenant right systems to compensate the out-going tenant for unexhausted improvements.

## II

An important advantage of tenancy-at-will in comparison to long leases arose from the greater degree of control that it gave to the landlord, not only over the level of rent and the political opinions of his tenants but also over the disposal of his land. This was especially important during the late eighteenth and nineteenth centuries when agricultural techniques and farming systems were subject to comparatively rapid change that altered the optimum acreage of farms, generally speaking towards ever larger individual units, and the optimum proportions of pasture and arable land on mixed farms. Whereas a lease system precluded the landlord from rearranging the lands of a farm during the life of a lease, and complicated such a process where the terminal dates of leases overlapped extensively, tenancy-at-will facilitated a constant process of adjustment in the sizes of individual farms and in the balance of types of land on the farms in accordance with changing techniques. The advantage of tenancy-at-will in this respect should not, of course, be exaggerated, for under all systems of tenure the acreage of individual farms remained

<sup>1</sup> Brodrick, *op cit.*

<sup>2</sup> Caird, 'General View . . . Agriculture', *loc. cit.*, p. 305.

<sup>3</sup> Brodrick, *op cit.*, p. 206.

the most fixed of all inputs.<sup>1</sup> However, it would appear that yearly tenure in Lindsey, at least, co-existed with a pace of change in the size of farms that was comparatively rapid.<sup>2</sup> In 1787, to take one example, the 2,200 acres of land in the parish of Beelsby on the Wolds were divided between four farms of over 300 acres each, four small farms of between 10 and 40 acres each, and eight small holdings of from 3 to 9 acres each, which shared with two other cottages without land in the exploitation of the 70 acres of the "Cottagers Pasture." Thirty years later, the whole parish was divided into two large farms of 1,086 and 1,080 acres respectively.<sup>3</sup>

During the first half of the nineteenth century, as a consequence of rapidly increasing productivity, the value of much agricultural land (such as that of the uplands of Lindsey) continued to increase despite the decline in the price of agricultural produce after 1815. Therefore, the value of a rental income fixed by a long lease at the current market value tended quickly to deteriorate, both before and after 1815. The 261 acres of Owersby Moor farm on the Lindsey wolds, for example, were leased in 1815 for twenty-one years for the rental of £52 10s. per annum.<sup>4</sup> By 1836, and to the detriment of the landlord, the annual value of the land was approximately 25s. per acre. Whilst the landlord experienced a loss in such cases, it is possible if not most probable that a rise in the value of a farm in terms of its produce to a certain level above the rental might act to discourage the tenant from further efforts to increase the productiveness of the soil. In the jargon of neo-classical economics, the marginal utility of possible additional income might be sacrificed to the disutility of effort involved in acquiring it. In this connection Young, Caird, and others advocated high rents as a spur to agricultural improvement by tenants. "In no part of England, where rents are low is there good husbandry," Young asserted on one occasion; and he added that "the man who doubles his rental benefits the State more than himself."<sup>5</sup> However, Young failed to see that in a changing agricultural situation his advocacy of both long leases and high rents was a mutually exclusive policy.

The lease appears most applicable to a farming situation in which the variables of prices, costs, and techniques are unchanging, or one that is unknown in a perfect state beyond the confines of a textbook, but which more closely approximates to the experience of the first half of the eighteenth century than to that of the subsequent period. Only under such stationary conditions would a farmer be in a position to bargain for a farm to be held over a lengthy period of time with any degree of accuracy of knowledge, and the landlord be equitably rewarded for relinquishing control over his property. Otherwise, as in most actual situations, the lease sys-

<sup>1</sup> See G. E. Mingay, 'The Size of Farms in the Eighteenth Century', *Econ. Hist. Rev.*, 2nd ser., XIV, no. 3, 1962, p. 470; *Scale of Enterprise in Farming*, H.M.S.O., 1961, p. 2.

<sup>2</sup> For evidence of quite dramatic changes in the size of farms in the Lindsey Marshland within a few years of the eighteenth century see M. W. Barley and P. E. Rossell, 'Notes on the Agrarian History of Owersby and Burgh le Marsh', *Lincs. Historian*, 1953.

<sup>3</sup> A. C. Sinclair, *A History of Beelsby*, 1947, pp. 58-61.

<sup>4</sup> *Lincoln, Rutland, and Stamford Mercury* (hereafter *L.R.S.M.*), 16 Nov. 1832.

<sup>5</sup> A. Young, *A Six Months' Tour Through The North of England*, 2nd edn, 1771, IV, 344-5. See also Caird, *English Agriculture*, p. 477.

tem encouraged speculative farming, which is not to be equated with good farming. The lease system further tends to assume the existence of soils that might be continuously brought back to a peak of fertility after exhaustion in the closing years of each lease. As one nineteenth-century advocate of leases admitted: "The first years of a lease are usually characterized by an energetic performance of various improvements, whereas, towards its close, there is such a withdrawing even of ordinary outlay, as is unfavourable to the interests of either landlord or tenant."<sup>1</sup> Where the tenant was not guaranteed a renewal of the lease on favourable terms, even covenants, unless strictly enforced by a resident land agent, could not eradicate such malpractice. And poor soils that were carefully brought to yield profitable crops of cereals in the later eighteenth and nineteenth centuries, such as those of the wolds of Lindsey and the East Riding, could not withstand this kind of treatment without it resulting in permanent damage to the soil structure.

### III

The farming of Lindsey in this period, and particularly that on the uplands of the wolds and the Cliff, offers convincing proof that significant agricultural progress was possible without long leases. The overwhelming majority of Lindsey tenants held their farms on a yearly tenancy, usually terminable upon six months' notice being given by either party. The majority of tenancies were divided between "the house, buildings, and homelands" which were all held by the year from May-day, and the remainder of the farm that was held from Lady-day. The origin of this division appears to have been that while it was necessary for the incoming tenant to have access to the land destined for the cultivation of spring corn before April, it was "inconvenient . . . to move families till the roads are good," or until later in the spring.<sup>2</sup> Once established, the customary procedure for changes of tenants was continued despite improvements in communications and changes in farming systems.

Leases were usually granted in Lindsey for the occupancy of four particular types of property, none of which were noticeably in the forefront of agricultural progress. Firstly, long leases were common on the outlying farms belonging to large landowners whose main estate and residence were located outside the district, and which were therefore incapable of being properly superintended by the owner's agent. An example of this type was the entire parish of Witchall on the Wolds, the property of Lord Willoughby d'Eresby whose family seat and main estate was in Kesteven, which was occupied as a single farm on a long lease. Secondly, the property of institutional landowners, such as "the Charterhouse of London," the dean and chapter of Lincoln Cathedral, and the Oxford and Cambridge colleges, was usually let on leases.<sup>3</sup> A farm at Wrawby belonging to Clare Hall, Cambridge, was let on a lease of twenty-two years in 1818, and the lands of the dean and chapter of Lincoln cathedral were commonly leased for the duration of from one to three

<sup>1</sup> Wilson, *op cit.*, p. 541.

<sup>2</sup> *Essays on Agriculture: occasioned by reading Mr Stone's Report on the Present State of that Science in the County of Lincoln*, 1796, p. 59; Lincolnshire Archives Office (hereafter L.A.O.), Haigh Deposit, 5/1/9.

<sup>3</sup> L.A.O., Monson Deposit (Mon.), 25/13/10/3/73.

lives.<sup>1</sup> Thirdly, the single farms of small landowners were usually leased for various terms of years. These properties, such as a farm of 300 acres at Muckton let on a lease of fourteen years in 1829, and one of 111 acres at Ulceby let for a term of sixteen years in 1830, were often advertised in the county press.<sup>2</sup> The final type of leased farm property in Lindsey consisted of glebe farms or lands allotted in lieu of vicarial tithes. A farm of 194 acres at Horsington, for example, was let in 1840 for a term of seven years, providing that "the present Rector of Horsington shall so long hold the Living."<sup>3</sup> A very large proportion of the land on the Lindsey wolds and Cliff, however, was consolidated into estates ranging from 1,000 to over 50,000 acres in size, on which the owners were resident or which warranted the employment of an agent to supervise the farming of the tenantry. On these properties tenancy-at-will was the prevailing mode of occupancy.

The most serious and often repeated objection levelled at tenancy-at-will, that it tended to discourage tenants from investing in the long-term improvement of their farms, obviously did not apply in Lindsey. On the uplands of that county from the later eighteenth century onwards, farmers occupying land on yearly tenure showed themselves willing to invest initial amounts that were the equivalent of twenty or more times the unimproved value of the land, in order to convert the poor soils occupied as rabbit warrens or sheepwalks to permanent tillage. Thereafter, to maintain the fertility of the soil that was expensively created by chalk-marling, at a cost of over £3 per acre on land often worth less than 5s. a year in its unimproved state, the tenants were called upon to expend large amounts annually upon bone dust and upon oilcake for feeding cattle and sheep. The efficacy of these outlays was not exhausted or their cost recovered within the period of tenancy. In many cases, the tenants were also responsible for the labour required to drain land, with tiles that were not always provided by the landlord, and for the construction of farm buildings and fences. One farmer on Lord Monson's estate on the Lindsey Cliff expended over £1,500 on erecting farm buildings and in purchasing drainage tiles for his farm.<sup>4</sup>

Apart from the heavy investment made by yearly tenants in Lindsey in their farms, it is also difficult to conceptualize the possibility of the pace of improvement in Lindsey upland farming being accelerated further by the provision of long leases to tenants. Within a comparatively short period of time, from the 1790's to the 1830's, the Cliff and the wolds were transformed from a "wilderness" of poor grazing land, large tracts of which were occupied by sheepwalks and rabbit warrens, into one of the premier districts of mixed farming in Britain. According to Caird, who was generally unimpressed by the few examples of upland farming that he saw on his brief tour in 1850: "The agricultural reputation of Lincolnshire is due more to the stride it has made in a given time, than to any pre-eminence above the best farmed counties."<sup>5</sup>

That the tenants of farms on the Lindsey wolds and Cliff were willing to invest

<sup>1</sup> L.R.S.M., 25 July 1845.

<sup>2</sup> L.R.S.M., 20 March 1829, 26 Feb. 1830.

<sup>3</sup> L.R.S.M., 18 Sept. 1840.

<sup>4</sup> L.A.O., Mon., 25/13/10/3/16.

<sup>5</sup> *English Agriculture*, p. 193.

heavily in raising the long-term fertility of the farms they occupied as tenants-at-will, is essentially to be ascribed to two factors. Firstly, to the tenants' "great confidence" in their landlords permitting them to reap the profits of their outlays, which was backed up by a general shortage of efficient tenant farmers with the capital resources for mixed farming on light soils. And, secondly, to the development of an elaborate system of tenant right, or compensatory payments to outgoing tenants for the unexhausted portion of the improvements made to their farms, which was known as the "Lincolnshire Custom."<sup>1</sup> Together, landlord-tenant relations in Lindsey and the "Lincolnshire Custom" precluded the necessity for leases to give security of tenure and provided a superior form of occupancy for the stimulation of agricultural progress.

In 1840 Philip Pusey ascribed the willingness of tenants-at-will in Lindsey to invest heavily in their farms to the "well-merited confidence in the owner's of estates, such as the Earl of Yarborough." On the Yarborough estate of 55,000 acres in north-eastern Lindsey, in particular, "the farm, though on a yearly tenure, passes, almost as a matter of course, from father to son."<sup>2</sup> The hereditary nature of tenancy is demonstrated by the surnames of the puppy walkers of the Brocklesby Hunt (which was largely composed of Yarborough tenants under his lordship as M.F.H.), recorded for the first time in 1754, which included the names of many families still occupying farms on the estate in the 1880's.<sup>3</sup> Lawson Holmes of Cadney, "a highly respectable farmer under the Earl of Yarborough", who died in 1843 at the age of fifty-four, was "the lineal descendant of the oldest family among his lordship's tenantry. It having been under the House of Brocklesby for nearly 300 years."<sup>4</sup>

On the estate of Lord Monson on the Lindsey Cliff the farms were similarly occupied by virtually hereditary tenants, although in one exceptional case in 1852 his lordship was moved to state that: "The principle we adopt and always shall do so is to select the succeeding Tenant by his own personal merits and by nothing else, if by descent he has been connected with the Farm it will be a point in his favour and nothing more."<sup>5</sup> However, the usual result of the application of this "principle" was such as to satisfy the Monson tenant who said: "Ever since I have been your Lordship's tenant I have farmed with the impression that I have obtained a home for life, and some part of my family after me."<sup>6</sup> According to John Parkinson, an agent for property in both Lincolnshire and Nottinghamshire, "for many years" before 1850 the former county was "remarkable" for the frequency with which sons succeeded their fathers as tenants; "and this is the reason why no leases are wanted or expected."<sup>7</sup>

As a result of the comparative backwardness and isolation of Lindsey before the

<sup>1</sup> See D. B. Grigg, 'The Development of Tenant Right in South Lincolnshire', *Lincs. Historian*, 1962; C. S. Orwin, 'The History of Tenant Right', *Agricultural Progress*, xv, 3, 1938.

<sup>2</sup> P. Pusey, 'On the Agricultural Improvements of Lincolnshire', *J.R.A.S.E.*, iv, 1843, p. 299.

<sup>3</sup> G. Collins, *Farming and Fox-Hunting*, n.d., p. 17. <sup>4</sup> *L.R.S.M.*, 3 Nov. 1843.

<sup>5</sup> *L.A.O.*, Mon., 25/13/10/10/34. <sup>6</sup> *L.A.O.*, Mon., 25/13/10/3/33.

<sup>7</sup> Select Committee on Agricultural Customs, B.P.P. 1847-8, vii, p. 409.

later eighteenth century, a relationship between landlord and tenant that was more feudal than akin to the contractual relationship of a purely capitalist agriculture was prolonged into the subsequent period of improvement and close integration into the national economy. Of landlord-tenant relations generally in Britain, it could be said as late as the 1830's that: "So much of the feudal system yet remains among the higher ranks of society . . . that it would be considered discreditable to turn off an old tenant from an estate, unless misconduct, or absolute necessity, compelled a change."<sup>1</sup> In Lindsey, particularly, such "feudal" relationships were stronger and lingered longer than in most other parts of England and tenants were, or so it was claimed, "never changed unless they die, or become unfortunate in business, or without there is gross neglect."<sup>2</sup>

The coming of age of the owners of estates in Lindsey continued in the nineteenth century to be occasions for extended celebrations in which the hierarchical nature of traditional rural society was reflected, and in which the special position of the relatively new class of large tenant farmers was emphasized. The tenantry of Lord Monson celebrated his coming of age on 3 February 1830, when the occupiers of the larger farms dined at Burton Hall while, "in one of the kitchens a considerable body of cottagers, and the inferior tenantry, labourers, &c., enjoyed themselves with equal ardour, if not equal refinement."<sup>3</sup> A similar feast, in which the large occupiers dined separately from the "inferior tenantry," was held at Wragby in the April of the same year to mark the coming of age of Christopher Turner, the owner of another extensive estate in southern Lindsey.<sup>4</sup>

On the estate of the Earl of Yarborough, and on others in the county, the tenantry in the nineteenth century continued to dine together once a year in honour of the owner's birthday. On 8 August 1829, for instance, "the anniversary of the Right Hon. Lord Yarborough was celebrated with the usual public dinner at Limber."<sup>5</sup> From the 1820's onwards there appears to have been but one departure from tradition on such occasions, with the extension of the assembly to include a number of his lordship's political supporters who were not at the same time his tenants. During the hunting season the tenantry formed the field of the Brocklesby Hunt that was maintained by Lord Yarborough. "The hunting field" in the nineteenth century was "a sort of thermometer of the wealth of the Brocklesby district; every farm turned out one or more horseman chiefly in scarlet, well mounted, well appointed, so that when all assembled there was probably represented, £30,000 or £40,000 a year of farmer's rent."<sup>6</sup> On other occasions, both ceremonial and in times of unrest, such as the labourers' revolt of the winter of 1830-1, the same horsemen formed the other ranks of the local volunteer cavalry corps that was officered by the gentry.

<sup>1</sup> *British Husbandry*, III, p. 130.    <sup>2</sup> B.P.P. 1847-8, VII, p. 36.

<sup>3</sup> *L.R.S.M.*, 5 Feb. 1830. A similar division was applied by his lordship during the agricultural depression of the late 1840's, when an abatement of 10 per cent of the rental was granted to the larger tenants, who were "really farmers," while the "humbler tenants" were satisfied with "a mere meat dinner."—*L.A.O.*, Mon., 25/13/10/2/12 and 25/13/10/1/42.

<sup>4</sup> *L.R.S.M.*, 9 April, 1830.    <sup>5</sup> *L.R.S.M.*, 14 Aug. 1829.

<sup>6</sup> S. Sidney, *Railways and Agriculture in North Lincolnshire*, 1848, p. 78.

On some of the estates in Lindsey belonging to landowners residing in the county, many of the tenants appointed to farms during the later eighteenth and early nineteenth centuries appear to have been drawn from amongst the owners' household retainers. When applying for a farm on Lord Monson's estate in the 1850's John Ross of Lincoln stressed:

the long, and I think I can say, the faithful domestic servitude of both my parents, in the household of your respected uncle and predecessor, John Third Lord Monson, my father having entered the family shortly after the marriage of that nobleman, and not having quitted it till within a short period previous to his Lordship's death.

Ross's father left the Monson household in 1803 to become "the tenant of a small farm, since somewhat enlarged."<sup>1</sup> In 1852 the departing tenant of a large farm on the Monson estate wrote to his lordship, "to enquire the cause of my dismissal from a Farm which myself & Family have occupied for a period of upwards of 80 years and in which my family were first placed after long and faithful servitude with your Lordship's ancestors."<sup>2</sup>

The power of custom in Lindsey in providing security of tenure was reinforced by more practical considerations on the part of landlords, such as the general shortage of good tenant farmers with capital in an age of agricultural expansion. The landlord whose farms were occupied by able tenants was loath to part with any of them. The diversity of soil types and therefore of farming systems tended to limit the circle of potential applicants for farms; and the comparative uniqueness of each farm tended to make the son of the occupier, who was brought up on the farm and well acquainted with its peculiarities, the person best fitted to succeed to the tenancy. Landlords also preferred to retain sitting tenants, because a change of tenancy was usually the occasion for hard bargaining with the incoming tenant for new buildings and repairs etc. to be provided out of the landlord's capital. Sitting tenants, on the other hand, were "less free to bargain than new bidders since they have something to lose by quitting."<sup>3</sup> In a wider context, in a period in which the power of the landed classes was increasingly threatened by the growth of an opposing manufacturing interest, the former were loath to provide the tribunes of the latter with apparent instances of harsh treatment of tenants, and, more important, to threaten the cohesion of the rural hierarchy whose existence was increasingly dependent upon the sanction and well-being of its middle ranks.

Occupying their land from custom on a basis that was almost hereditary, and securely on their merits as farmers, the tenants of Lindsey appear to have preferred tenancy-at-will to leasehold. At the very least, there is no evidence to support the view expressed by the late Professor T. S. Ashton, that "tenancies at will, or from year to year, were generally disliked by the farmers."<sup>4</sup> In part this was due to the lower rents that generally prevailed with more customary attitudes to landowner-

<sup>1</sup> L.A.O., Mon., 25/13/10/10/122.    <sup>2</sup> L.A.O., Mon., 25/13/10/4/12.    <sup>3</sup> L.A.O., Mon., 25/13/10/3/55.

<sup>4</sup> T. S. Ashton, *An Economic History of England: The 18th Century*, 1955, p. 37.

ship, particularly in comparison to regions in which the practice of auctioning leases to the highest bidder predominated.<sup>1</sup> More important, perhaps, the lease of a farm for a fixed term of years was seen to have the tendency to limit the individual tenant's occupation of the farm to the period of the lease. As one Lincolnshire farmer put it: "if we took a farm for 14 or 21 years we should expect at the end of that term that there would be . . . a change of tenant."<sup>2</sup> Under the system of tenancy-at-will operating in Lindsey, on the other hand, the normal course was for the tenant to hand over his farm to a son after an active lifetime of occupancy, which was a course that even the most commercially-minded farmer deemed preferable. Where the tenant was forced to relinquish his farm through unforeseen circumstances, however, compensation for the unexhausted portion of his investment was provided for by the Lincolnshire Custom of tenant right that evolved as an adjunct of tenancy-at-will in a period of rising tenant outlays on the land.

IV

The Lincolnshire Custom of tenant right emerged during the years after 1815 and gained such widespread acceptance that it subsequently formed the basis of the Agricultural Holdings Acts of 1875 and 1883.<sup>3</sup> In essence the custom amounted to a partial compromise of the principle of *quidquid solo plantatur, solo credit* (whatever is put into the soil passes into the soil),<sup>4</sup> which benefited the landlord at the expense of the departing tenant. Instead, a limited tenant right was granted to ownership and compensation for inputs that increased the fertility of the soil, but which were not exhausted during the period of tenure. In calculating the compensation to be paid to an outgoing tenant time-periods were established over which the cost of the tenant's inputs was progressively discounted by a certain proportion each year until the fertilizing value was assumed to be exhausted for the purposes of tenant right. Thus the cost of an application of bone dust to the turnip crop on a Lindsey farm was usually discounted by one-third for each year of a three-year period until the right to compensation was exhausted.<sup>5</sup> On quitting his farm a tenant was entitled to reimbursement for the remaining proportion of his outlays on fertilizing inputs according to the time-periods established under the custom for each particular input.

Under the Agricultural Holdings Act of 1883 compensation to outgoing tenants for unexhausted improvements was "based entirely . . . upon the value to the incoming tenant" of the improvements.<sup>6</sup> This principle favoured the landlords and incoming tenants at a time when the rate of turnover of tenants was unusually high, and when agricultural prices, the value of tenant investments, and land values were all declining over time. During the "Great Depression", which was very real for

<sup>1</sup> Wilson, *op cit.*, p. 540; Caird, *English Agriculture*, p. 508.      <sup>2</sup> B.P.P. 1847-8, vii, p. 36.

<sup>3</sup> B.P.P. 1894, xvi, pt iii, p. 79; C. S. Orwin, *The Reclamation of Exmoor Forest*, 1929, p. 53.

<sup>4</sup> Orwin, *Reclamation Exmoor*, p. 147.

<sup>5</sup> Cf. G. M. Williams, 'On the Tenant's Rights to unexhausted Improvements, according to the Custom of North Lincolnshire', *J.R.A.S.E.*, vi, 1846, p. 44.

<sup>6</sup> B.P.P. 1847-8, vii, pp. 401, 409.

the mixed farmers on the light soils of eastern England, the major difficulties in occupancy were to induce new tenants to take up the farms and to enable their predecessors to meet some of their obligations to creditors. By contrast, when the Lincolnshire Custom was established in the years after 1815, the rate of turnover of tenants on the light soils of Lincolnshire was low, and the value of tenant improvements and land values were increasing over time despite falling prices for agricultural produce. In this situation, where the problems in tenancy were essentially to provide the tenant with a degree of security of tenure and a reward for improvement, compensation for unexhausted improvements was "based upon the actual outlay made by the tenant" rather than the value of the improvements to the incoming tenant.

In some districts the principle of compensating outgoing tenants for unexhausted improvements upon the basis of "the actual outlay made by the tenant" created a barrier to agricultural progress. According to a land agent, who resided in Nottinghamshire but also managed estates in Lincolnshire, "heavy tenant right retards improvement", for "when there is a heavy tenant right upon a farm, the tenant cares less about giving up than when he was not got a great tenant right."<sup>1</sup> The problem of tenant right discouraging effort on the part of tenants, or obviating the threat of dismissal as a stimulus to improvements in farming, appears to have applied particularly to Nottinghamshire, where the amount per acre paid for tenant right was far higher than in Lincolnshire. In the latter county the difficulty was avoided in the method of calculating the time-periods over which the tenant's right to compensation for each input was discounted. Instead of being based upon the length of time required to exhaust the contribution of the input to the fertility of the soil, the guideline adopted in the establishment of the time-periods was the number of years required to recompense the occupier for his outlay. Under this principle, for example, the "marling" of the wold hills with chalk was discounted as a tenant right over a period of seven years, although the process only required repetition every twenty to twenty-five years. By maintaining a substantial margin between the value of tenant inputs to the soil and their value as a tenant right the farmers were motivated to seek a return from the produce of the soil rather than from their successors.

Instances of malpractice, to which tenant right was claimed by some agricultural writers to lend itself, were extremely rare in Lincolnshire. According to Caird tenant right generally "led to much fraud and chicanery", but he conceded that the "Lincolnshire system . . . has not led to the frauds practised in Surrey and Sussex."<sup>2</sup> The allowance for oilcake during the early years of its introduction might be deemed a partial exception to this rule. When the allowance was first applied on the Yarborough estate on the Lindsey wolds in the form of reimbursement for half the tenant's expenditure upon oil-cake during the final year of the tenancy, the agent discovered "people spending more the last year of the tenancy than ever before."<sup>3</sup> However, this practice quickly disappeared after the custom was modified

<sup>1</sup> B.P.P. 1847-8, VII, p. 393.

<sup>2</sup> *English Agriculture*, pp. 195, 506.

<sup>3</sup> B.P.P. 1847-8, VII, p. 372.

to take the average of the last two or three years of the tenancy as the basis for calculating the allowance.<sup>1</sup>

When a tenant quitted his farm the tenant right was calculated by valuers, who were normally selected from among the most experienced farmers of the locality. One valuer was appointed by the sitting tenant and the other by the incoming tenant. When the valuers failed to agree on the amount of compensation they in turn appointed an umpire to arbitrate between them. Apart from its apparent fairness, this method of establishing compensation within the guideline set down by custom possessed the added advantage of removing the necessity for contact between the landlord and the outgoing and incoming tenant in a matter over which relations might be subject to strain. As Lord Yarborough's agent commented in the late 1840's upon a Bill before Parliament to legalize tenant right:<sup>2</sup>

Under our present system the outgoing tenant and the incoming tenant do not come at all in contact; they probably do not know each other; the outgoing tenant appoints his valuer, and the incoming tenant appoints his, and if there is any doubt they call in another party; the sum awarded is paid, and there is an end of the matter; whereas if you bring the landlord and tenant together, as it is proposed in this Bill, in most cases there is on a tenant quitting some little ill-feeling between the landlord and the tenant; the landlord probably is not satisfied with the tenant's management, or the tenant may not be satisfied with his landlord, in either of which cases there is not a very friendly feeling, and if you bring them into immediate collision I should fear it would produce a great deal of mischief.

V

Dr D. B. Grigg has suggested of Lincolnshire that

Tenant right probably grew out of the system of entry to a farm. In Lincolnshire farms were vacated on April 5th. Clearly the outgoing tenant had either to let the incoming tenant onto the farm prior to this date, or carry out the cultivation for him. In the latter case the incoming tenant could then pay a mutually agreed sum for labour and seed. Tenant right for a wider variety of services could naturally grow out of this.<sup>3</sup>

In Lindsey, however, it would appear that the problems associated with tenancy changes were only responsible for the procedure of arbitration later adopted for tenant-right purposes and not for the custom of tenant right itself. In the later eighteenth century, both in cases where the incoming tenant was permitted to enter upon the land to sow crops before his predecessor's tenancy expired, and in cases where the outgoing tenant was compensated for the growing crops at the end of his tenure, the procedure of determining compensation by means of two valuers with a right of appeal to an umpire was commonly adopted. A tenancy agreement signed in 1795 stipulated that the outgoing tenant was to be compensated for all

<sup>1</sup> *Ibid.*, pp. 18, 372.

<sup>2</sup> *Ibid.*, p. 390.

<sup>3</sup> Grigg, 'Development . . . Lincolnshire', *loc. cit.*, p. 46.

loss and damage occasioned by the entry of the incoming tenant to sow spring corn according to the amount established "by two disinterested persons one to be chosen by each of the said parties."<sup>1</sup> Alternatively, the tenancy agreement for a farm on the Yarborough estate dating from 1781 states that

Whereas it is thought reasonable that the offgoing tenant ought to have some Allowance for the Grass Seeds he may sow in the Spring twelve months before he quits the said farm . . . , it is hereby agreed that the Allowance for such Seeds shall at a proper time be referred to Two judicious persons indifferently chosen, and if they cannot agree, for them to chuse [*sic*] a third person who shall determine the Difference between them.<sup>2</sup>

On some estates the arbitration procedure adopted under the Lincolnshire Custom of tenant right was subsequently extended to cover the settlement of disputes between landlords and tenants over destruction to crops caused by game. In the tenancy agreement for a farm at Scawby, close to Sir John Nelthorpe's residence, it was "agreed that if any excessive damage is done by the Game, the same shall be valued by two indifferent Persons, one to be chosen by the tenant and the other by the Landlord, as umpire a third Person shall be chosen by them."<sup>3</sup> On the same estate, in the agreement signed by a Hull merchant in 1853 for the lease of a cottage and "the exclusive right of shooting, coursing and otherwise killing all game and rabbits in . . . the lands of Sir John Nelthorpe . . . in the Parish of South Ferriby," the rabbits were "not to be allowed to increase to the injury of the occupiers of the farms." If the number of rabbits was deemed to be excessive Sir John's agents or the farmers were permitted to shoot them.<sup>4</sup>

The procedure of arbitration adopted under the Lincolnshire Custom, and perhaps the notion that outgoing tenants were entitled to compensatory allowances, may have grown out of the procedures necessitated by changes of tenancy. However, there is every reason to doubt that the custom of tenant right itself originated in such procedures. In the first place, the problems associated with changes of tenancy were common to farming throughout England, and in Lindsey before 1815, but tenant-right customs did not develop in all areas or in Lindsey before 1815. Secondly, the spread of the Lincolnshire Custom and the improved methods of farming adopted on the light soils of the Lindsey uplands from the later eighteenth century onwards appear to have made the old procedures adopted for changes of tenancy increasingly unworkable.

Where an incoming tenant was permitted to enter upon the land before the termination of the sitting tenant's agreement the adoption of the Lincolnshire Custom became a cause of conflict between the two parties. Many sitting tenants were unwilling to permit their successors on to the land while the account for tenant right remained unsettled, and while their successors' ability to pay remained an unknown quantity. In at least one instance this conflict of interests ended in a pitched

<sup>1</sup> L.A.O., Haigh Deposit, 6/1/9.    <sup>2</sup> L.A.O., Yarborough Deposit (Yar.), 5.

<sup>3</sup> L.A.O., Nelthorpe Deposit (Nel.), viii/12/59.    <sup>4</sup> *Ibid.*, viii/12/58.

battle between the two farmers and their respective labourers. A farmer at Waltham near Grimsby, a declared bankrupt, had given notice of his intention to quit his farm on May-day 1835. At the beginning of February in that year the incoming tenant requested permission to sow a crop of spring corn, but as the amount of compensation for unexhausted improvements remained to be settled the sitting tenant declined to grant the request. A few days later the incoming tenant and his labourers forced an entry to the farm and commenced ploughing. And, whilst they left the premises when ordered to do so by the sitting tenant, they returned two days later "armed with fork-shafts and such like weapons." In the ensuing struggle the brother of the outgoing tenant received a broken arm, for which he later claimed substantial damages.<sup>1</sup>

As an alternative to the procedure whereby the incoming tenant was permitted access to the land to sow spring crops before the occupier's tenancy expired, the method of compensating the outgoing tenant for undertaking such work was considered unreliable. Most tenants who left farms did so with some degree of antipathy towards their landlords, and were therefore unlikely to cultivate the land willingly or properly for their successors. This applied to the sowing of artificial grasses on the barley during the spring before the notice to quit expired. To guard against the latter omission some tenancy agreements of the later eighteenth century stipulated that, before the expiration of the notice to quit, the owner, "his Servants, or the oncoming tenant shall have Liberty to sow among any part of the following Crop such Quantity of Clover or Other Seeds as they or any of them may adjudge proper and necessary."<sup>2</sup> However, this stipulation was likely to be a source of conflict and litigation over damage occasioned to the barley in the ground.

In the main, the method of compensating outgoing tenants for "waygoing crops" appears to have been considered incompatible with the rotations adopted on the light soils of the Lindsey uplands from the later eighteenth century onwards. The traditional rotation of the lowland clays (of winter wheat, spring corn, and fallows), and the old cropping pattern on the uplands (of successive cereal crops being taken before the land was allowed to fall to grass), facilitated the calculation of compensation for waygoing crops. The crops involved were traditional cash crops for which the labour costs and likely market price were relatively easy to estimate, and they were cultivated with a minimum of tenant outlays upon fertilizers. However, under the alternating cereal and fodder crop rotations, which rapidly came to predominate on the uplands towards the end of the eighteenth century, the estimation of the value of waygoing crops was considerably more difficult.

Until well into the nineteenth century there was no established or customary rotation that was universally adhered to on the Lindsey uplands. Each farmer adopted a variant of the cycle of fodder and cereal crops, according to the nature of the soil, the wishes of his landlord, and his own notions of what was good or merely the most profitable farming practice. Therefore, there was likely to be disagreement between incoming and outgoing tenants as to the proper waygoing crops to

<sup>1</sup> L.R.S.M., 13 March 1835.    <sup>2</sup> L.A.O., Yar., 5.

be cultivated. The common denominator of all the rotations adopted on the uplands was a high degree of integration of different crops, with each contributing to the success of the following crop and with each being difficult to separate for the purposes of valuation.<sup>1</sup> And the value of the crops gained from the poor light soils of the uplands was heavily dependent upon the quantity and quality of the fertilizing inputs applied by the occupiers. In particular, the fertilizers applied to the turnip crop initiating the rotation contributed significantly to the value of the wheat crop harvested four or five years later.

In southern Lincolnshire, the area upon which Grigg's findings are based, the problems associated with changes of tenant on a farm operated under alternating cereal and fodder crop rotations were overcome by the outgoing tenant being compensated for waygoing crops. On the uplands of Lindsey, on the other hand, it appears to have been the common practice for the outgoing tenant to withdraw gradually from the land as each crop was cleared. Most tenants therefore retained the ownership of the crops of winter and spring corn and of the "keeping" of artificial grasses sown the previous year, after the expiration of their notices to quit. In many cases, if not most, the outgoing tenant sold the waygoing crops, but he did so to the highest bidder rather than the incoming tenant. When quitting his farm in 1840, for example, Francis Scarman of Tetford offered for sale the usufruct of his land containing "Over-eaten Eddish," "second year seeds," and "one year and young seeds."<sup>2</sup>

Both tenants and landlords appeared to have preferred the Lindsey method of gradual withdrawal from the land by the outgoing tenant. To the sitting tenant the practice minimized the possibility of conflict with his successor. And, if he desired to sell the waygoing crops, he was likely to receive a price that was higher and a closer approximation to the market price where the sale was not restricted to his successor. To the landlord the method may have been preferred because it allowed for a longer period of time in which to find a successor for the farm. Where the incoming tenant entered upon the lands to sow spring corn the landlord had only three months from 10 October in which to find a new tenant. Where the outgoing tenant withdrew gradually from the land, on the other hand, the position of the landlord did not become desperate until late in the spring when the turnip crop, which received the bulk of the fertilizing inputs, had to be sown.

It was extremely rare for a tenant on the Cliff and wolds of Lindsey to sow crops for his successor in return for compensation, unless the successor happened to be a close relative. Under the common system adopted for a change of tenancy, the insignificant scale of turnover of tenants on the Lindsey uplands tended to preclude the necessity for a formal and widespread procedure covering the rights and responsibilities of incoming and outgoing tenants. The last thing any incoming tenant in Lindsey and his landlord appear to have considered was the possibility of

<sup>1</sup> See E. L. Jones, 'English Farming before and during the Nineteenth Century', *Econ. Hist. Rev.*, 2nd ser., xv, no. 1, 1962, p. 146.

<sup>2</sup> *L.R.S.M.*, 15 Nov. 1839.

the former's departure. In most cases agreements between landlords and tenants in Lindsey, like those on the Yarborough estate, were made upon "the 'simple principle' . . . i.e. they merely express the amount of following crops (if any), and that the tenant is to pay so much money for such land, to be cultivated in a good and husbandlike manner."<sup>1</sup>

## VI

The emergence of the Lincolnshire Custom of tenant right would appear to have been very closely linked to the remarkable progress made in farming in that county, particularly in the upland regions of light soils, during the later eighteenth and early nineteenth centuries. To many local farmers in the 1840's the custom of tenant right was considered to be the cause of agricultural improvement. However, while such a connection might be established for the years after 1815, it does not apply to the initiation of agricultural progress on the uplands in the later eighteenth century, when the custom did not exist. The instrument of improvements in farming on the Lindsey uplands from the 1780's was a coincidence of the declining profitability of existing forms of land usage for sheepwalks and rabbit warrens and a marked upward trend in cereal prices from the 1790's to 1815. Combined with the rapid growth of a large urban-industrial market for foodstuffs in the nearby West Riding, these economic stimuli encouraged the farmers of the Lindsey uplands to adopt fodder and cereal crop rotations as the basis of a farming system characterized by large and comparatively long-lasting tenant capital outlays upon fertilizers and animal feedstuffs. Such inputs were essential to bring the innately poor soils of the wolds and the Cliff to a peak of productivity and their value could not be exhausted within the span of a yearly tenancy.

In the years before 1815 the necessity for large-scale and long-term capital outlays by tenants, with which they virtually created the soils of the uplands, coexisted with tenancy-at-will without causing friction between landowners and tenants. The carryover of traditional attitudes amongst the landowners encouraged the tenants in a feeling of security, and the lag of rents behind agricultural prices generated a level of profits that considerably reduced the time-lag between investment and reimbursement, and almost entirely removed the risk of tenants failing. From the closing years of the war, however, the situation altered drastically. Rents were gradually raised on the uplands between 1803 and 1812 to a level more commensurate with the high level of food prices and land values. On the Monson estate, according to the tenants who petitioned in 1816 for a reduction in their rents, "a very considerable Addition" was made to the rents in 1803, and a further increase occurred in 1809.<sup>2</sup> Then, from 1813, prices of agricultural produce began to fall.

"In good times," as one authority on Lincolnshire agrarian history has stated, tenancy-at-will "worked because Lincolnshire landowners had a reputation for being reasonable and trustworthy landlords."<sup>3</sup> In the "bad times" after 1813 it continued to "work" in the majority of cases, but tenants also began to look for

<sup>1</sup> L.R.S.M., 26 Feb. 1847.

<sup>2</sup> L.A.O., Mon., 19/8/1.

<sup>3</sup> J. Thirsk, *English Peasant Farming*, 1957, p. 265.

other and additional means of securing their heavy capital outlays upon the land. Because the tenants' concern after 1813 was less with security of tenure and more with security for their investment, and because the likely trend of future prices for agricultural produce appeared highly uncertain, the tenants continued to prefer tenancy-at-will to long leases and sought a solution in a system of tenant right to unexhausted improvements. For their part, the landlords were motivated to acquiesce in the tenants' demands for tenant right as this was a charge upon incoming tenants rather than themselves, and as it was a means of maintaining rents at the levels achieved during the war period with only occasional abatements and without permanent reductions.

It is a contention of this essay, therefore, that the Lincolnshire Custom emerged as a response on the part of the tenants of the Lindsey uplands to the more difficult times for farming after 1813, particularly for a farming system that required heavy capital outlays by tenants. In turn, the custom enabled tenancy-at-will to continue and facilitated further rapid progress in agriculture along the lines established during the prosperous war years. After 1813 the custom of tenant right and the continued momentum of agricultural improvement by the tenants on the uplands "acted and reacted on one another" to create one of the most advanced farming regions in England by the 1840's.<sup>1</sup>

The system of tenant right that became operative in Lincolnshire balanced the need for the tenant to be secure in the knowledge that he would be adequately reimbursed for unexhausted improvements in order for farming to progress, with the opportunity for landlords to remove tenants who failed to manage their farms "in a good and husbandlike manner". The custom also provided farmers of ability with a high degree of security of tenure, within reasonable limits, because the more capital that the tenant invested in raising the fertility of the soil the larger the capital required by any potential successor to purchase the tenant right. Therefore, by placing the burden of tenant-right compensation upon the incoming tenant, with only a possibility that the landlord might have to raise the sum and take the farm in hand for a period, capable sitting tenants obtained effective security of tenure and the tenancy of farms was limited to a comparatively small group of experienced farmers with large capital resources.

As was to be expected of a system of tenant right that evolved "from below" to suit the requirements of local farming, there was some degree of variation in the provisions of the custom in different parts of the county. The custom in Kesteven differed from that in Lindsey,<sup>2</sup> and, before the 1850's at least, it also varied from estate to estate within the administrative division of Lindsey.<sup>3</sup> Even on a single farm certain allowances were not uniformly applied to the whole of the lands of the farm. In the lease of a farm belonging to Sir John Nelthorpe the time-periods over which the cost of claying poor sandy soils were discounted for tenant-right purposes

<sup>1</sup> B.P.P. 1847-8, VII, p. 400.

<sup>2</sup> Grigg, 'Development . . . Lincolnshire', *loc. cit.*, p. 42; B.P.P. 1847-8, VII, p. 34.

<sup>3</sup> B.P.P. 1847-8, VII, p. 413.

varied from six to twelve years, according partly to the distance of the fields from the clay and partly to the amount of claying required. According to the lease:<sup>1</sup>

In claying the lands in Twigmoor West of Middle Carr Drain, It is specially agreed that ten years allowance shall be made instead of six as on other lands. And it is further agreed that for the claying of the lands in Holme in the parish of Bottesford an allowance of twelve years shall be made.

It was only from the 1840's, when a degree of uniformity in the productivity of the upland soils had been achieved, and the system of tenant right was adopted throughout the county, that the custom in turn became increasingly uniform over the whole county.

The flexibility of allowances upon individual farms, that the custom as a mere custom permitted, also applied to the adoption of allowances for new and more advanced farming techniques that emerged with time. Once the efficacy of a new fertilizer was recognized it could be quickly incorporated into the custom. The introduction of guano to the upland farms of Lindsey in the early 1840's was in this way soon followed by the establishment of a scale of allowances to compensate tenants using the new fertilizer who were forced to leave their farms. As a consequence of the custom, therefore, tenants became more willing to adopt new and improved methods of farming and their rate of diffusion throughout the locality was considerably increased.

For the landlord the Lincolnshire Custom provided a preferable means of securing the rent of a farm to the law of distraint. The latter favoured the landlord in that it gave him the first claim upon the proceeds of the sale of an outgoing tenant's live and dead stock for the payment of rent arrears. However, the exercise of this privilege was troublesome, and it often attracted adverse and unwanted publicity to the actions of landowners. Sometimes outgoing tenants attempted quietly to dispose of their assets "with a view of getting the Sale over without . . . there [being] time to secure the Rent."<sup>2</sup> If the landlord was resident or employed an agent, word of the sale might leak out in time to obtain a warrant of distress for the rent due and to arrange for a bailiff to be at the sale to execute the warrant. Where the sale or removal of the outgoing tenant's assets was completed without the landlord's knowledge the latter was forced to take court action against the defaulter. And, according to law,

the landlords have not merely a right to take the goods of their tenants within 30 days after a fraudulent removal of them to prevent their being distrained for rent, and to dispose of them in liquidation of it, but are entitled to double the value of such goods, as a penalty for the fraudulent removal or concealment of them; and that, where the value of such goods does not exceed 50£., two Justices are empowered to levy the penalty by distress on the goods of the offenders, and for want of such distress to commit them for six months to hard labour.<sup>3</sup>

<sup>1</sup> L.A.O., Nel., viii 12/55.

<sup>2</sup> L.A.O., Mon., 25/13/10/4/4.

<sup>3</sup> L.R.S.M., 2 Oct. 1829.

While the law of distraint placed the landowners in a privileged position amongst creditors, both the privilege and the severity of the penalties under the law appear to have made landowners averse to exercising it. Objection might be made to the law because it gave a prior claim to a class of creditors who were best able to bear the loss occasioned by the default of a debtor. The application of the law to a tenant who had failed after struggling to make his farm pay was akin to an arbitrary exercise of power and privilege, which might have increased the insecurity of remaining tenants, and have lessened their confidence in the landlord. Moreover, cases involving defaulting tenants being committed to prison would have attracted adverse publicity in the urban-liberal press; and this might have stimulated a campaign for the repeal of a law that provided the landlord with an ultimate sanction against defaulting tenants which was preferably not to be utilized. Here, the Lincolnshire Custom offered an alternative method to the law of distraint for obtaining arrears of rent, which enabled the landlord to separate his claims upon the outgoing tenant from those of other creditors. Either the landowner might withhold the payment of compensation for unexhausted improvements to which the outgoing tenant was entitled, where the landlord was forced to take the farm in hand, or he might order the incoming tenant to pay the compensation to his agent in lieu of the outgoing tenant's arrears of rent. In 1832, for instance,

A person named Kelham, a tenant of the Duke [of St Albans], was about to quit his farm: by the custom of the country, he was entitled to allowances for cropping, &c.; but being very considerably in arrears of rent, it was agreed that the tenant who was to succeed him, named Cox, should be indebted to the Duke in 389£., and deduct that sum from what he as an incoming tenant would have to pay Kelham.<sup>1</sup>

Although the Lincolnshire Custom of tenant right was unrecognized by law, the instances are rare of landlords refusing to accept its provisions as binding upon them. A few such exceptions occurred during the early 1830's, the most difficult years of upland farming between the late 1790's and the late 1840's, when the turnover of tenancies reached a peak. At that time many landlords themselves faced a very real possibility of having to take farms in hand and reimburse the outgoing tenants for unexhausted improvements, and potential tenants were discouraged from taking farms by demands on their capital to pay for unexhausted improvements initiated in a more prosperous period for agriculture. The *cause célèbre* in this reaction on the part of landowners occurred in 1832, although it is notable that the landowner concerned was not a resident of Lincolnshire.

The case in question concerned Francis Taylor, a tenant on the Lindsey estate of Lady Gordon of Green Park Lodge, Piccadilly. Taylor and his father before him had been tenants on the Gordon estate "for upwards of 40 years," and by 1830 Francis Taylor was "a farmer on a large scale," paying nearly £1,000 a year for a farm at Linwood near Market Rasen on which he maintained 26 working horses,

<sup>1</sup> L.R.S.M., 27 June 1832.

50 head of cattle, and over 800 sheep. Landlord-tenant relations on the Gordon estate were amicable up to 1829, and "the tenants prospered, and all went well." In that year, however, a new land agent was appointed, "and the tenants were soon made to know the change." The new agent "began by giving notices, in order to raise the rents." Then, after Taylor had accepted new terms for his tenancy, he was subjected to "such a series of annoyances and injuries," that he was forced to give notice of his intention to quit the farm. According to Taylor, labourers acting on the orders of the agent had felled over 300 trees growing in the hedgerows on his farm, "although no right to do so was reserved in the agreement for occupation," and had "then destroyed the fences, without doing any repairs, and damaged corn and eddish crops by dragging heavy timber across them and tearing up the very soil."<sup>1</sup>

On quitting the farm Taylor was forced to take legal action against his former landlady, for the repayment of rent and taxes on "land fallowed the year previous to his quitting," and for compensation "for the numerous Tenant Rights . . . to which he was entitled . . . according to the custom of the country." The necessity to take court action against the landowner to recover compensation for unexhausted improvements was a matter of some surprise to local agriculturalists, in that tenant right was normally a matter arranged between the incoming and the outgoing tenant. But, as a local newspaper reported, "the usual *amicable* and proper mode of adjusting claims of this description by a reference, to experienced Farmers and Valuers, having been *objected to on the part of the landlady*," Taylor was left with no alternative but to seek "his remedy by law" and from the landlady. The "Special Jury" appointed to consider the case found in favour of the existence of a legally binding "custom" only in respect of Taylor's claim for the reimbursement of a year's rent and taxes on "his summer fallowed land," and "for fold-yard fences and buildings five or six inches only in the ground." All other claims for tenant right to compensation for unexhausted improvements, which were not sanctioned by law, were rejected by the jury.<sup>2</sup>

Fortunately for the occupiers of Lindsey farms the Taylor case, which "excited so much interest in the neighbourhood where it arose, more particularly amongst Agricultural Tenants," proved to be almost unique.<sup>3</sup> One other case involving tenant right was adjudicated upon at the same time, but it failed to arouse the same degree of concern amongst tenants as the Taylor case. A farmer on the Heneage estate in central Lindsey had held back £40 of his last rent payment for some bone-manure and marl that he had laid upon the land the year previous to quitting the farm, "under the idea that he was entitled to an allowance according to the *custom of the country*." The court, however, supported the landlord's contention that the compensation was a matter to be settled between the incoming and outgoing tenants. In this particular case also, the amount of bone-manure was of "a less quantity" than the tenant had agreed to apply according to his tenancy agreement, and the marl, was "not at all mentioned in the agreement." And, as "Mr Heneage

<sup>1</sup> *L.R.S.M.*, 22 July 1831, 23 March 1832.    <sup>2</sup> *Ibid.*    <sup>3</sup> *Ibid.*

was too rich and too generous to take any costs," the farmers were not disturbed by the outcome of this case.<sup>1</sup>

After the difficulties of the early 1830's the overwhelming majority of landowners in Lindsey accepted the existence of the Lincolnshire Custom to an extent that could have been but little improved upon by giving legal sanction to the custom. Such acceptance originated, at least in part, in the fact that after 1832 the threat of landlords having to take farms in hand for a period never materialized on any significant scale. Therefore, tenant right became almost exclusively a matter of concern to incoming and outgoing tenants. At the same time the utility of the custom to the landlords was widely recognized, as a preferable alternative to the exercise of landlord rights under the law of distraint and as a method of raising the value of the land.

## VII

The foregoing outline of a complex question suggests that leasehold tenure was neither the stimulus nor the necessary accompaniment of agricultural progress in the eighteenth and nineteenth centuries that many writers have stated it to have been. That progress was more the consequence of a certain constellation of economic forces external to agriculture itself, which brought forward the apposite response from farmers and landlords in the form of improved techniques and a higher level of capital investment in farming. Both the conditions of fluctuating prices for agricultural produce and the new farming system that emerged in the period accorded better with tenancy-at-will as a form of tenure than with leasehold, when it was combined with a tenant right to compensation for unexhausted improvements. As the example of Lindsey indicates, the local custom of tenant right performed the function of providing security of tenure, without the disadvantages of leases, in an agricultural situation in which the future trend in markets was impossible to prophesy with confidence. And, in particular, the custom yielded certain additional benefits for tenants, landlords, and the cause of agricultural improvement in the difficult years for agriculture after 1813.

It may be that the results of an analysis of the historically specific instance of Lindsey during the first half of the nineteenth century defy its wider application to British agriculture. Land usage on the uplands before improvement, for sheep-walks and rabbit warrens, established a framework of large farms that exactly suited the requirements of the system of mixed farming which subsequently developed. The very rapidity of the development of agricultural techniques in Lindsey, from a position of backwardness in the later eighteenth century, created a situation in which an older style of landlord-tenant relations was carried over into the following century, that minimized friction effectively. However, as far as the leadership in agricultural progress is concerned, it was between 1815 and 1850 that the farming of Norfolk, a county noted for long leases, lost ground to that of the county of Lincoln which was based upon tenancy-at-will, with the addition of a system of compensation for unexhausted improvements.

<sup>1</sup> L.R.S.M., 16 March 1832.

# The Development of Market Gardening in Bedfordshire 1799-1939<sup>1</sup>

By F. BEAVINGTON

THE early history of commercial vegetable production in Bedfordshire antedates parliamentary enclosure by at least two centuries. Its nature, gardeners, and location in the cottage closes and on specific unenclosed land of one parish, Sandy, are reconstructed from a variety of documentary sources and discussed in an earlier paper in another journal.<sup>2</sup> Several references testify to the antiquity of the industry. A Sandy glebe terrier of 1708 describes "a piece of ground lying on the South side of the great barne commonly called the Redish ground and always in the occupation of a Gardiner."<sup>3</sup> The industry was already established a century earlier when, in 1610, "William Spring, gardener of Sandy, bought one acre between the croft late Walt. Swetman's and the spinney called Shillonde, abutting north on Lincoln cross."<sup>4</sup> This paper traces the evolution of market gardening in Bedfordshire during 140 years of economic and technological change from enclosure to the emergence of the present system of extensive production of vegetables. The growth is considered in three periods: 1799 to 1850, the pre-railway period; the mid-century to 1918, the period of railway transport and of great development of traditional market gardening; and 1919 to 1939, during which the foundations of the present system of vegetable production were laid.<sup>5</sup>

## GARDENING AT ENCLOSURE

The site of Sandy village lies between the small northward-flowing River Ivel and the south-east facing slopes of the Lower Greensand plateau that rises 100 feet or so above the river, whilst the parish of Sandy extends over the broad Ivel valley and on to the Greensand plateau. Fig. 1 shows the location of Sandy and twenty-nine other parishes which, by the 1930's, broadly contained the market-gardening district. They are situated on the terraces of the Ivel and Ouse valleys and on the Lower Greensand east and west of Sandy, designated Eastern Greensand and Western Greensand respectively. The Ivel and Ouse terraces are built characteristically of layers of gravels and sandy materials that form a total thickness of 6 to 10 feet and contain a fluctuating water table. The surface soils are sandy, though with a clay content of 10 to 20 per cent, and many pieces of gravel. The soils of the

<sup>1</sup> My thanks are due to Professor H. C. K. Henderson who, some years ago, stimulated my interest in this work.

<sup>2</sup> F. Beavington, 'Early Market Gardening in Bedfordshire', *Trans. Inst. Brit. Geog.*, 1965, xxxvii, pp. 91-100.

<sup>3</sup> Beds. C.R.O. ABE/2: account of the Rights of the Rectory and Church of Sandy.

<sup>4</sup> Beds. C.R.O., PM 263.

<sup>5</sup> This article is based on F. Beavington, 'Market Gardening in eastern and central Bedfordshire', unpublished Ph.D. thesis, University of London, 1961, ch. II, but also embodies a good deal of evidence collected over the past two years on a number of aspects outside the scope of that work.

Greensand are deep sands and loamy sands with 6 per cent clay and low natural fertility. They drain freely to a deep water table.<sup>1</sup> Large areas of the Eastern Greensand, for example, the eastern part of Sandy parish, were mainly under heath vegetation until the later nineteenth century;<sup>2</sup> such land is especially poor. Two fields are more clayey, and corroborated evidence shows the land was marled in the 1880's; there was probably little or no previous marling on the Greensand here, however.<sup>3</sup> The soils of the Ivel and Ouse terraces are now classified as gleyed brown earths of the Biggleswade and Milton Associations, and those of the Greensand as brown earths of the Cottenham Association.<sup>4</sup> On this range of sandy soils market-gardening cultivation in Bedfordshire spread during the nineteenth century.

The Act of enclosure for Sandy was passed in 1798 and the Award signed in 1804. The significance of the industry at enclosure and in the following decade was witnessed by the authors of five topographies.<sup>5</sup> They testify to the unusual spectacle of this island of intensive gardening. Cooke, for example, writes in 1810,

Sandy ... is much noted for its gardens; ... it is a curious ... sight to behold crops of onions, potatoes, French beans, and even whole fields of cucumbers intermixed with crops of wheat, barley and turnips.<sup>6</sup>

Batchelor says that Sandy cottagers commonly sowed onions with drills;<sup>7</sup> even so the little freeholds were cultivated largely by spade and hoe;

Carrots they sow about Ladyday on ground dug one spit deep, they hoe them very carefully about three times; ... and get on a medium a crop of two hundred bushels upon an acre. Of onions they sow vast quantities ... they always manure them with great care ... the average crop is about 200 bushels.<sup>8</sup>

The range of marketing clearly included London, being said to extend "in all directions up to 60 miles and sometimes still further," and "from Hertford to the metropolis."<sup>9</sup> Hired labour was common, and for the three hoeings of carrots, "the work by the day comes to nearly two pounds per acre." The rents the gardeners paid were high, "two to three pounds per acre," whilst a field at Biggleswade, manured

<sup>1</sup> F. Beavington, 'Particle size distribution of the surface soil on the Lower Greensand in eastern Bedfordshire', *East Midland Geographer*, xxxviii, 1972, pp. 315-16.

<sup>2</sup> T. G. Bonney, *Geology of Cambridgeshire*, Cambridge, 1875, pp. 22-3.

<sup>3</sup> Beavington, thesis, pp. 216-18. Soil analysis showed twice the normal clay content at the present day. See J. D. Chambers and G. E. Mingay, *The Agricultural Revolution 1750-1880*, 1966, pp. 62-3, for further reference to marling.

<sup>4</sup> D. W. King, *Soils of the Luton and Bedford district*, Soil Survey of Great Britain, Harpenden, 1969, pp. 15-20.

<sup>5</sup> C. Bruyn Andrews (ed.), *The Torrington Diaries, 1781-1794, containing the tours through England and Wales of the Hon. J. Byng*, II, 1938, p. 280; J. Britton and E. W. Brayley, *The Beauties of England and Wales*, 1801, p. 78; A. Young, *Annals of Agriculture*, 42, 1804, p. 28; T. Batchelor, *General View of the Agriculture of the county of Bedford*, 1808, pp. 456-7; G. A. Cooke, *Topographical and Statistical Description of the county of Bedford*, c. 1810, pp. 18-19. A summary of the gardening industry in Bedfordshire at the time of enclosure, drawn from these and other sources is given by Beavington, 'Early Market Gardening ...', *loc. cit.*, pp. 91-100.

<sup>6</sup> Cooke, *op. cit.*, pp. 18-19. <sup>7</sup> Batchelor, *op. cit.*, p. 457.

<sup>8</sup> Cooke, *op. cit.*, pp. 18-19. This yield of about 4½ tons per acre of onions is very poor in terms of production of the present day when 15 tons per acre is regarded as a good average yield.—Priv. comm., Mr J. Davies, Ministry of Agriculture, Huntingdon.

<sup>9</sup> Cooke, *op. cit.*, p. 19.

and cleaned, was let for growing potatoes and onions at £5-£6 an acre.<sup>1</sup> The vegetable crops were grown in cottage gardens, old enclosures within the village, and on the former unenclosed land, Chester Field.<sup>2</sup> Reference to gardening in other parishes of the present market-gardening area are few at this time, and none exists for many parishes.<sup>3</sup> Batchelor (1808) refers to "good garden ground where sandy soil prevails" at "Biggleswade, Clophill and Maulden."<sup>4</sup> The paucity of references of all kinds shows that gardening in these parishes at the beginning of the nineteenth century was in a secondary position. Sandy was the outstanding centre and was to remain so for the next fifty years at least.

#### GROWTH TO 1850

Although the northern part of the parish of Sandy extends on to the Oxford Clay lowland, there are several hundred acres of well-drained sandy land on both the Lower Greensand and the Ivel gravel terraces (fig. 1). The enclosure map shows that most of this sandy land, which subsequently became devoted to market gardening, had been held in the common field system.<sup>5</sup> Much of this area, however, was not cultivated until the last quarter of the nineteenth century.

Arthur Young refers to sixty-three small proprietors at Sandy at the time of parliamentary enclosure. Fundamental changes had been forced on the little gardening enterprises: "These men kept cows on the boggy common, and cut fern for litter on the Warren, by which means they were enabled to raise manure for their gardens, besides fuel in plenty; the small allotment of an acre and half, however good the land, has been no compensation for what they were deprived of. They complain heavily and know not how they will manage to raise manure."<sup>6</sup>

There is little evidence of the immediate effects of enclosure on the number of these small proprietorships. According to Sandy's enclosure map they were between 2 and 5 acres and were distributed continuously along the Greensand slopes of the former Chester Field. Some were on the Ivel terrace along the Great North Road though most of this land was in large allotments. It is not possible to confirm from the enclosure map whether the small holdings are gardens. However, the lists of Sandy Jurors<sup>7</sup> make it possible to identify two proprietors, John Underwood and William Sutton, as gardeners. Their land is shown on the enclosure map as three pieces of 1½ acres, 5½ acres, and 1½ acres (old enclosure) for Underwood, and three pieces of 7 acres (including 4 acres bought at enclosure), 2 acres, and 3 acres (old enclosure) for Sutton. Underwood's land was on the Greensand slopes and Sutton's was on the river terraces where his 7-acre plot comprised two of the new allotments. Another gardener, Thomas Hart, also occupied one of these.

<sup>1</sup> Batchelor, *op. cit.*, p. 457.    <sup>2</sup> Beavington, 'Early Market Gardening . . .', pp. 93-6.

<sup>3</sup> Pre-enclosure references to gardening are found for Old Warden, 1673, Beds. C.R.O., ABP/W/1673/89, and 1727, Old Warden Parish Register 1727 (Beds. C.R.O.), and for Maulden a tithe arrangement in respect of vegetables at Maulden, Beds. C.R.O., ABE/2.

<sup>4</sup> Batchelor, *op. cit.*, p. 457.

<sup>5</sup> Enclosure Commissioners' map for the parish of Sandy (Beds. C.R.O.), and Beavington, 'Early Market Gardening . . .', *loc. cit.*, 1965, p. 94.

<sup>6</sup> Young, *op. cit.*, p. 28.    <sup>7</sup> Beds. C.R.O., RJ1-46 (Sandy).

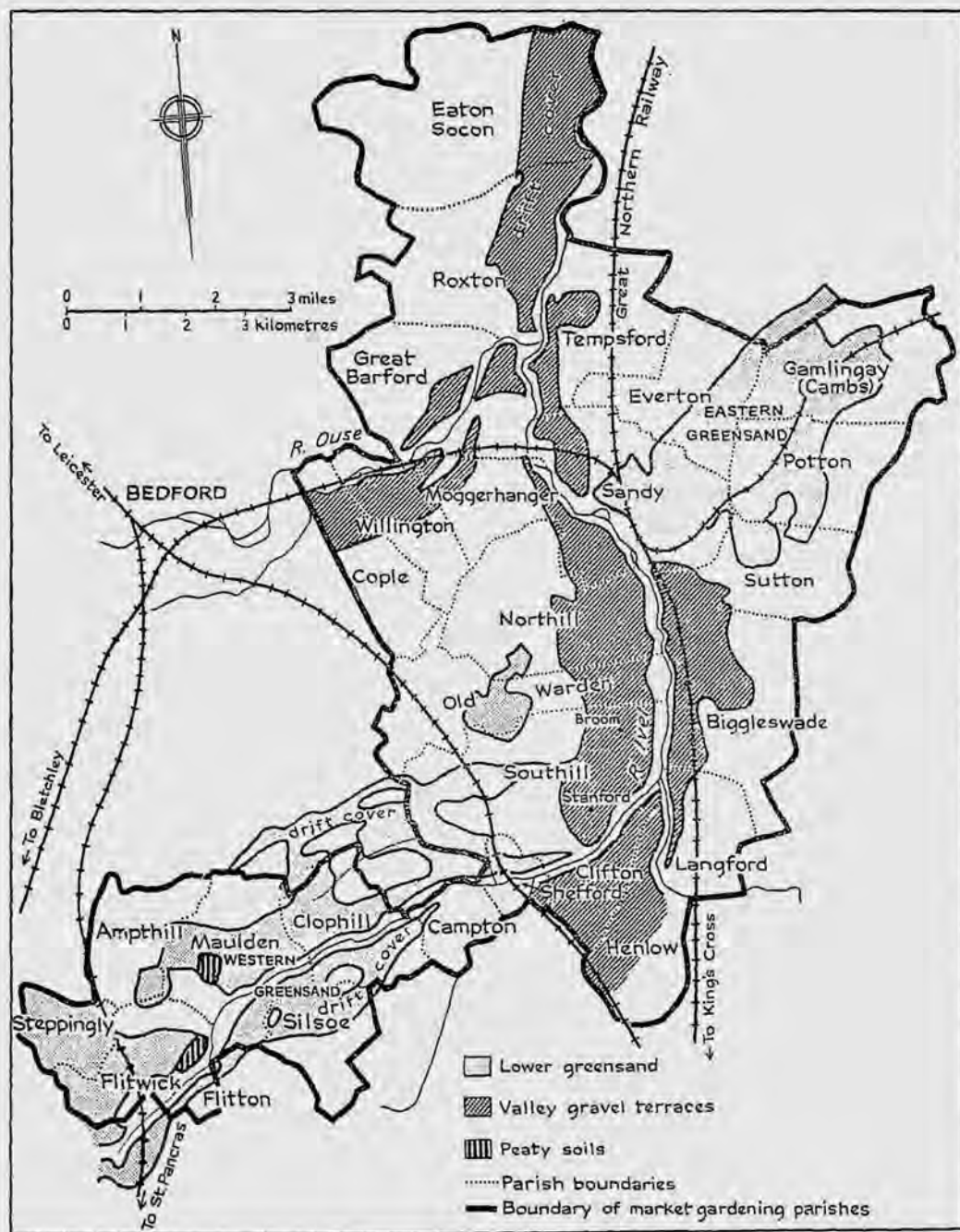


Fig. I

Location map showing the parishes of the market-garden area by the 1930's, the distribution of sandy land, and the railway network.

In the fifty years that followed enclosure there are four independent records of the number of gardeners, the lists of jurors for Sandy, the Sandy Parish Register, wills of gardeners, and the decennial census of 1841; evidence of the acreage and location comes from the Board of Trade, topographies, and tithe documents. Some sources relate to all the market-gardening parishes, others to particular ones.

The list of jurors for Sandy for the period 1780 to 1830<sup>1</sup> shows that there was a marked increase during the second decade of the century in the percentage of jurors denoted as gardeners (table 1).

TABLE I

|      | <i>Total jurors</i> | <i>Jurors denoted<br/>as gardeners</i> | <i>Percentage of jurors<br/>denoted as gardeners</i> |
|------|---------------------|----------------------------------------|------------------------------------------------------|
| 1780 | 12                  | 2                                      | 16.5                                                 |
| 1785 | 13                  | 2                                      | 15.4                                                 |
| 1798 | 9                   | 2                                      | 22.2                                                 |
| 1800 | 13                  | 2                                      | 15.4                                                 |
| 1810 | 28                  | 7                                      | 25.0                                                 |
| 1820 | 28                  | 17                                     | 60.7                                                 |
| 1830 | 23                  | 14                                     | 60.9                                                 |

From 1813 to 1830 the incumbent of Sandy entered fathers' occupations in the baptisms section of the parish register.<sup>2</sup> This record shows that 12 per cent of the children recorded between 1813 and 1819 were born to gardeners, whilst for the period 1820 to 1830 the corresponding figure was 19 per cent. Altogether, fifty-five different men were recorded as gardeners from 1813 to 1830 in Sandy. Assuming that the birth-rate in gardeners' families was not appreciably different from that in other families, then there was an increase not only in gardeners but in sons to follow their fathers' occupation.

The decennial census returns included occupations for the first time in 1841, but there are difficulties in extracting accurate data.<sup>3</sup> Table IV includes every adult who seemed to be a market gardener. Sandy had 58 gardeners in 1841, and even if some allowance is made for this figure being too high there would seem to be more gardeners in 1841 than in the period 1813 to 1830. Biggleswade appeared to have 49 gardeners but this figure, which is not in accord with other data, is discussed below. Other parishes with notable populations of gardeners in 1841 are Potton (21), Maulden (22), Northill (19), and Eaton Socon (16).<sup>4</sup>

The number of surviving wills proved between 1800 and 1850 of gardeners in the market-gardening parishes indicates the importance of gardening in Sandy (table II), and provides a measure of the prosperity of the gardening industry.<sup>5</sup> The

<sup>1</sup> *Ibid.*    <sup>2</sup> Held by the Rector, Sandy Parish Church.

<sup>3</sup> P.R.O. There is not always a clear distinction between "gardener" and "gardener's labourer," a child of a gardener is described as "gardener," and the return is generally of poor quality, parts being almost illegible.

<sup>4</sup> Beds. C.R.O., parish wills file.    <sup>5</sup> *Ibid.*

wills for Sandy showed that nearly all these gardeners owned a cottage, garden land, and often outbuildings. Of the more well-to-do gardeners, William Sutton (1838) owned two cottages and 24 acres, John Marshall's estate (1807) was valued at £180, and William Bean's (1820) at £550, while John Skilleter (1819) left his widow a legacy of £40 per annum. Eight wills specified the area of land, the average being 7 acres.

TABLE II  
NUMBERS OF SURVIVING WILLS OF GARDENERS,  
1800-50

|             | Gardeners' wills | Total wills |
|-------------|------------------|-------------|
| Sandy       | 26               | 72          |
| Biggleswade | 6                | 52          |
| Potton      | 2                | 55          |
| Maulden     | 1                | 42          |

The estimates of the acreage of garden land in Sandy indicate a considerable increase during this period. In the 1790's it was reported as "three score and upwards but increases considerably,"<sup>1</sup> in 1801, "above 150 acres,"<sup>2</sup> whilst in 1810 "upwards of 200 acres."<sup>3</sup> An agricultural return of 1835 was made to the Statistical Department of the Board of Trade for Sandy and four other gardening parishes.<sup>4</sup> The investigator specified gardens under "other land," and "domestic gardens" were probably included. For Sandy the 493 acres of gardens and homesteads confirm that this parish was still the main centre of gardening, whilst 503 acres of waste show that the Greensand was largely uncultivated; 255 acres of "gardens" were recorded for Potton, and 140 for Blunham with Moggerhanger.<sup>5</sup>

The number of gardeners in 1841 and the acreage of gardens in 1835 indicate the average size of market gardens. These averages, 12 acres for Potton and 8½ acres for Sandy, compare closely with the size of the holdings of Sutton (12 acres) and Underwood (8½ acres).

In Biggleswade and three minor market-gardening parishes tithes were not commuted on enclosure, and the distribution of gardens can be accurately mapped from the Tithe Redemption Commissioners' map and schedule.<sup>6</sup> The latter includes the

<sup>1</sup> Batchelor, *op. cit.*, p. 457. This is an answer in a questionnaire issued in the mid 1790's, by Sir John Sinclair, President of the Board of Agriculture.

<sup>2</sup> Britton and Brayley, *op. cit.*, p. 78.

<sup>3</sup> Cooke, *op. cit.*, pp. 18-19.

<sup>4</sup> Published in *J. R. Statist. Soc.*, 1 (1838), pp. 89-96. Bedfordshire was chosen for a pilot survey. Questionnaires were sent direct to the clergy, but returns were received for only twenty-seven of the 126 parishes. The complexity of the forms, with fifty-two questions, and the unofficial approach (the Home Office had arranged the completion of the nine-point 1801 returns through the diocese) led to the failure of the scheme. See also D. B. Grigg, 'The changing agricultural geography of England: a commentary on the sources available for the reconstruction of the agricultural geography of England, 1790-1850', *Trans. Inst. Brit. Geog.*, xli, p. 82.

<sup>5</sup> The form for Northill was completed very loosely. The parish was a gardening centre but the round figure of 500 acres of "gardens" conflicts with other evidence and is disregarded.

<sup>6</sup> Tithe Redemption Awards and maps for the parishes of Biggleswade, Cople, and Willington are held at the Beds. C.R.O., and for Gamlingay at the Tithe Redemption Office.

acreage of each parcel of garden land as one of some four categories of agricultural land use, whilst the map delineates and numbers the fields and shows settlement. Table III gives the acreage of gardens in the four parishes, and fig. II shows the tithe map for Biggleswade (1838), with the 37 acres of gardens and the arable and grass fields reconstructed from the Award. The gardens are clustered within and around the village core. Only one piece of 5 acres lies more than half a mile from the market square. The rest of the agricultural land including the Ivel terraces was in medium and large farms, with gardening still a small industry. The figure of 49 gardeners which the 1841 census appears to show for Biggleswade (only 9 fewer than at

TABLE III

|             | <i>Number of gardens<br/>over half an acre</i> | <i>Total acreage<br/>of gardens over<br/>half an acre</i> | <i>Largest<br/>(acres)</i> | <i>Average<br/>(acres)</i> |
|-------------|------------------------------------------------|-----------------------------------------------------------|----------------------------|----------------------------|
| Biggleswade | 14                                             | 37                                                        | 6 $\frac{3}{4}$            | 2.6                        |
| Cople       | 6                                              | 9 $\frac{3}{4}$                                           | 2 $\frac{3}{4}$            | 1.6                        |
| Willington  | 5                                              | 6                                                         | 1 $\frac{1}{2}$            | 1.2                        |
| Gamlingay   | 3                                              | 5                                                         | 2 $\frac{1}{2}$            | 1.7                        |

Sandy) cannot be reconciled with the tithe Award of only three years earlier, nor with the dearth of gardeners' wills for Biggleswade (table II).<sup>1</sup> The Award cannot be discounted for it is a meticulous document with garden land clearly distinguished since there had been a special tithe payment for vegetables.<sup>2</sup>

The nature of the sources during this period ensures a certain amount of controversy on the development of the gardening industry. Nevertheless, it is clear that there were increases, probably marked increases, particularly during the second and third decades of the nineteenth century, in the number of gardeners and in the acreage of gardening land in Sandy. Gardening in other centres grew steadily during the first half of the nineteenth century, but the Bedfordshire gardening industry which had been nurtured in Sandy for over two centuries was still largely concentrated there. The industry had been carried on continuously throughout this half-century on small, family enterprises and there is no evidence that parliamentary enclosure led to the elimination of the small yeoman gardener. Indeed, in Sandy enclosure allowed some gardeners to increase their acreage with former unenclosed land on the Ivel terraces. Moreover, the financial turnover of many gardeners must have been quite considerable. This is indicated by the intensive nature of inputs and outputs including the high rents and labour costs, and by the marketing

<sup>1</sup> The difficulties of the 1841 census have already been mentioned. The figure of 49 may include gardeners' sons, labourers, and those who sold produce from their cottage gardens.

<sup>2</sup> The Vicar of Warden wrote in the parish register (Beds. C.R.O.) in 1727, concerning tithe charges "the Gardiners pay me five shillings per annum for an Acre of Garden ground. N.B. Some of the Gardiners at Sandy pay eight shillings per Acre." See also H. C. Prince, 'The tithe surveys of the mid-nineteenth century', *Agric. Hist. Rev.* VII, 1959, pp. 14-26, who discusses the accuracy of the tithe documents.

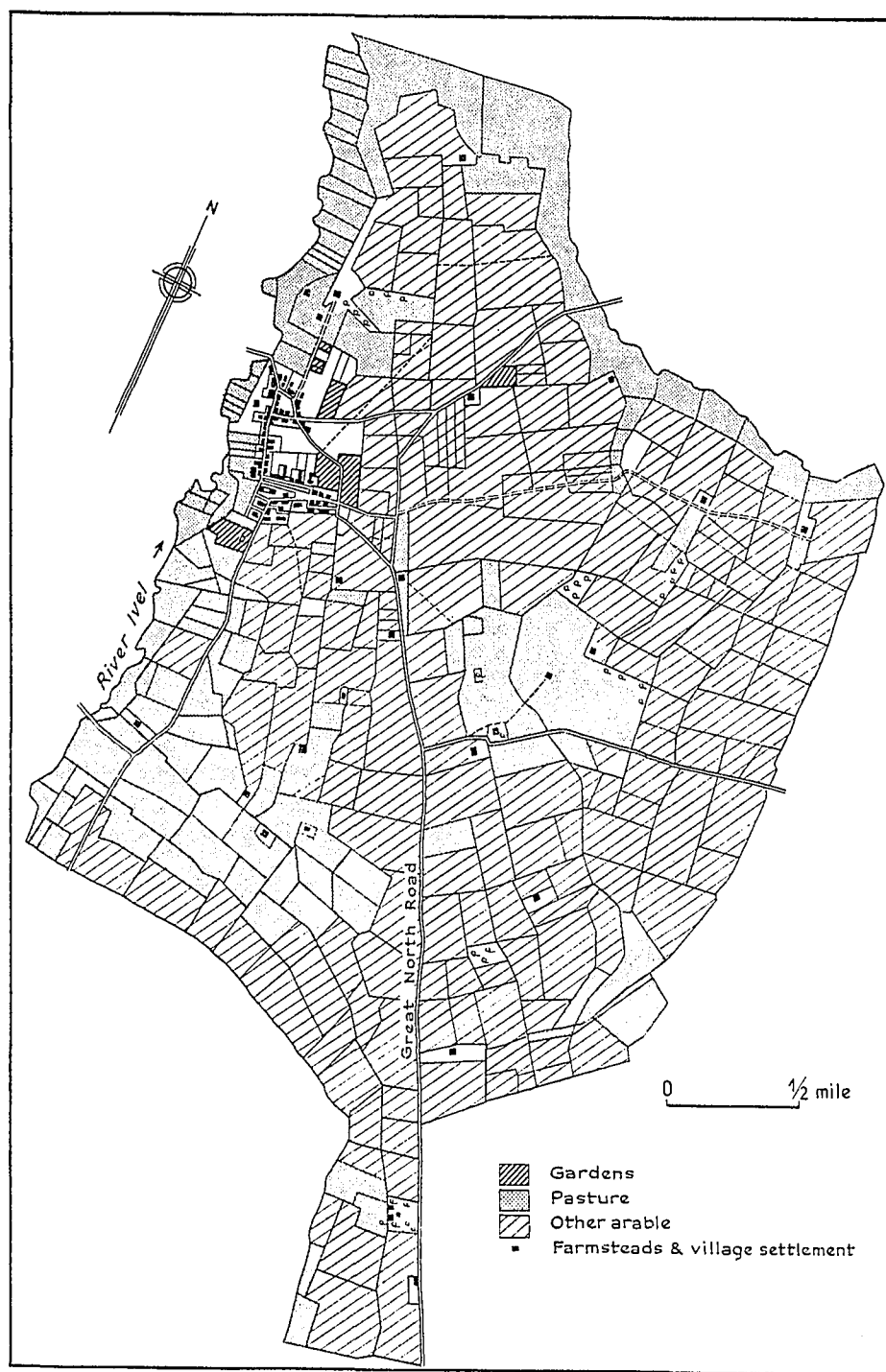


Fig. II

Agricultural land use in the parish of Biggleswade in 1838, reconstructed from the tithe map and Award. The Ivel terraces (fig. 1) which by the 1920's were mainly devoted to market gardening were largely under arable farming in 1838.

arrangements. The contention that gardeners as a group were prosperous is also supported by the large number of Sandy jurors who were gardeners and by the surviving wills of gardeners. Clearly gardeners were prominent among the land and property owners and did not belong to the poorer classes.

#### PERIOD OF RAILWAY TRANSPORT

For seventy years from the mid-century to the end of the First World War the railways of Bedfordshire (fig. 1) played a vital role in the growth and location of the market-gardening industry. The important line was the Great Northern, built from King's Cross to York along the Ivel valley through Biggleswade and Sandy and opened in 1851. Six years later, a supplementary line was constructed by Captain Peel "from the Great Northern station at Sandy to Potton . . . for use of London manure by his tenants . . . and taking from thence passengers, garden produce etc."<sup>1</sup>

In 1857 the Midland Railway built a line from Leicester to join the Great Northern at Hitchin via Bedford, Southill, and Shefford, and in 1868 extended the line from Bedford via Ampthill and Flitwick to St Pancras. A contemporary author states "The Great Northern which runs through the heart of these market gardens has proved a most valuable acquisition . . . [whilst] . . . the Leicester to London [line] . . . will complete the accommodation both in the carriage of their goods and in the supply of manure."<sup>2</sup>

The railways brought three major advantages to the Bedfordshire market-gardening industry. Far quicker journeys were afforded to London, an already established market, new markets were opened up in the Midlands and north, and vast quantities of horse manure were brought from the railway stables in London to the sidings in Bedfordshire where it cost from 1s. 3d. a ton<sup>3</sup> (plus carriage of 6s. or 7s. a ton).<sup>4</sup> It is claimed that dependence on these heavy imports of manure "concentrated (market gardening) within two miles of the railway sidings."<sup>5</sup> The most suitable soils, however, were generally no more than two to three miles from the sidings, except on the Western Greensand where market gardening remained a small industry during this period. A similar control is reported in the case of potato growing in Hertfordshire. Here a charge of 4s. 6d. a ton for manure, including carriage,<sup>6</sup> confirms the charge at Sandy station if allowance is made for the greater distance. There is little contemporary evidence of the immediate impact of the railway on the industry. It is likely, however, that down to the late 1880's a decreasing quantity of vegetables was sent by horse and cart to London.<sup>7</sup> In this period of railway transport evidence is considered for the industry's expansion, its intensive character, and the development of small holdings.

The magnitude of the industry's expansion during the second half of the nine-

<sup>1</sup> *Herepath's Journal*, 30 May 1857, British Transport Commission Archives.

<sup>2</sup> W. Bennett, 'The Farming of Bedfordshire', *J.R.A.S.E.*, xviii, 1857, p. 8.

<sup>3</sup> Evidence in interview, in Aug. 1959, with Mr G. Truin, retired market gardener of Sandy.

<sup>4</sup> H. Evershed, 'Market Gardening', *J.R.A.S.E.*, vii, 1871, p. 432. <sup>5</sup> *Ibid.*, p. 432.

<sup>6</sup> J. T. Coppock, 'Agricultural Changes in the Chilterns, 1875 to 1900', *Agric. Hist. Rev.*, ix, pt 1, 1961, p. 15.

<sup>7</sup> Evidence in interview with Mr G. Truin,

teenth century is shown by the evidence of contemporary writers, estate papers, and a variety of statistical data. In 1857 the "eastern part of Bedfordshire" contained "some of the finest market gardens in the kingdom," but the writer does not mention gardening in the parishes he visited in the Ivel valley north of Sandy, or in the Ouse valley, or on the Western Greensand.<sup>1</sup> Evershed in 1871, affirms an increase in market gardening "due to the increased population," and refers to many "garden farmers" with under 10 acres and others with 10-50 acres.<sup>2</sup> The main growth, however, was still to come.

In 1906 it was claimed "the area has greatly increased—the output is said to have quadrupled—during the last 20 years." Large farms had been divided into small holdings and "entire villages converted into market gardens."<sup>3</sup>

The growth in the later nineteenth and early twentieth centuries involved all four major areas, the Eastern Greensand, the Ivel terraces, the Ouse terraces, and the Western Greensand.<sup>4</sup> In 1912 an agricultural survey of the former heaths of the Eastern Greensand between Sandy, Potton, and Gamlingay referred to the "wonderful changes" since 1875 when this land was described as "So sterile . . . that in places it can support little but Scotch fir."<sup>5</sup> The five-mile-long terrace between Shefford and Sandy that includes the villages of Stanford and Broom (fig. 1) was developed for market gardening "at the turn of the century."<sup>6</sup> Elsewhere in the Ivel valley large farms had become market gardens by 1914, comprising an "in-filling" of the established area.<sup>7</sup> In 1901, an area of 4,056 acres of river terrace and clay land in the Ouse valley, consisting of the parishes of Willington and Cople, was sold from the Bedford estate and resold in farms and small holdings.<sup>8</sup> About half the acreage became market gardens, and a station was opened on the railway at Willington for market-garden traffic.<sup>9</sup> Between 1909 and 1911 there were sales of a further 1,277 acres of the Bedford estate in Maulden on the Western Greensand.<sup>10</sup> The land was divided into small holdings and most of them became market gardens. In both newly developing areas many holdings were taken by growers from Sandy and Biggleswade.<sup>11</sup>

<sup>1</sup> Bennett, *loc. cit.*, pp. 8, 18.      <sup>2</sup> Evershed, *loc. cit.*, p. 432.

<sup>3</sup> E. A. Pratt, *Transition in Agriculture*, 1906, p. 104.

<sup>4</sup> Market gardening did not spread on the Greensand west of Ampthill, however. Most of this land was in the Bedford estate, and remained so.

<sup>5</sup> T. Rigg, 'Soils and crops of the market garden district of Biggleswade', *J. Agric. Sci.*, vii, pt iv, 1916, pp. 397-9. Fieldwork of this survey was carried out in 1912-13.—Priv. comm., Sir Theodore Rigg.

<sup>6</sup> *Ibid.*, p. 399.

<sup>7</sup> Report of H. Trustram Eve (surveyor) in First Annual Report of Bedfordshire County Council Smallholdings and Allotments Committee, July 1910.

<sup>8</sup> Bedford Office, Bedford Estate Papers. The documents include a letter to the Duke of Bedford from his agent recommending a sale *en bloc* so that the good land would sell the bad. The land was purchased and resold by Keebles, brick-makers of Peterborough.

<sup>9</sup> Pratt, *op. cit.*, p. 104.

<sup>10</sup> Bedford Office, Bedford Estate Reports, 1909-11, and Bedfordshire County Council Smallholdings and Allotments Committee Reports. There were three separate sales of 231 acres, 675 acres, and 371 acres in Maulden.

<sup>11</sup> A. Ransom, 'Agriculture' in W. Page (ed.), *The Victoria History of the Counties of England: A History of Bedfordshire*, II, 1908, p. 138. Mr A. J. Woodward whose father took a small holding in Maulden in 1911 confirmed in interview that other growers also moved from Biggleswade to Maulden at that time.

Fieldscale production of certain vegetables was common by the turn of the century. Many farmers with suitable land took advantage of the local skilled labour and vegetable marketing channels to include crops of brussels sprouts, potatoes, and onions in their rotations. Others sub-let "their best fields to the market gardener."<sup>1</sup>

The maps from Rigg's meticulous survey,<sup>2</sup> four of which are shown in fig. III, illustrate the extent of market gardening by 1912. Some vegetables, such as onions and parsley, were concentrated almost entirely on the Ivel terraces; others, such as white turnips, were largely confined to the Eastern Greensand; whilst others, particularly early potatoes, were distributed widely over all the sandy land. Production of most vegetables ended abruptly at the boundaries with the adjoining clay land. Brussels sprouts, however, had spread on to the adjoining farmland.

The extent of the industry's growth in this period, 1851-1919, is further confirmed by evidence from the agricultural and population censuses, and railway goods tonnages. The agricultural censuses show an increase from 3,885 to 7,997 acres between 1885 and 1896 in respect of land in Bedfordshire "used by market gardeners for the growth of vegetables and other garden produce," (fig. IV).<sup>3</sup> About 90 per cent of the market-garden acreage in Bedfordshire each year was located in the thirty parishes. The corresponding information for the surrounding parishes emphasizes this concentration.

Evidence from the population censuses (table IV), shows a 66 per cent increase in the number of gardeners between 1851 and 1901 in the three main parishes. These figures are subject to the problems of identification and definition already discussed.<sup>4</sup>

TABLE IV  
NUMBERS OF MARKET GARDENERS IN SANDY, BIGGLESWADE,  
AND POTTON, 1841-1901

|             | 1841 | 1851 | 1861 | 1881 | 1901  |
|-------------|------|------|------|------|-------|
| Sandy       | 58   | 67   | 67   | 76   | 100 + |
| Biggleswade | 49   | 52   | 54   | 74   | 85    |
| Potton      | 21   | 22   | 23   | 48   | 45    |
| Totals      | 128  | 141  | 144  | 198  | 230 + |

The populations of parishes on clay land around the market-gardening district declined in the main by 30 to 40 per cent between 1871 and 1901. Yet a greater

<sup>1</sup> Rigg, *loc. cit.*, pp. 401-5.    <sup>2</sup> *Ibid.*, pp. 425-31.

<sup>3</sup> Agricultural Returns. This item was required from 1874 to 1896 in these returns. The earlier years, however, did not show all market-garden land, some parishes which had market gardens showing nil returns.

<sup>4</sup> Figures for 1851 and 1861 were obtained from the P.R.O., whilst those for the two later years were supplied by the Registrar-General.

employment of people on the land is indicated during these thirty years by the principal market-gardening parishes which exhibited slight falls only, whilst Sandy's population increased by 25 per cent; parishes in which the industry was of



FIG. III

The distribution of four vegetable crops over the Ivel valley and Eastern Greensand, from Rigg's survey 1912-13. (Reproduced from the *Journal of Agricultural Science*, Cambridge.)

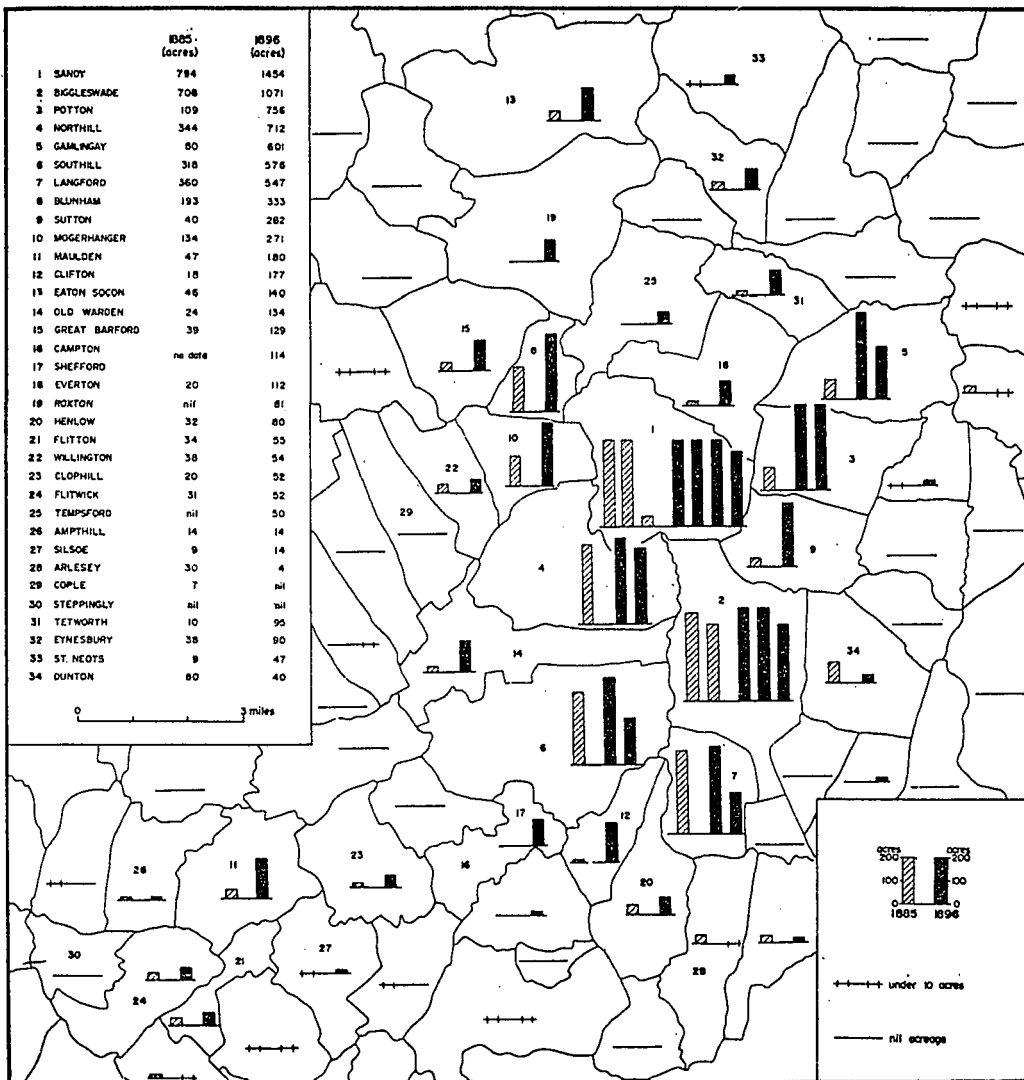


FIG. IV

The growth of market gardening from 1885 to 1896 and its concentration in the parishes of the Ivel valley and Eastern Greensand.

less importance at this time had falls of 10 to 25 per cent (fig. v).<sup>1</sup> The growth of market-gardening in the parishes of the Ivel valley and Eastern Greensand in the later nineteenth century is further emphasized by a highly significant relationship between the parish data for acreage of market gardens and percentage fall in population.<sup>2</sup>

Further evidence of the expansion of the industry is provided by two local

<sup>1</sup> Population censuses 1851-1901.

<sup>2</sup> A correlation coefficient of  $-0.772$  (significant at the 0.1 per cent level of probability) was found between these two variables.

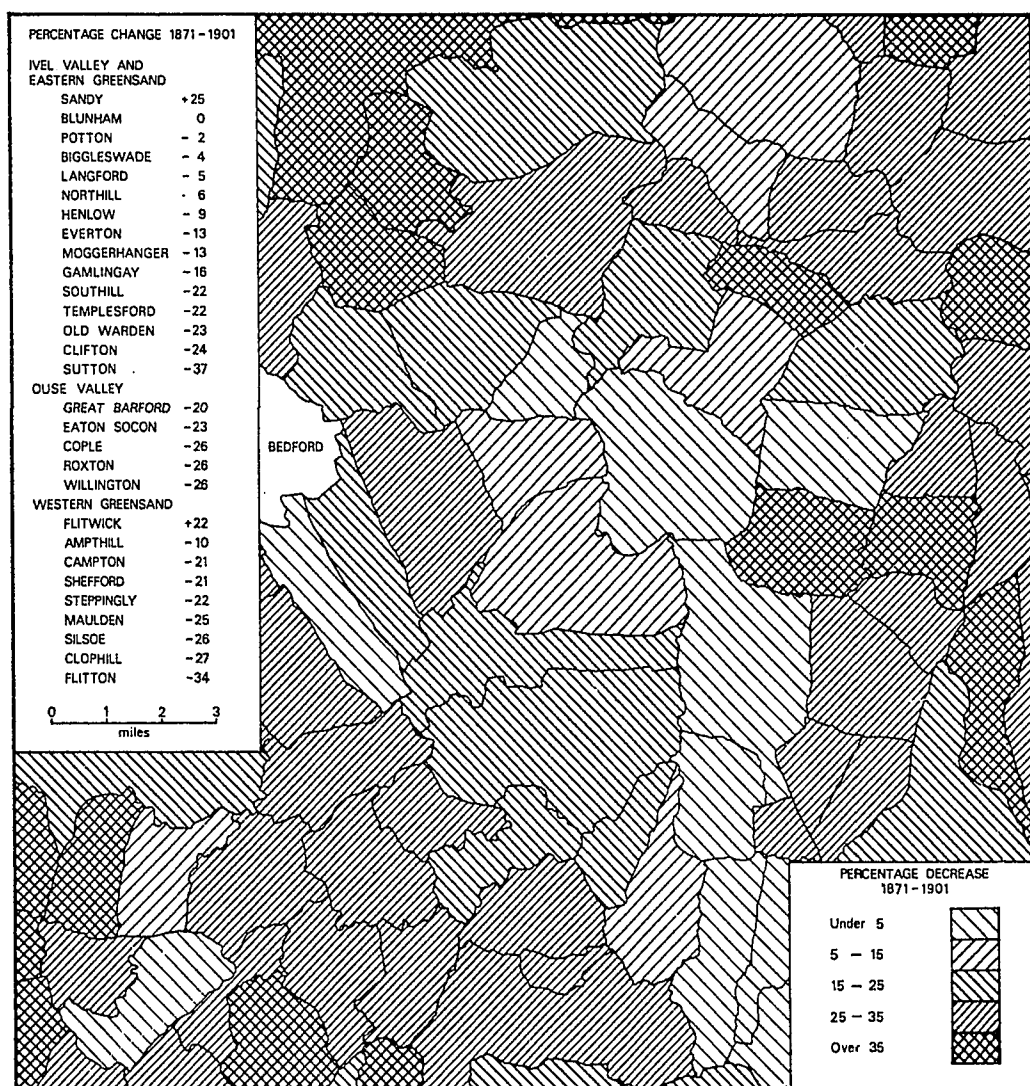


FIG. V

Stability of population in market-gardening parishes, 1871 to 1901. The map also reflects the small development of market gardening on the Western Greensand at this time. The Midland Railway may have stimulated urban growth in Ampthill and Flitwick, whilst the expansion of Bedford and the north Hertfordshire towns led to the growth of some adjacent parishes.

records of tonnages of merchandise from Potton railway station which survive for the years 1857 to 1860, 1896 to 1905, and also later periods (fig. vi).<sup>1</sup> Since Potton had no other significant industry most of the summer exports were vegetables. The average annual output for the two periods was 4,146 tons and 13,325 tons respectively. In 1905, a goods train, specially for vegetables, averaging fifty wagons, and with up to twice this provision in July, left Biggleswade for London four

<sup>1</sup> Beds. C.R.O. file and railway goods register inspected at Potton station, Aug. 1958.

days a week during the busy months:<sup>1</sup> A conservative estimate of 4 tons per wagon would give 3,000 tons or more per month from August to January, with probably 5,000 tons in July. Biggleswade is a large parish and these figures are quite feasible since Potton's total export for 1905 is 19,184 tons.

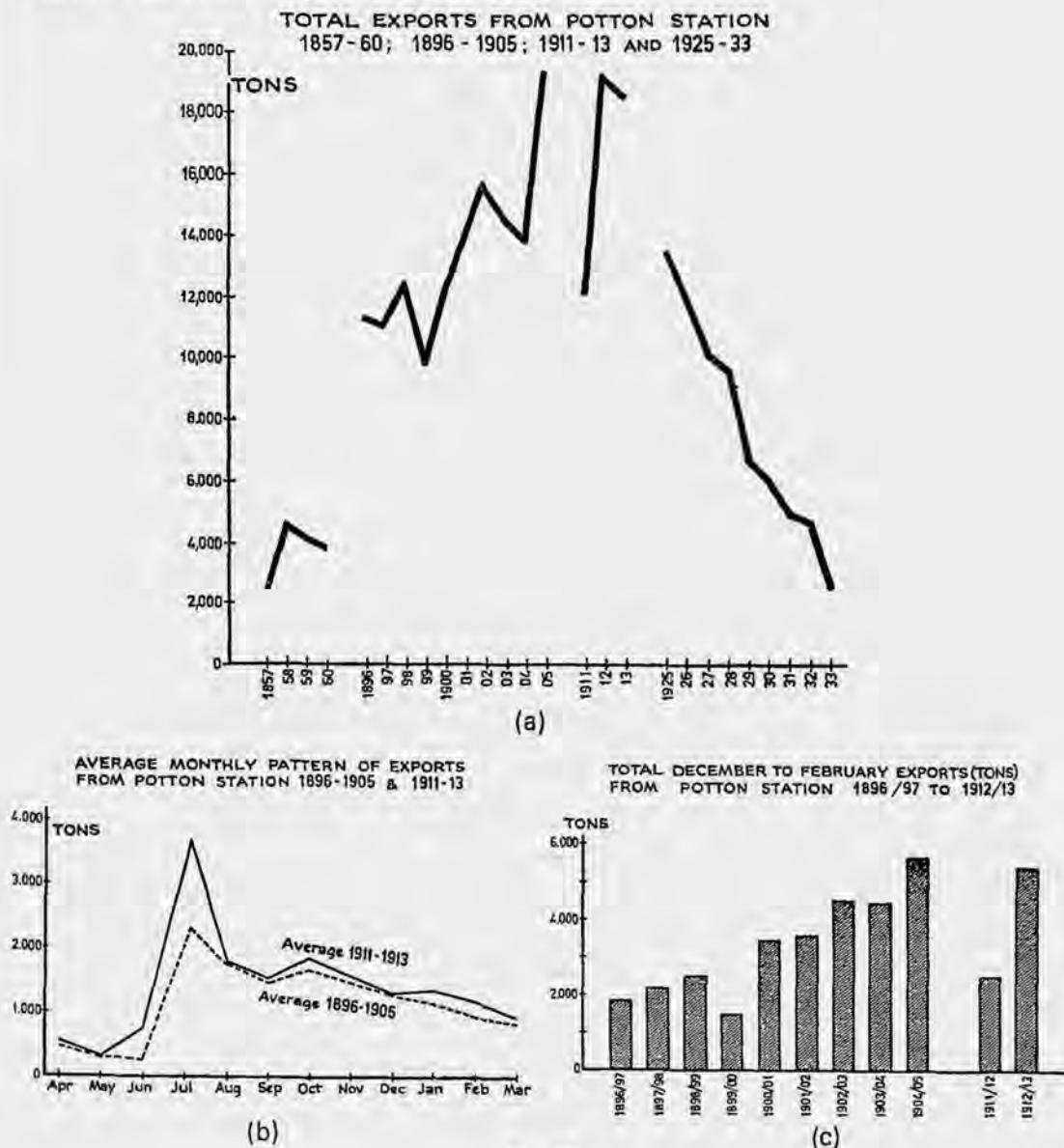


FIG. VI

(a) Rise and fall of the total exports from Potton railway station from 1857 to the 1930's. (b) Average monthly pattern of exports, 1896-1905, 1911-13, showing the peaks in July and October, and the sustained output through the winter reflecting respectively the export of early vegetables, autumn root vegetables, and brussels sprouts. (c) The increasing output of brussels sprouts. (The harvest of 1911-12 was severely affected by the low rainfall of 1911.)

<sup>1</sup> Pratt, *op. cit.*, p. 106.

Clearly there was a very considerable increase in market gardening in Bedfordshire in this period, and particularly in the later nineteenth and early twentieth centuries. This is confirmed by the large areas of the Ivel and Ouse terraces and of the Greensand heath that came under vegetable production, by the evidence for an increase in the number and size of holdings, the growing practice of production at farm scale, the increase in market gardeners, and by the more stable levels of population in the market-garden parishes. The estimate of a fourfold increase in vegetable production is supported by the twofold increase in the acreage of market gardens between 1885 and 1896, and the rail tonnages from Biggleswade and Potton.

Ransom states emphatically his explanation for the growth: "the fact that the Great Northern Railway and the Bedford to Cambridge branch . . . have intersected at right angles . . . [where] . . . the soil was especially adapted to market garden culture."<sup>1</sup> This explanation, however, neither fully relates these two causes nor examines others that led to the growth of the industry. From the second half of the nineteenth century market gardening prospered in response to the rising standard of living and growing population. (The United Kingdom's population had increased from 11.9 million in 1801 to 22.3 million in 1851, 34.3 million in 1891, and 42.1 million in 1911.) The expansion of the rural producing areas such as Bedfordshire (table v) was accelerated still further as cities built over the market gardens around them. Moreover, cottage gardens provided the vegetables for a

TABLE V  
TOTAL ACREAGE OF MARKET GARDENS, 1885-96  
(leading counties)

|                                           | 1885  | 1890   | 1896   | % increase<br>1885-96 |
|-------------------------------------------|-------|--------|--------|-----------------------|
| Bedfordshire                              | 3,885 | 6,025  | 7,997  | 106                   |
| Kent                                      | 8,817 | 11,308 | 12,972 | 47                    |
| Worcestershire                            | 2,537 | 4,599  | 6,139  | 142                   |
| Cornwall                                  | 1,268 | 1,305  | 2,101  | 65                    |
| Lancashire                                | 1,308 | 1,606  | 1,916  | 46                    |
| Lincolnshire<br>(Kesteven and<br>Lindsey) | 884   | 935    | 1,582  | 80                    |

dwindling proportion of families as the population became concentrated in cities. As a consequence of all these causes there was a steep increase in demand for vegetables which was met not only by an increased domestic production but also by exponentially rising imports of vegetables (table vi).<sup>2</sup> The evidence confirms that

<sup>1</sup> Ransom, *loc. cit.*, p. 138.

<sup>2</sup> Annual Statement of Trade for 1860, B.P.P. LX, 1861, p. 1; for 1870, LXIII, 1871, pt II, p. 1; for 1880, LXXXVIII, 1881, p. 1; for 1890, LXXXII, 1891, p. 1; for 1900, LXXVI, 1901, pt I, p. 739; for 1910, LXXIX, 1911, p. 393.

by the turn of the century the huge demand for vegetables resulted from a marked dietary change as well as the increased urban population.<sup>1</sup>

TABLE VI

IMPORTS OF VEGETABLES INTO THE UNITED KINGDOM, 1860-1910

| Year | Onions    |             |                    | Vegetables<br>(unenumerated)<br>Value |
|------|-----------|-------------|--------------------|---------------------------------------|
|      | Bushels   | Total value | Cost per<br>bushel |                                       |
|      |           | £           | s. d.              | £                                     |
| 1860 | 300,521   | 94,554      | 6 5                |                                       |
| 1870 | 1,084,162 | 390,830     | 7 2                | 86,428                                |
| 1880 | 2,256,897 | 534,357     | 4 9                | 369,717                               |
| 1890 | 3,871,195 | 724,020     | 3 8                | 773,590                               |
| 1900 | 7,087,105 | 852,400     | 2 5                | 766,394                               |
| 1910 | 8,123,910 | 1,042,674   | 2 7                |                                       |

Moreover, the depression in corn prices contributed to a shift in resources to the more prosperous market-gardening industry and the lighter land. For example, Rigg observed in 1912 that "rank scrub, hawthorne and wild rose stretch almost continuously from Everton to Tempsford" on land on the Oxford Clay that was under cultivation "thirty or forty years ago."<sup>2</sup> Agricultural statistics confirm that between 1875 and 1910 the total corn acreages in these two parishes fell from 1321 to 674 acres. Sandy land, however, sold for high prices; a surveyor reports on land on the Ivel terraces at Biggleswade that "had always been farmed and never gardened and hence the value to a market gardener was considerably increased."<sup>3</sup> Also the reluctance of landlords towards letting land for vegetable growing was lessened by the fact that market gardeners could pay high rents.

From enclosure, and indeed long before, gardening in Bedfordshire exhibited the traditional characteristics of intensive cultivation. In 1857 the author of the Prize Essay noted "during the spring and summer hundreds of these enterprising industrious men," and was surprised also at "the amount which this busy hive will extract from an acre of land."<sup>4</sup> Although by 1871 the horse-drawn plough had replaced the spade,<sup>5</sup> hand labour dominated the industry. In 1908 it was stated that "500 acres of market gardening land employed 50 more full time hands throughout the year than farming": an example was a 50-acre market garden with fourteen permanent hands.<sup>6</sup> By the twentieth century the wide range of vegetables traditionally grown in Bedfordshire, carrots, onions, potatoes, parsnips, turnips, radishes,

<sup>1</sup> Lord Ernle (R. E. Prothero), *English Farming, Past and Present*, 6th edn, 1961, p. 391.

<sup>2</sup> Rigg, *loc. cit.*, p. 395.

<sup>3</sup> Report of H. Trustram Eve in First Annual Report of Bedfordshire County Council Smallholdings and Allotments Committee, 1910.

<sup>4</sup> Bennett, *loc. cit.*, p. 8.

<sup>5</sup> Evershed, *loc. cit.*, VII, p. 432.

<sup>6</sup> Ransom, *loc. cit.*, p. 139.

peas, beans, cabbage, and cucumbers, now included marrows, beetroot, leeks, asparagus, spinach, lettuce, rhubarb, cauliflower, savoy, red cabbage for pickling, and brussels sprouts, as well as vegetables for seed.<sup>1</sup> In Bedfordshire the sandy soils encouraged growers to specialize in early potatoes, carrots, and salad crops, and the rail exports from Potton, 1896 to 1913, confirm this marked peak of production in July (fig. vi). The agricultural returns required few vegetables (for human consumption) before the First World War. However, in 1912 Rigg measured all plots of vegetables in the Ivel valley and on the Eastern Greensand, and reconstructions from his maps show approximately the following acreages: brussels sprouts 3,576, carrots, 834, onions 759, white turnips 657, spring cabbage 655, parsley 611, green peas 504, parsnips 475, and marrows 158.<sup>2</sup> The distribution of brussels sprouts, onions, early potatoes, and white turnips is shown in fig. iii.

Two crops a year and interplanting were common practice at this time. There were no rotations, but a crop harvested in early summer was often followed by one harvested in the autumn. Thus on the Eastern Greensand the early potato crop was followed by white turnips. Carrots and radishes were commonly broadcast together, the carrot crop being left to develop when the radishes were pulled in March. Potatoes were often interplanted with brussels sprouts or runner beans, and parsley was always interplanted, usually in the onion crop. Vegetables needing considerable hand labour in thinning, weeding, and harvesting were prominent.<sup>3</sup>

Bedfordshire catered for the demand for bunched early carrots in northern cities. During July and August 1905, 602 tons of carrots, comprising it seems about 866,000 bunches of ten carrots each, were sent from Sandy station alone to the Glasgow wholesale market, the record daily consignment being 57,000 bunches, "and every bunch had to be counted as it was thrown into the waggons."<sup>4</sup> Carrots kept their importance in Bedfordshire down to the First World War, 1,006 acres and 1,011 acres being grown in the thirty parishes of the market-gardening district in 1906 and 1912 respectively. About one-half was grown in Sandy, Biggleswade, and Potton, with Sandy contributing 23 per cent of the total.<sup>5</sup>

The potato crop came into prominence in Bedfordshire during the nineteenth century. By the 1880's it had become very profitable, as in other areas of concentrated production,<sup>6</sup> and the cultivation of early potatoes spread widely over the Eastern Greensand where the crop was ready for harvesting up to two weeks earlier than on the Ivel terraces.<sup>7</sup> Certainly by the turn of the century potatoes had the largest acreage of any vegetable in Bedfordshire, with Early Puritan and King Edward VII as the leading early and main-crop varieties.<sup>8</sup>

The two vegetables that attracted most comment in Bedfordshire at the beginning of the twentieth century were onions, the home production of which had

<sup>1</sup> Pratt, *op. cit.*, pp. 104-5.

<sup>2</sup> Rigg, *loc. cit.*, pp. 412, 425-31.

<sup>3</sup> *Ibid.*, pp. 385-431.

<sup>4</sup> Pratt, *op. cit.*, p. 107.

<sup>5</sup> Parish summaries of the agricultural returns.

<sup>6</sup> Lord Ernle, *op. cit.*, pp. 390-1.

<sup>7</sup> Rigg, *loc. cit.*, p. 408.

<sup>8</sup> T. Rigg, 'The Market Garden District of Biggleswade, Bedfordshire', *J. Board Agric.*, xxiv, 1917, pp. 834-5.

steeply declined, and brussels sprouts, which were spreading spectacularly; about 30 per cent of the England and Wales acreage of onions, and 40 per cent of the brussels sprouts were grown in Bedfordshire in 1914.<sup>1</sup>

From pre-enclosure times onions had been important in Bedfordshire gardening, emerging as the leading crop in the early nineteenth century as production became concentrated on the Ivel terraces at Sandy. In the second half of the century they were grown at field scale on the Ivel terraces, but never attained any importance on the Greensand (fig. III), the acreage of onions in Potton and Maulden being negligible. The onion crop received very intensive treatment with a carefully prepared and heavily manured seed-bed, followed by the hand operations of planting, hoeing, harvesting, and drying.<sup>2</sup> The crop was dried first on the ground and then in high, louver-boarded, black barns that can be seen today on the flat lands around Sandy and Biggleswade. In the heyday of onion production about 2,000 acres had been grown annually in the Ivel valley,<sup>3</sup> a feasible estimate, for in 1906, when production had sharply declined, 510 acres were returned for the parishes of the Ivel valley. The decline coincided with the steep rise in imports of onions from 300,521 bushels in 1860 to over 7 million bushels by 1900, and 7.5 million in 1905.<sup>4</sup> They were sent to Stratford Market from Egypt, Spain, and Holland, and sold as cheaply as 3s. 3d. per hundredweight.<sup>5</sup> Table VI shows the fall in the average price from 1860.<sup>6</sup>

Brussels sprouts had by 1905 "developed into a very large industry" during the previous "seven or eight years."<sup>7</sup> The marked development is reflected in the increased winter exports from Potton railway station (fig. VI). The crop became established widely on the Ivel terraces, the Eastern Greensand, and on heavier soils in farm rotations.<sup>8</sup> From the beginning Bedfordshire grew about 40 per cent of the England and Wales production, with Worcestershire next with 10 to 12 per cent.<sup>9</sup> The hardy green varieties adopted, the railway facilities, and the marketing channels and skilled labour of an established market-garden district, all helped to make Bedfordshire the main centre for production. Moreover, the crop took up the slack caused by the decline in onion growing, brought in a steady income in the winter months, and fitted well into farm rotations, acting as a good cleaning crop and needing less labour than most vegetables. The expansion was also due to the ready acceptance of brussels sprouts in the British diet.

Throughout this period evidence suggests that holdings producing vegetables continued to grow in number and size. In 1857 there is a reference to the "many

<sup>1</sup> County summaries of the agricultural returns. Brussels sprouts were included first in these returns in 1914, and onions in 1906. Thus the acreage of onions was not recorded for the years of greatest home production, though it seems that Bedfordshire had for long been the leading producer and remained so for some years after the First World War. It may be that the acreage fell more steeply in Bedfordshire than in other counties, for in the partial recovery from 1906 the Bedfordshire share of the England and Wales acreage rose from about one-fifth to one-third.

<sup>2</sup> Evidence in interview with Mr G. Truin. <sup>3</sup> Pratt, *op. cit.*, p. 105.

<sup>4</sup> Annual Statement of Trade for 1905, B.P.P. CXVI, 1906.

<sup>5</sup> Rigg, 'Market Garden...', *loc. cit.*, p. 837; Pratt, *op. cit.*, pp. 104-6. <sup>6</sup> Annual Statement of Trade.

<sup>7</sup> Pratt, *op. cit.*, p. 106. <sup>8</sup> Rigg, 'Soils... Biggleswade', *loc. cit.*, pp. 397-410.

<sup>9</sup> Parish summaries of the agricultural returns (brussels sprouts acreages were required from 1914).

little freeholds" in the Sandy district,<sup>1</sup> and a further reference in 1871 to market gardens being under 10 acres, though it was said also there were others from 10 to 50 acres.<sup>2</sup>

In 1906 the market gardens in the Ivel valley were said to vary from 2 or 3 acres to 200 acres, though most of them were between 10 and 15 acres.<sup>3</sup> The agricultural census of 1905 shows that in the thirty parishes of the market-garden district there were some 500 holdings between 1 and 5 acres, and 680 between 5 and 50 acres, though it is not known how many grew vegetables.

A large increase in small market gardens in Bedfordshire came with the creation of statutory small holdings. A state policy empowering county councils to create small holdings was adopted in 1892, but the measure was permissive and controversial, and Bedfordshire County Council, like most authorities, took little action. The Smallholdings and Allotments Act, 1908, placed a duty on county councils to provide small holdings, with emphasis on tenancy, the intention being to provide the first rungs of the farming ladder for agricultural labourers.<sup>4</sup> From 1909 to 1915, when acquisitions ceased, the Bedfordshire County Council made seventeen purchases of land in the market-gardening parishes, the ones with the greatest demand for small holdings. The purchases, farms and individual fields, ranged from 10 to 368 acres and totalled 2,378 acres.<sup>5</sup>

In 1911 the Duke of Bedford introduced his own small-holding scheme, experimental in scale and rival in principle.<sup>6</sup> It aimed to show that in the use of public funds to aid land settlement "smallholders should be small owners and not small tenants," and "that small ownership may be set up on business principles." A 371-acre farm at Maulden was divided into single-plot holdings averaging 21 acres each. Purchase of the holding, including erection of a house and buildings, was provided for by a 100 per cent mortgage with repayment over thirty-five years "at rates slightly above that being paid to rent county council holdings." There was marked stability of occupancy and most of the mortgages were repaid within the period.<sup>7</sup> This plan, with growers recruited from Biggleswade, was a significant factor in the development of market gardening on the Western Greensand. But the scheme was not extended.

Indications of income in the later nineteenth century suggest, as in earlier years, that market gardeners were among the more wealthy of the agricultural community, whilst market-garden labourers earned more than the local farm labourers' 12s. a week. About 1871, onions sold for £11 a ton in March, yielding probably £150 an acre.<sup>8</sup> Costs of manure, labour, transport, and rent would leave a net

<sup>1</sup> Bennett, *loc. cit.*, p. 8.    <sup>2</sup> Evershed, *loc. cit.*, p. 432.    <sup>3</sup> Pratt, *op. cit.*, p. 104.

<sup>4</sup> Departmental Committee of Inquiry into Statutory Smallholdings, (Chairman, Professor M. J. Wise), First Report, Cmnd. 2936, 1966. H.M.S.O., pp. 9-12. Councils were given loans at 3½ per cent, grants for costs, and powers to acquire land. Commissioners would implement schemes, if necessary, and charge them to the council's expense. A summary of the background to the policy may be found in the report.

<sup>5</sup> Bedfordshire County Council Smallholdings Committee Reports, 1910-16.

<sup>6</sup> Copy of letter from Duke of Bedford's agent, 1911. Bedford Estate Papers.    <sup>7</sup> *Ibid.*

<sup>8</sup> Evershed, *loc. cit.*, pp. 432-3. Yields from the heavily manured onion crop were probably not appreciably below today's production.—Priv. comm., Mr J. Davies, Ministry of Agriculture.

return of about £100 an acre.<sup>1</sup> Early vegetables also seemed profitable. July prices in 1885 (with little variation by 1905) were: potatoes £4-£8 a ton, peas 6s.-8s. a bag, carrots, spring onions, and parsley 2s., 3s., and 1s. 9d. per dozen bunches respectively. The gross value of Sandy's export of carrots to Glasgow in 1905 was £7,200, representing £12 a ton.<sup>2</sup>

#### CHANGES FROM 1919 TO 1939

After the First World War fundamental changes in every aspect of the market-gardening industry were brought about by new factors, in particular the advent of the motor lorry, and the end of cheap stable manure with the replacement of the horse on city streets.

Some developments, already established, became accentuated after the war. There was strong wartime support for the settlement of ex-servicemen on the land.<sup>3</sup> The Land Settlement (Facilities) Act, 1919, required councils to give preference to ex-servicemen,<sup>4</sup> many of whom applied for land in the Bedfordshire market-garden parishes. Some sought full-time holdings, others wanted the economic security of a part-time plot. The Council made fifteen purchases in the market-garden parishes in 1919, nine in 1920, and two in 1921, when financial stringency terminated the scheme. The twenty-six acquisitions ranged from 4 to 552 acres and totalled 2,260 acres. They were divided into 660 roughly rectangular plots, of which about two-thirds were of 2 acres or less. On five estates there were some 95 plots between one-half and one-eighth of an acre.<sup>5</sup> The average size, however, was about 3½ acres. The 60-acre Church Field at Sutton is an example of division. About 200 ex-servicemen demanded a share of this land which was divided into fifty-seven acre strips, roadways taking up 3 acres.<sup>6</sup> Small plots were not created on clayey soil. Thus the sandy part of Village Farm, Sutton, included forty-five half-acre plots, whereas the remaining 90 acres on Gault Clay comprised only three holdings.

The tiny plots were unfenced and lacked buildings. The tenancies were often short, and this led to fragmented holdings. A grower in the 1920's and 1930's who wished to enlarge his acreage did so by renting relinquished plots or by acquiring privately owned land, and these were often in another part of the parish. Sometimes, however, a grower was able to rent an adjacent plot, and so processes of consolidation went on concurrently with increasing fragmentation. Of all holdings growing vegetables in Bedfordshire in the 1930's it is likely that about 20 per cent were in three to five parts, and 5 per cent in six or more parts.<sup>7</sup> About a half of the

<sup>1</sup> Confirmed by Pratt, *op. cit.*, p. 105.    <sup>2</sup> Pratt, *op. cit.*, p. 105, and London market prices from *The Times*.

<sup>3</sup> Wise Report, *op. cit.*, pp. 12-13.

<sup>4</sup> Councils encountered financial problems, however, in that land prices, building costs, and interest rates were much higher after the war.—*Ibid.*, pp. 12-16.

<sup>5</sup> Bedfordshire County Council Smallholdings Committee Reports 1919-22.

<sup>6</sup> The tenants were decided by a public draw in Sutton Village Hall.—Priv. comm., Aug. 1957, Mr Clare, Assistant County Land Agent.

<sup>7</sup> No records exist of the pattern of market-garden holdings at this time. The percentages are based on a later survey by L. G. Bennett, *The marketing of horticultural produce grown in Bedfordshire, West Cornwall, Wisbech*,

unfragmented holdings were under 5 acres. Most of these were worked on a part-time basis, providing the tenant with a supplementary income for work at week-ends and in the summer evenings, though the tenants were no longer solely agricultural labourers, as before the war. A bird's-eye view of the pattern of the Bedfordshire market-gardening district in the 1930's would show a remarkable patch-work. The distinctive estates of the County Council comprised rectilinear assemblages of tiny plots set within the mass of larger and less regular parcels of land formed by private division of farms, with little clusters of old enclosures within the villages. These varied units lie within the framework of the boundaries drawn by the enclosure commissioners and the ancient, irregular boundaries of the former open fields. This intensely fragmented pattern was not typical of other vegetable-growing areas such as south-west Cornwall, the Fens, Kent, or the Lea valley.<sup>1</sup>

The motor lorry gave great freedom to the location of market gardening. It carried produce direct to market and so accelerated the spread of market gardening on the productive Western Greensand, parts of which are up to five miles from a railway station. The lorry and the agricultural tractor also made possible the spread and large-scale cultivation of brussels sprouts over the boulder clay farmland. Moreover, the lorry offered the grower efficient and flexible marketing. Produce could be taken direct from the fields to the wholesale market or retail shop by the grower himself or by various wholesalers including other growers, or by haulage contractors specializing in vegetables. Also, road transport was cheaper than rail, especially for small consignments. By the 1930's the lorry transported the bulk of the vegetables from Bedfordshire and rail exports had sharply declined (fig. v).<sup>2</sup>

However, as horses disappeared from the city streets stable manure became scarcer, and supplies ended by the later 1930's. The organic-matter content and water-holding capacity of these specially coarse sandy soils became very low, so that although chemical fertilizers provided nutrition under humid conditions they were of little use in dry summers. Even when the Greensand soils had been heavily manured yields depended on the rainfall during the period of growth.<sup>3</sup> This is verified by a correlation between the October exports (mainly vegetables) from Potton railway station for 1896 to 1905, and for 1911 to 1913,<sup>4</sup> and the rainfall at Potton for July, August, and September of each year.<sup>5</sup> Hence in the 1920's and 1930's soil productivity declined. This together with other causes, namely the drift of labour to the towns, economies of large-scale production, and the need to diversify production with less exhaustive crops, led to a change towards more extensive

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and the Lea Valley, University of Reading, Department of Agricultural Economics, Miscellaneous Studies, no. 12, 1957, p. 14.

<sup>1</sup> L. G. Bennett, *op. cit.*, p. 14. Neither was such intense, small-scale fragmentation characteristic of the Vale of Evesham.

<sup>2</sup> Evidence from Beavington, thesis ch. viii, and from field inquiries of a wide range of persons, too numerous to list, concerned with the marketing of vegetables from Bedfordshire.

<sup>3</sup> Rigg, 'Soils . . . Biggleswade', *op. cit.*, p. 400.

<sup>4</sup> Railway goods register inspected at Potton station, Aug. 1958.

<sup>5</sup> Meteorological Office records. The correlation coefficient of +0.570 is significant at the probability level of 5 per cent.

production. This involved a narrower range of vegetables, fewer crops in each three-year cycle, and the disappearance of interplanting. The rotation of early potatoes and white turnips over the Eastern Greensand disappeared, and labour-intensive crops declined so that by 1933 the acreages of carrots and onions in the thirty parishes were only 334 and 202 respectively. The main peak of vegetable exports was now in winter, on account of the brussels sprouts harvest. In this changed situation the grower with small scattered plots was in a difficult position. The fertility of his scattered plots had declined but his holding was viable only under intensive production, being too small to permit a more conservative system of cultivation involving green manuring or lucerne leys. Moreover, without fences or water the land was unsuitable for livestock. The plots became cropped less intensively so that, taken together, they constituted a special form of extensive production.

Intensively-cultivated market gardens were still characteristic in the 1920's and 1930's in the village centres, especially where irrigation could be used. However, the vegetables that became more and more important were those needing least labour, in particular cabbage, cauliflower, and brussels sprouts, the acreage of which in Bedfordshire approximately doubled between 1922 and 1933.<sup>1</sup> Indeed, the major feature of the trend to extensive production by the 1930's was the fieldscale cultivation of brussels sprouts in farm rotations over the northern and central parts of the county. Thus the acreage of this crop continued to increase reaching 10,206 acres in 1926, when Bedfordshire grew 40 per cent of the national production. In the 1930's the county acreage of brussels sprouts fluctuated between 11,700 and 8,300 averaging about a quarter of the national total as production spread into Hertfordshire, Cambridgeshire, and Huntingdonshire, and as the acreage also increased in Worcestershire, Gloucestershire, and Norfolk (table VII).

TABLE VII

ACREAGE OF BRUSSELS SPROUTS GROWN IN BEDFORDSHIRE AND OTHER COUNTIES, 1914-39

| <i>County</i>     | <i>1914</i> | <i>1917</i> | <i>1920</i> | <i>1923</i> | <i>1926</i> | <i>1931</i> | <i>1939</i> |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Bedfordshire      | 4,788       | 4,176       | 4,740       | 6,654       | 10,206      | 11,541      | 10,332      |
| Worcestershire    | 1,014       | 1,425       | 1,686       | 2,167       | 3,102       | 4,450       | 5,259       |
| Hertfordshire     | 326         | 303         | 381         | 504         | 1,074       | 2,449       | 2,345       |
| Essex             | 239         | 341         | 355         | 535         | 666         | 1,025       | 1,987       |
| Gloucestershire   | 152         | 178         | 205         | 376         | 550         | 1,479       | 1,952       |
| Huntingdonshire   | 354         | 228         | 387         | 641         | 1,306       | 2,289       | 1,945       |
| Norfolk           | 82          | 125         | 93          | 152         | 250         | 617         | 1,940       |
| Cambridgeshire    | 369         | 232         | 233         | 255         | 800         | 1,931       | 1,810       |
| Kent              | 886         | 998         | 983         | 143         | 1,489       | 1,484       | 1,200       |
| England and Wales | 11,574      | 11,631      | 12,625      | 16,910      | 25,800      | 35,600      | 37,900      |

<sup>1</sup> Agricultural returns.

## SUMMARY AND CONCLUSIONS

This study has considered the impact of 140 years of economic and technological change on the evolution of a major food-producing industry. Arthur Young's view of the economic prospects of the small garden proprietors at Sandy, deprived of waste and common, may have seemed justified at the time. Yet enclosure gave great potential for expansion to the industry, opening up large new areas of sandy land. During the following half-century the small proprietorships steadily grew in number and size.

The realization of this potential awaited the building of the railways, for they provided the essential link between the cities and the rural market-gardening districts by which lavish inputs of fertility sustained high outputs of produce. Through these functions in Bedfordshire the railway concentrated the industry along the Ivel valley and encouraged intensive production, thus leading to the growth of one of the country's chief market-garden districts for the supply of many kinds of fresh vegetables. It was not by chance that the Great Northern Railway was built through these market gardens, for river terraces highly suitable for market gardening have the terrain favourable for railway construction. However, it was fortuitous that the Ivel valley, with its broad fertile terraces and established gardening industry, was suitably oriented to carry the principal artery of traffic between London and the north, as indeed it had been fortuitous that these sandy terraces ran adjacent to the Greensand slopes that had nurtured the gardening industry before enclosure.

A three- or fourfold expansion in the industry in Bedfordshire during the last quarter of the nineteenth century was characteristic of the growth of rural market gardening. It was accompanied, moreover, by a steep rise in imports of vegetables into the United Kingdom. This combined increase was partly a response to a 35 per cent increase in the United Kingdom's population and partly a consequence of the spread of cities over areas formerly used as market gardens. A further cause, however, was the change to a predominantly urban society in which cottage gardens no longer provided the vegetables for the majority of people. Nevertheless, the substantial increase in the flow of vegetables into the wholesale markets, particularly the exponential rise in cheap imports, allowed a considerable *per capita* increase in the consumption of onions and other vegetables. This dietary change continued into the twentieth century with the adoption of brussels sprouts as a popular winter vegetable. The accompanying steep decline in Bedfordshire in the acreage of onions, and the very marked spread of brussels sprouts, reflect economic and social causes and illustrate the dramatic changes to which the market-gardening industry was becoming susceptible.

The lorry and agricultural tractor revolutionized market gardening. As with enclosure, these major innovations brought great flexibility and potential to the industry yet they cut off the traditional source of fertility on which it had depended. Moreover, after the First World War the deteriorating economic situation crippled the whole economy, and market gardening lacked the stimulus of expand-

ing markets that it had in the 1880's and 1890's. The smallest growers were worst affected and least able to adapt. The Smallholdings Acts came too late, and were political and social measures rather than economic ones. For the newly created small holdings to have been viable for a worthwhile period they would have needed to have been established during the expansion in market gardening and in the earlier years of cheap stable manure, not when these supplies were dwindling or during a time of economic depression. Yet political conditions of the 1870's and 1880's had not favoured this reform. Whereas changes in holding size and structure progressed slowly through the inter-war years, the marketing facilities the lorry offered were readily adopted, especially by the larger growers, and in the 1920's vegetable production spread to the Western Greensand and other areas in Bedfordshire. For growers who made the best use of the economies of the lorry, and those who were successful with early crops, market gardening was more prosperous than other branches of agriculture.

The new set of conditions after the First World War marked the beginning of the end of traditional market gardening as the system for the nation's vegetable production. The intensive market gardening in the Ivel valley and on the Greensand east of Sandy that prevailed down to the early twentieth century differed greatly from the more extensive production with specialization on fewer crops that by 1939 was replacing it. In greater contrast still was the fieldscale cultivation of brassicas which was to spread during the next twenty-five years still further over the farmland of north and central Bedfordshire.

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## NOTES ON CONTRIBUTORS

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# The Cattle Trade and Agrarian Change on the Eve of the Railway Age

By JANET BLACKMAN

## I

FARMING practices varied considerably from area to area in the century after 1750; the pace differed at which new techniques and crop rotations were adopted and adapted to local conditions. The type of farming which developed in a particular locality and the way in which farmers responded to available agricultural improvements must have depended to some extent on proximity to the growing urban markets, which encouraged the production of certain products. The degree of specialization was determined by the transport facilities available, the time taken to reach the market, and the marketing life of the product. In a pre-steam era major towns made an impact on farming in their immediate vicinity by encouraging the production of perishable commodities, especially vegetables, soft fruit, and milk, and the finishing sections of the meat trades. Supplies of commodities with a longer marketing life, such as cereals, cheese, and livestock moved on the hoof, were brought from more distant supply areas. In this way the urban markets were linked with distant farming areas. London's markets had long enjoyed, for instance, Cheshire and Derbyshire cheese, Yorkshire and Irish hams, while Scotland and the northern counties sent cattle south to be finished and sold as fatstock at Smithfield. That is, the effects of location and proximity to the market on agricultural production were probably much greater than they are today, but were continually being altered by changes in methods of transport and food preparation for marketing.

The crucial factor in this question of proximity to the market was time, the time taken to cover a certain distance by different methods of transport, and the effects of this on the product being carried. Clearly the problems of transporting live animals, dead meat, milk, or butter were each quite different, involving different time-scales. A change or improvement either in transport or in the marketing life of a product could affect the period available to reach the consumer, and thereby alter the relationship of the farmer to his market: similarly with changes in the market itself—its type and location for instance—as the result of urban growth. In turn, improvements in farming techniques which the farmer could introduce probably influenced his response to that market. Transport, markets, and agricultural improvements interacted on each other. This appears to have been particularly a feature of the decades following the Napoleonic Wars when significant developments took place in all three. Some analysis is attempted here of cattle-farming and the cattle trades in the north-eastern counties and Yorkshire during this period in order to throw some light on the nature of this interaction.

## II

The growth of new urban markets had two major effects on the cattle trades: it challenged the established pattern of the internal and coastwise movement of livestock focused on the London market,<sup>1</sup> and it altered the balance between cereal and pastoral farming in favour of the latter near the towns. Adam Smith had already noticed the latter. He suggested that the relative values of bread and butcher's meat were different at different stages of agrarian development. He took as an example the trade in Scots cattle with England:

It is not more than a century ago, that in many parts of the Highlands of Scotland, butcher's meat was as cheap or cheaper than even bread made of oatmeal. The Union opened the market of England to the Highland cattle. Their ordinary price, at present, is about three times greater than at the beginning of the century, and the rents of many Highland estates have been tripled and quadrupled in the same time. . .

This equality, however, between the rent and profit of grass and those of corn; of the land of which the immediate produce is food for cattle, and of that of which the immediate produce is food for man, must be understood to take place only through the greater part of the improved lands of a great country. In some particular local situations it is quite otherwise, and the rent and profit of grass are much superior to what can be made by corn.

Thus, in the neighbourhood of a great town, the demand for milk, and for forage to horses, frequently contribute, together with the high price of butcher's meat, to raise the value of grass above what may be called its natural proportion to that of corn. . .

But where there is no local advantage of this kind, the rent and profit of corn, or whatever else is the common vegetable food of the people, must naturally regulate, upon the land which is fit for producing it, the rent and profit of pasture.<sup>2</sup>

He linked the adjustments made between arable and pastoral farming to the growth of an urban market, and noticed particularly what might be called the regional balance of the cattle trade, whereby areas remote from a large urban market specialized in stock-rearing, as in parts of Scotland, Wales, and England, and sometimes in butter and cheese-making. Other districts, nearer an urban market, were more interested in fattening and finishing animals for the retail meat market as well as in dairying.

It must have been in the decades following the defeat of Napoleon that the really major adjustments of the kind Smith was commenting upon took place in

<sup>1</sup> G. E. Fussell and C. Goodman, 'Eighteenth-century Traffic in Livestock', *Econ. Hist.*, supplement to *Econ. Jnl.*, III, no. 2, 1936, pp. 214-36; C. Skeel, 'The Cattle Trade between Wales and England from the 15th to the 19th centuries', *Trans. Roy. Hist. Soc.*, IX, 1926, pp. 138 ff.

<sup>2</sup> A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, I, World's Classics edition, 1904, pp. 169-71.

arable and pastoral farming. Our knowledge of how farmers approached the problems that faced them after 1815 is still rather impressionistic. The prize essays published by the *Journal of the Royal Agricultural Society of England* in the 1840's and subsequent decades are invaluable for observers' assessments of the agricultural changes that had taken place county by county over the previous thirty or forty years. We are still left to guess too much, however, of how farmers took their decisions to make changes in their farming systems, why, and in response to what stimuli. Ernle regarded this period as a farmer's depression from the end of the Napoleonic Wars to the 1830's, a period of falling prices with costs remaining at a higher level.<sup>1</sup> Adams dated what he calls "any decided advance" in farming until after 1837.<sup>2</sup> Did this period of readjustment last too long? This picture has since been somewhat modified by a greater emphasis on some rise in the price levels for cereals from 1827 to 1832, and again from 1836 to 1842.<sup>3</sup> Moreover, meat prices may have fallen less dramatically than cereal prices after 1815, and remained at a higher level than was experienced before the wars.<sup>4</sup>

The post-1815 period depression of agricultural prices, in comparison with the artificially high prices during the war years, could be termed a period of experimentation. Greater attention was generally paid to cereal growing in mixed farming systems to overcome the problems caused by the lower levels of cereal prices, and to take advantage of the growth in demand for meat products. The breeding, for instance, of improved shorthorn cattle adapted to a mixed farming system, yielding both milk and good quality meat, was probably encouraged by such a situation, and was eventually to revolutionize the livestock trades. But the emphasis placed by both contemporary observers and historians on the new courses and crops with their temporary leys and roots has probably overshadowed what had been happening since the end of the eighteenth century to grasslands and meadows and to the cattle raised on them. The many parliamentary enquiries into the state of agriculture during the depression took little evidence on stock-rearing until well into the 1830's, whereas in some areas changes in the balance between pasture and arable had begun long before this.

This is a complicated story. By the end of the eighteenth century there was already an increasing English dependence on imports of Irish beef, pork, dairy products, and Scots-bred animals. The survey made by Deane and Cole led them to the conclusion that the home supply of beef "failed to keep pace with the growth of population" in the second half of the eighteenth century and still more after 1800.<sup>5</sup> During the French Wars in particular they suggest "a big increase in the output of grain was achieved only by bringing more land under the plough at the expense of the nation's meat supply."<sup>6</sup> John has disputed this, although he has tended to read

<sup>1</sup> Lord Ernle, *English Farming, Past and Present*, 6th edn, 1961, esp. pp. 316-31.

<sup>2</sup> L. P. Adams, *Agricultural Depression and Farm Relief in England, 1813-1852*, 1932, p. 113.

<sup>3</sup> A. D. Gayer, W. W. Rostow, and A. J. Schwartz, *The Growth and Fluctuation of the British Economy, 1790-1850*, I, 1953, p. 234.

<sup>4</sup> J. D. Chambers and G. E. Mingay, *The Agricultural Revolution, 1750-1880*, 1966, pp. 108-28.

<sup>5</sup> P. Deane and W. A. Cole, *British Economic Growth, 1688-1959*, 2nd edn, 1967, p. 74. <sup>6</sup> *Ibid.*, p. 75.

Deane and Cole's comments on beef supplies as though they were referring to all livestock.<sup>1</sup> From the last half of the eighteenth century there must have been increasing pressure on supplies of stock, both sheep and cattle.

### III

It is from Marshall's study of Yorkshire<sup>2</sup> and the comments of later agricultural essayists that one begins to understand the complexities of introducing farm improvements. There remained, of course, marked differences in farming practices from one area to another within a region, depending on soil and climatic conditions, on water supplies, transport facilities, and proximity to markets. The attempts to introduce the new farming systems caused both optimism and pessimism in agriculture for more than half a century. Marshall, for instance, succinctly explained the nature of the revolution in farming practice in the Vale of Pickering as being principally a matter of changing old arable lands to grass, and old pasture lands to arable. In some areas the struggle to produce wheat in a rotation with roots on badly drained soil was given up in favour of grassland for feeding cattle, especially in the Yorkshire Dales: in others the old grasslands were ploughed for wheat more successfully, and again there were other areas where the traditional rearing of leanstock for long journeys to markets as far away as London was replaced by fatstock rearing and dairy herds for markets within the region.

Marshall, with his keen observation of the demands being made on the farmer, foresaw some of the difficulties and disappointments the switch to a more mixed system of farming could cause. In his analysis of the Vale of Pickering, which he knew particularly well, he pointed out that the "comparative values" of land—and this is his emphasis—had been inverted since enclosure.<sup>3</sup> The old common land now enclosed and laid down to grass was many times—Marshall suggested five times—the value of the old meadowland which had hitherto been regarded as the most valuable property. It was in the management of this new grassland in areas where grazing predominated that Marshall understood the problems or variety of options open to the farmer, which might or might not be disastrous. In a mixed farming system where the herbage formed part of a regular rotation, he suggested that it should simply be regarded as an arable crop. In contrast to this, in the areas of new grassland there was a greater upheaval in the relative values of land, and a continuing problem of maintaining its enhanced value. As a result, at the end of the eighteenth century no regular course of arable crops and fallow had yet evolved to break up periodically the new grasslands and thereby improve them. Marshall regarded this problem as one which would be overcome only over a period of time with careful observation and management. He pointed out that in contrast to the areas like the Vale of Pickering,

<sup>1</sup> A. H. John, 'Farming in Wartime: 1793-1815', in E. L. Jones and G. E. Mingay (eds.), *Land, Labour and Population in the Industrial Revolution*, 1967, pp. 37-9.

<sup>2</sup> W. Marshall, *The Rural Economy of Yorkshire*, 1st edn, 1788; 2nd rev. edn, 1796.

<sup>3</sup> *Ibid.*, 1796 edn, I, pp. 273-4.

In the Midland counties, where this alternacy of grass and corn has, in some instances, been in practice time immemorial, a regular course of husbandry has taken place. But, here, where this system of management is in its infancy, and where the diversity of soils is almost endless, no regular round of management can, with propriety, be at present pursued.<sup>1</sup>

Milburn, half a century later, still found that a variety of courses of crops were necessary in parts of Yorkshire, giving the impression of a lack of system, and in some cases an adherence to more old-fashioned ideas.<sup>2</sup>

It may be that the era of high prices, which followed not long after Marshall was making his survey, helped to disguise the technical difficulties which were to be revealed later when the mood of optimism created by rising prices had gone. For instance, the essays on farming in Yorkshire and other counties presented to the Royal Agricultural Society some decades later discussed the recurring problems discovered in the new farming systems, such as clover-sickness, from too frequent a clover crop in the crop cycle,<sup>3</sup> the need to devise improvements adapted to local conditions which were not necessarily applicable elsewhere,<sup>4</sup> and the experiments required before the limitations on different soils of systems of drainage and subsoil ploughing were understood.<sup>5</sup>

It was in this period of experimentation and improvements that there occurred a considerable growth in urban demand for foodstuffs. This helped to alter the balance of traditional farming systems towards a greater interest in stock-rearing, fattening and dairying to supply these more local markets, as well as grazing stock *en route* to the London market. Marshall again had seen some of the changes this was already beginning to cause in Yorkshire, and the Vale of Pickering in particular, by the end of the eighteenth century:

Twenty or thirty years ago, there was not, for the smaller markets of *this* District, a single cattle killed (except upon some extraordinary occasion) during the winter, spring or summer months. In autumn, particularly in the month of November, considerable numbers were butchered, to be salted and hung for winter provision; "hung-beef" being formerly a standing dish, not only in this, but in other Districts. But the number which were then killed, in autumn, was small, compared with the greater numbers that are, at present, butchered in the District; every market of which is, now, plentifully supplied with beef, the year round; and this notwithstanding considerable quantities are still hung in autumn. The market of Malton might well vie with the London markets. . .

Twenty or thirty years ago, great quantities of young stock, bred in the com-

<sup>1</sup> Marshall, *op. cit.*, I, pp. 277-8.

<sup>2</sup> M. M. Milburn, 'On the Farming of the North Riding of Yorkshire', *J.R.A.S.E.*, ix, no. 2, 1848, p. 499.

<sup>3</sup> *Ibid.*

<sup>4</sup> J. Grey, 'A View of the Past and Present State of Agriculture in Northumberland', *J.R.A.S.E.*, III, no. 2, 1841, p. 161.

<sup>5</sup> P. Pusey, 'On the Progress of Agricultural Knowledge during the last four years', *J.R.A.S.E.*, III, no. 2, 1842, p. 179.

mon pastures and, in the rough grounds of the marshes, and other central parts of the Vale, were annually sent out of it. The number of lean oxen, too, which were sent out of the country, was very considerable. Now, the Vale, perhaps, barely rears its own stock. A few young cattle may go out of it every year; but a number of Scotch and some Irish beasts, and generally more or fewer young cattle from the Teeswater quarter, are annually brought into it.<sup>1</sup>

Marshall was especially struck by the growth of the market for fat cattle in parts of Yorkshire and the impact this had on farming in the region. The commentators for the Board of Agriculture on Northumberland made a similar point in their survey of the mid-1790's. In a footnote to their observations on markets in that county, and especially the supply of meat to Newcastle, Shields, and Sunderland, they stated:

It may be proper to remark, that 30 or 40 years since, the butchers of those places were obliged to purchase a great deal of fat stock, in the neighbourhood of Darlington, and other parts of the county of Durham; the produce of the north not being equal to their demands; but the scales are now turned, the northern farmers being able, not only to supply the increased population of those places, but to send great numbers of both fat cattle and sheep, every year, to Leeds, Wakefield, Manchester, &c.<sup>2</sup>

The growth in this region's trade in fat cattle resulted in a shortage of locally reared stock, and farmers had to supplement their herds with animals brought in from other areas. This had already led Marshall in the last decades of the eighteenth century to ponder on the possibility of a national shortage of store cattle.<sup>3</sup> It appears that the cattle farmers of Yorkshire and other northern counties looked particularly to Scotland as one of their most important sources of store cattle. In turn, the growth of fatstock markets in Yorkshire, in addition to the established trade with London, provided Scottish farmers with a growing market for their stock. This, together with their shortage of winter feed in the Scottish Highlands, encouraged the export of cattle in large numbers out of Scotland into England to be prepared at a later stage for the more southerly fatstock markets. Droving stock on the hoof linked the two regions. In this way a national market in cattle began to develop at all stages from breeder to butcher, involving more complex marketing arrangements now that regional markets for store and fat cattle had interposed between the traditional north-to-south trade for the London market. By the latter half of the nineteenth century, for instance, York and Darlington had become two of the largest markets for store cattle, supplying a wide region and handling stock from Scotland and elsewhere as well as local supplies for the northern industrial centres.

<sup>1</sup> Marshall, *op. cit.*, II, pp. 199-200.

<sup>2</sup> J. Bailey and G. Culley, *General View of the Agriculture of the County of Northumberland*, Newcastle, 1797, p. 154n. This footnote does not appear in the earlier 1794 edition of this report.

<sup>3</sup> Marshall, *op. cit.*, II, p. 200.

They were complemented by fatstock markets nearer the urban centres, such as the Leeds and Wakefield markets.<sup>1</sup>

The development of new fatstock markets must have helped to push ahead changes in farming systems, giving greater prominence in some areas to the integration of livestock in the arable rotations. At the same time the pace of change in transport facilities may well have affected the timing or progress of such agrarian improvements. In particular, the limitations of droving as the main form of transport of livestock until the middle decades of the nineteenth century enforced regional specialization in cattle-breeding, rearing, and feeding according to a region's proximity to the final fatstock sales in the marketing chain.

#### IV

An account kept in 1838 of traffic passing each day through the toll-bar at Entercommon, found in the records of the Stockton and Darlington Railway Company,<sup>2</sup> gives some indication of the movement of livestock on one route through Yorkshire just at the period when steam navigation was beginning to alter this marketing pattern. By 1838 improved transport facilities by rail and sea were beginning to make inroads into the long-distance droving of stock. Up to then the inland transport of livestock, and therefore of meat, was almost entirely dependent on the one form of transport—the network of roads and drove tracks, and the movement along them of animals on the hoof.

Entercommon is some ten miles or so south of Darlington, not far from where the Tees forms the boundary between Durham and Yorkshire. Almost due north of Northallerton, it was on one of the main north-south routes from Scotland through east Yorkshire.<sup>3</sup> This route through Durham and Yorkshire roughly followed the line of the Great North Road, continuing south through Doncaster, Gainsborough, and Newark, serving both the Midlands and the London markets via the grazing districts of Norfolk. Haldane has described the various routes west and east of the Pennines which had been used for centuries by drovers and their large herds of Scots-bred cattle,<sup>4</sup> and Bonser has given us a particularly detailed study of the drove roads in northern England, especially the Hambleton route.<sup>5</sup> Irish stock imported through Liverpool joined the Scots herds coming down the west of the Pennines, and then cut eastwards through Westmorland to the grazing areas of Yorkshire.<sup>6</sup> In 1831, for instance, over 90,000 cows were imported into Liverpool from Ireland, nearly 135,000 sheep, and 156,000 pigs.<sup>7</sup> The cattle counted through

<sup>1</sup> See the comments, for instance, of a Yorkshire farmer, T. C. Booth, to the Select Committee on Cattle Plague and Importation of Live Stock, 362, 1877, *Minutes of Evidence*, paras. 2244–52.

<sup>2</sup> British Railway Archives, York: Stockton and Darlington Records, SAD 4/72.

<sup>3</sup> Entercommon today is marked on some recent ordnance survey maps but does not warrant even a road sign. The inn which serviced travellers, near the junction of the Teesside road with the Northallerton route, is now a private house. The only signs of the cattle trade in the area are the inn names Black Bull and Durham Ox.

<sup>4</sup> A. R. B. Haldane, *The Drove Roads of Scotland*, 1952, esp. ch. 10.

<sup>5</sup> K. J. Bonser, *The Drovers. Who they were and how they went: an Epic of the English Countryside*, 1970, ch. 14.

<sup>6</sup> *Ibid.*, p. 178.

<sup>7</sup> Board of Trade, *Tables of the Revenue, Population, Commerce, etc. of the U.K. and its Dependencies*, III, 1834, p. 324.

the toll-bar at Entercommon may have included some Irish stock but we have no way of telling. This may, on the other hand, have been an account of mainly local traffic in livestock for consumption nearby. This census does not reveal the destination of these animals, and we can only speculate that some may have been leanstock from other areas bought up for restocking Yorkshire farms, and some may have been fatstock for local markets. The number of animals moved together is not always very large, suggesting a local trade; on other days far greater numbers were moved, suggesting they were *en route* to an important market or fair, probably south of Entercommon, as part of the greater north-south movement of cattle.

At Entercommon the drove road from Darlington and the north joined a road to Yarm, which is to the north-east of Entercommon.<sup>1</sup> Yarm was on another drove road further to the east from Durham, and forming the Hambleton drove road further south.<sup>2</sup> At Entercommon these two roads from Darlington and Yarm converged to form the main route south to Northallerton and Thirsk, two important market centres. At Northallerton, some nine or ten miles south of Entercommon, a fortnightly sale of cattle was held, and there is some evidence in this census of traffic that the movement of animals in larger numbers occurred every two weeks, perhaps for this market. These are the monthly totals of livestock passing through the toll-bar:

MONTHLY TOTAL OF LIVESTOCK PASSING THROUGH  
ENTERCOMMON BAR IN 1828

| <i>Month</i> | <i>Oxen</i> | <i>Sheep</i> | <i>Pigs</i> |
|--------------|-------------|--------------|-------------|
| January      | 199         | 37           | 58*         |
| February     | 187         | 193          | 64          |
| March        | 1,526       | 126          | 218         |
| April        | 1,356       | 102          | 370         |
| May          | 1,560       | 315          | 309         |
| June         | 1,462       | 162          | 422         |
| July         | 894         | 190          | 46          |
| August       | 546         | 366          | 8           |
| September    | 1,649       | 1,322        | 2           |
| October      | 2,204       | 564          | 0           |
| November     | 2,569       | 450          | 2           |
| December     | 367         | 562          | 2           |
| Total:       | 14,519      | 4,389        | 1,501       |

\* Includes some sheep for this month only.

This census indicates the seasonal movement of livestock. The main movement of oxen occurred, as we would expect, in the spring and early summer months for the spring fairs and markets, and in the autumn up to November. There was a very

<sup>1</sup> See the frontispiece map in *Cary's New Itinerary: or an accurate delineation of the Great Roads*, 9th edn, 1821.

<sup>2</sup> Bonser, *op. cit.*, map on p. 151.

sharp rise in the movement of stock in the month of March. The traffic in sheep displays a different pattern to some extent; the main movement was again in the spring months up to May and in the autumn, but with some 30 per cent of the whole year's traffic in sheep occurring in the month of September.

The flow of traffic can be gauged from the daily entries in the census. It appears that there was a fairly large-scale movement of stock on particular days, presumably in order to reach certain places in time for a market or fair.<sup>1</sup> The pigs, for instance, were passing through the toll-bar from March to June approximately once a week in groups of 60 to 170 pigs in a day. Similarly with cattle: these were moved regularly, usually on Mondays, weekly or fortnightly, in large numbers varying according to the season, from some 30 to 80 a day to between 300 and 450 on one day in April, May, and again in June. On Monday 4 June, for instance, 717 head of cattle were paid for at  $\frac{1}{2}$ d each.

The sheep, too, were moved in large numbers on a few days in the week. Of the 193 which were recorded for the whole month of February, 187 travelled on the 27th of that month. Similarly in other months. In the peak month of September over 1,300 sheep moved through the toll-bar in flocks of over 200 three days running, and 480 on another day. The animals or their drovers were no keepers of the sabbath, and large numbers of livestock moved through the toll-bar seven days a week in order to reach markets on time.

The traffic in cattle through this toll-bar reached two main peaks in the year, March to June, and September to November. This suggests that these animals were moving to Yorkshire fairs and markets for purchase by graziers and farmers to supplement their own herds. Those purchased in spring would be fattened on the early summer pastures, and sold off in the autumn as fatstock. March seems to be an early month for such a large movement of stock, and was often referred to as the "hunger-gap" when fodder was scarce. The winter of 1837-8 was a severe one in other parts of the country with a late spring and a cold wet summer,<sup>2</sup> and consequently farmers may have moved a large number of stock early on to the market in search of other sources of feed or for slaughtering. At the same time, with the wider introduction of crop rotations including fodder crops, larger stocks of animals could be fattened through the winter months on turnips and other roots, sometimes supplemented with cattle-cake. This allowed some farmers who were nearer the retail markets to fatten stock bought at the late summer or autumn fairs through the winter, and to sell them off to the butcher in the winter and spring months. This may have helped to spread the supply of fatstock to urban markets over a longer period of the year. On the other hand, this did not entirely cut out the seasonal nature of the trade and the movement of animals, especially of leanstock. As yet the only feasible method of transport was primarily by road: the breeding

<sup>1</sup> A similar feature can be seen in the few figures available for the traffic in livestock at the Shenfield toll-gate in Essex *en route* for the London market in the same year; see J. Copeland, *Roads and their Traffic, 1750-1850*, Newton Abbot, 1968, pp. 51-2.

<sup>2</sup> E. L. Jones, *Seasons and Prices*, 1964, p. 167. The details of weather conditions in this study are mainly for England south of the Trent: see Jones's comments on p. 136.

cycle, and the necessity of moving livestock in the warmer months when the roads were passable and grazing was available *en route*, ensured the continuance of this marked seasonal pattern of trade.

## V

So far we have no detailed accounts of how quickly farmers in Yorkshire and other northern counties saw the advantages of rearing and fattening to supply the fatstock markets within their own region. The changing market situation, pressure on local supplies of stock, and increasing imports from Scotland and Ireland probably encouraged experiments in cattle-breeding as well as in fattening. The development of the improved shorthorn was the most important addition to the country's cattle stock, owing much to the pioneer work of the Collings brothers, farming near Darlington at the turn of the century.<sup>1</sup> It was in the post-1815 decades that other breeders improved the shorthorn still further, and farmers became more and more interested in its properties as an animal yielding good milk and meat. It is not too exaggerated a claim that the shorthorn revolutionized cattle-farming, bringing the possibilities of profitable fattening for the meat trades to more farmers who were not necessarily specializing in beef cattle. Eventually the introduction of the shorthorn must have undermined or offered an alternative to the regional pattern of leanstock producers sending their animals long distances to fatstock producers for final preparation for the market. How quickly this took place, and in which areas, we do not have a very clear idea. The trade in cattle from the Highlands and the Tees area had traditionally been in animals driven as lean cattle for fattening nearer the areas of consumption, especially London. This was a speculative trade dependent on the availability of grazing and the supply of grass, hay, and turnips in England.<sup>2</sup> Much of the information on sources of fodder and grazing rights, as well as the drove routes south, were handed down from father to son. Walter M'Combie, famous in later life for his Aberdeen Angus cattle, began to speculate in grazing on the drove routes while a young lad still learning the trade from his father and his labourers.<sup>3</sup>

The innovations in cattle-feeding which developed especially in the eastern counties, such as stall-feeding in the winter months, were probably linked to the greater emphasis in this area on the fattening of stock for the London market, supplemented more and more by the growth of fatstock markets in the northern counties. By the time the rail network was completed cattle were imported from Ireland and elsewhere, brought by rail to the eastern counties for fattening, and then sent by rail again to the markets of Manchester, Sheffield, and other towns.<sup>4</sup> Pusey

<sup>1</sup> E. H. Carrier, *The Pastoral Heritage of Britain*, 1936, pp. 98-9; R. Trow-Smith, *A History of British Livestock Husbandry, 1700-1900*, 1959, pp. 236-9.

<sup>2</sup> W. Thompson, 'Cattle droving between Scotland and England', *Jnl. of Brit. Arch. Assocn.* xxxvii, no. 2, 1932, p. 177.

<sup>3</sup> W. M'Combie, *Cattle and Cattle-Breeders*, Edinburgh and London, p. 3.

<sup>4</sup> See G. Ewart Evans, *Where Beards Wag All*, 1970, ch. 13, for an account of this trade, and the part played by the Norwich drovers.

commented on the differences in feeding methods between the eastern counties and elsewhere:

Every autumn horned cattle move across England, from Devonshire, Herefordshire, parts of Yorkshire, and Scotland, to the eastern coast, where they are fattened. I do not know why this practice should be confined to that side of the country; but though it may be known elsewhere to individual farmers, all the counties in which stall-feeding seems to be established lie to the east.<sup>1</sup>

It may be that the integration of livestock in the crop cycle was carried further in this area; the ploughing of waste and large tracts of old grasslands, and the need to support the increasing stocks of sheep and cattle, may have provided a context favourable to feeding experiments. The growing fatstock markets in the northern counties, as well as the established cattle trade from the north via the east-coast routes to London, increased the pressure on the supplies of fodder, and probably drew attention to more profitable methods of feeding. It may be that the cattle breeds used in this trade were particularly responsive to extra feeding, offering very high profit prospects. Again we need to know far more about the economy of farmers engaged in rearing and fattening cattle before we can do more than suggest this was the case.

There certainly seems to have been an awareness of a widening differential between leanstock and fatstock prices in the mid-1830's, if not earlier. In the third report of the Select Committee on Agricultural Distress, made two years before this Entercommon census, it was mentioned more than once that there was now greater profit on fatstock than on leanstock, that the price of the latter was low, but that of the former very high, especially beef prices.<sup>2</sup> This rise in price may have been partly, at least, only short-term, the result of the higher costs of feeding as a consequence of the failure of the turnip crop in the southern counties.<sup>3</sup> While the wholesale meat prices that we have may reflect fatstock prices and the fluctuations in the costs of feeding, the movement of leanstock prices at this period is almost unknown to us. It may be reasonably assumed, however, that the greater demand for fatstock increased pressure on leanstock supplies; nevertheless, the relative profit of the leanstock and fatstock farmers and dealers may have differed. Cattle-rearers were conscious of being remote from their final market, and very much in the hands of dealers. The dealers and drovers were the link or marketing chain between the Scottish farmer and his more southerly markets, and the slow movement of cattle over long distances left the farmer dependent on the dealers for information on market trends and prices. The 1814 report on Scottish farming put this more graphically: "Hence the breeder cannot avail himself of that range of experience, which commences with copulation and terminates in the shambles."<sup>4</sup> And in the

<sup>1</sup> Pusey, *loc. cit.*, p. 205.

<sup>2</sup> S.C. on Agricultural Distress, 3rd Report (465), 1836, *Minutes of Evidence*, QQ. 12239 f.

<sup>3</sup> *Ibid.*, QQ. 11926, 13676.

<sup>4</sup> Sir J. Sinclair, *General Report of the Agricultural State and Political Circumstances of Scotland*, Edinburgh, III, 1814, p. 12.

1836 Select Committee one farmer from Roxburghshire spoke of the increased profit from grazing sheep and black cattle coming to farmers like himself, aided by the setting up of markets of their own with the assistance of the Agricultural Association. He mentioned in particular their own markets at Morpeth, and the selling of stock to dealers there for the English markets in the northern districts.<sup>1</sup>

## VI

In contrast to the situation in the northern and eastern English counties the Scottish cattle farmer was still influenced to a large extent by the shortage of winter-feed and the long journey to his main market for fatstock outside Scotland. In the report on Scottish farming made under the directions of Sir John Sinclair in 1814 William Aiton and others discussed livestock farming in terms of the capability of the land to produce a supply of winter food.<sup>2</sup> Their conclusion was that improvements in breeding were not as advanced as in the English counties, and could not be until better quality and a larger supply of fodder were produced. They stated that for the Scottish farmer

His cattle and sheep must be in a great measure the creatures of his own mountains and of his own climate. . . He has seldom any considerable extent of land that would fatten any breed; and if he had, there is no market for it within his reach.<sup>3</sup>

This situation enforced a pattern of stock-rearing whereby a large percentage of the cattle reared was exported for further rearing and finishing for the markets in the south. Stock was moved south from the more mountainous regions before the winter set in. As a result the pattern of farming, of employment, and the life of the whole community reflected this situation until the supplies of fodder were improved by the wider introduction of a turnip crop. Poor supplies of fodder hampered experiments in breeding, and limited the farmers' choice of stock to the hardier types which matured and fattened quickly. The Kyloes, Galloways, black Fifehire breeds, and the Aberdeen Angus were developed as beef cattle for the English market, fitting into the particular features of Scottish farming systems, local conditions of poor supplies of winter feed, and few local fatstock markets of any size.

The new fodder crops were to alter all this, and during the first half of the nineteenth century revolutionized Scottish stock-farming. This inevitably brought changes in the structure of the local economy with a greater emphasis on enclosure. The stockbreeder could now be more selective in the breeds he chose, and could experiment with cross-breeding, as hardiness for winters on poor feed was no longer such a major consideration in some areas, while in others sheep were introduced in preference to cattle as hardier animals. The initial capital outlay a cattle farmer had to make was considerable.<sup>4</sup> At the same time, the possibility of earlier preparation of cattle for the journey south to the major meat markets gave the farm-

<sup>1</sup> S.C. on Agricultural Distress, 1836, *op. cit.*, *Minutes of Evidence*, QQ. 14564-7.

<sup>2</sup> Sinclair, *op. cit.*, III, ch. 14.      <sup>3</sup> *Ibid.*, III, pp. 5-6.

<sup>4</sup> Pusey made a similar point in relation to English farms, suggesting that clay-farms in comparison with grazing or mixed farms had fallen into "inferior hands" as little capital was required; Pusey, *loc. cit.*, p. 171 n.

er a more rapid turnover of his stock, possibly altering the cost structure and cash flow of his farming system. There were other alterations in the traditional situation of the Scottish stock farmer, which suggests this is one of the best documented instances of the interrelationship of the various factors which were making their impact on agriculture at this period. In particular the growth of a market for meat and dairy products in Scotland itself, as well as in the northern English counties, encouraged improvements in farming, especially the introduction of the short-horn. At the same time the new transport facilities were changing the relationship of Scotland with London and other more southerly markets.

During the first quarter of the nineteenth century the English graziers and fat-stock markets could take all the beasts Scotland exported, and more. The Falkirk Trysts, closer to the southward drove roads than the earlier ones at Crieff, had become the most important Scottish cattle dealers' fair by the end of the previous century. A modern estimate of the output of Scottish farms at that date confirms the feasibility of Sir John Sinclair's figure of some 100,000 store cattle exported to England in 1800,<sup>1</sup> 60,000 of which were probably sold at the Falkirk Trysts. This trade via Falkirk probably reached its peak in the 1830's or sometime before mid-century, by which time transport changes were beginning to make an impact on the structure of the cattle trade between Scotland and England.

Before rail transport, droving was the only feasible form of transport except for some sea voyages. In 1839 the *Stamford Mercury* was commenting that some 1,500 Scottish drovers visited Barnet Fair each year, driving the small Highland cattle purchased by dealers at the Falkirk Trysts.<sup>2</sup> A glance at the map at the back of Haldane's study showing the Scottish drove roads bringing cattle to England from the northernmost tip of the country reveals something of the extraordinary scale of this operation, its hazards, and its fascination as Britain's "cowboy era." This was a highly speculative trade, dependent on a certain amount of skill, experience, and even luck, especially in judging the value, stamina, and fattening potential of animals at the time of purchase as lean cattle. M'Combie thought that it was particularly difficult to succeed in the store-cattle trade; a correct judgement of the value of stock and their fattening properties could make all the difference between a small fortune and bankruptcy.<sup>3</sup> His lifetime spanned the period when the most important agricultural improvements in cropping, winter-feed, the development of the shorthorn, and changes in transport made their revolutionary impact on the cattle trade.

The transport by steamship of Aberdeen cattle to London had begun in 1828, and by 1838 between 5,000 and 8,000 animals were being shipped southwards each year. This trade was soon to compete quite successfully with droving,<sup>4</sup> cutting out

<sup>1</sup> J. A. Symon, 'The Falkirk Trysts; a gauge to Highland stock output', *Scottish Agriculture*, Winter 1953-4, pp. 119-21.

<sup>2</sup> I am indebted to John Perkins, a graduate student of mine now lecturer in economic history at the University of New South Wales, for this information: *Stamford Mercury*, 4 Oct. 1839.

<sup>3</sup> M'Combie, *op. cit.*, pp. 19 ff.

<sup>4</sup> J. H. Smith, 'The Cattle trade of Aberdeenshire in the nineteenth century', *Agric. Hist. Rev.* III, 1955, pp. 114-18.

some of the intermediary stages in the marketing process, and so leading to a decline in the number of cattle dealt in at the Falkirk Trysts. In particular, steam transport brought the Scottish cattle breeder nearer in marketing time to the London market. He could now turn his attention to fatstock-rearing, bringing his animals nearer their peak for retail sale in London with a much quicker sea-journey between the producer and the main market. Aberdeen and London were pulled together so that the London market could begin to dominate this trade once more. M'Combie commented on this:

Steam navigation and the use of bone-dust being both introduced about the same time, shortly produced a complete revolution in the cattle trade; feeding soon became general, from the larger breadth and heavier crops of turnips grown; droving gradually diminished, till now it has all but ceased, almost all the herds in Aberdeenshire being fattened, besides many brought in from north and south.<sup>1</sup>

And so with the appearance of Irish-bred cattle and shorthorns, M'Combie gave up his job as a lean-cattle jobber dealing in north-country cattle, "seeing it was done for" as he put it.<sup>2</sup> The growth of an urban meat market in Scotland itself underpinned this development of Scottish fatstock rearing for the London markets.

Eventually cattle-droving as a trade became confined to shorter journeys from farm to local market, and to and from the railway station. The decline in long-distance droving from Aberdeenshire was an example of what was happening elsewhere as a result of rail and steamship transport of livestock. Proximity to a large urban market dictated less and less the location of livestock-farming, especially fattening, particularly when freezing techniques, by extending the marketing life of meat, made the transport of dead meat feasible over longer distances. In this way the coming of steam transport by sea and rail helped to destroy the balance between stock-breeding and fattening areas which had developed at a time when cattle-droving was the only method of transporting livestock to the retail meat markets.

## VII

It would seem, therefore, that a number of factors were interacting in the first decades of the nineteenth century whereby farmers and traders responded to new market opportunities and to the pressure on livestock supplies. The most important new development was the growth of large urban markets. The national market for cattle, both store and fat animals, had become much more complex now that the London market was augmented by other large centres of demand. In this situation we might expect to find less regional differences in the price paid for livestock and for meat. The level of prices in the London market may have become the national price with less variation in other regional centres. As yet we can only speculate about such matters, but this may have been the trend in fatstock prices. Leanstock may have had a different price pattern, with greater regional variation depending on the stage reached in the marketing process, the distance still to be

<sup>1</sup> M'Combie, *op. cit.*, p. 101.    <sup>2</sup> *Ibid.*, p. 16.

covered to supply the carcass salesman and butcher, the local price of cattle-feed, the local supplies of livestock available, and other factors. The Scots cattle breeder, by taking advantage of the shortage of supplies in the English counties, certainly improved the level of his local prices by exporting livestock to England. The profit opportunities of farmers in areas remote from a large urban market were improved by the increase in demand for livestock generally. The increase in demand for meat encouraged farmers near these new markets to become both breeder and fatterer, buying in stock from elsewhere for fattening to supplement their own stocks. This development strengthened the long-distance trade in cattle, drawing supplies from breeders far from the large retail markets. In this long-distance movement of cattle on the hoof the number of intermediaries remained large. The lack of new transport facilities on any scale until the middle decades of the nineteenth century kept the cattle trade to its traditional pattern or organization, with the livestock farmers operating largely on the market intelligence obtained from the traders. At a later period transport improvements added another dimension to the situation, causing further changes. As Aberdeen as a supply area and the London market were drawn together by steam transport this may have altered the supply situation for farmers in the northern English counties. They may have become more and more dependent on their own supplies, encouraging the introduction of new breeds including the improved shorthorn, supplemented by larger imports from Ireland.

Agricultural history can be too easily seen perhaps as a progression of changing farming techniques without indicating the possible connections between them, and also the impact on them of a changing market situation and of new transport facilities. All that has been suggested here is the type of links which probably existed in one sector of farming—cattle-rearing and fattening. The effect was to create a national market in livestock with regional specialization in the various stages of preparation for the butcher. As yet our knowledge of the way in which farmers took their decisions, and reacted to new factors affecting their livelihood, is small and too dependent on the comments of contemporary observers rather than information from the farmers themselves. The memoirs of men engaged in farming and the cattle trade, like M'Combie's, are all too rare. Further regional studies of marketing may throw some light on the way farmers balanced the advantages of new opportunities, once they were realized, against the difficulties of switching to a new system of husbandry. In the cattle trade the long distances between the cattle breeder and the problems of marketing a live commodity may well have resulted in a greater division of roles between the farmer and the cattle traders, placing the cattle dealer in a more powerful position to study the market, price accordingly, and switch to new markets. This seems to have been the situation throughout the period in which, as Ernle noticed,<sup>1</sup> some of the most important advances in livestock rearing were made.

<sup>1</sup> R. E. Prothero (Lord Ernle), 'English agriculture in the reign of Queen Victoria', *J.R.A.S.E.*, LXII, 1901, pp. 11-12.

# The Progress of the Early Threshing Machine<sup>1</sup>

By STUART MACDONALD

THRESHING was as basic to agriculture as agriculture was to the national economy. New crop rotations, better manuring, and increased potential arable acreage may have produced more grain to be sold at greater profit in the buoyant grain market of the late eighteenth and early nineteenth centuries, but the importance of the essential linking process—threshing—seems to have escaped comparable attention. Before the 1780's, the most efficient way of separating grain from straw was to employ teams of men throughout the winter months to hit the corn with flails. The work was hard, it was dirty, inefficient, slow, and at a time of rapid agricultural change and some agricultural progress, primitive. Not until 1786 was a machine invented capable of relieving arable agriculture from its annual epic drudgery.<sup>2</sup> The statement made in 1799 that "In Britain, till within these twelve years, the flail may be said to have been the only instrument employed for thrashing corn . . ."<sup>3</sup> seems to lend some perspective to simplistic views of earlier revolutionary progress in agriculture. The machine was immensely popular and readily accepted in some parts of the country: "These machines have now spread over all the corn counties of Scotland, and have lately been successfully introduced into the northern counties of England"; but not in others, "though, strange to tell, they are scarcely known in the southern and best cultivated parts!"<sup>4</sup> Nor was this merely a question of slow

diffusion from Scottish origins; in many parts of England the flail remained the dominant—sometimes the only—means of threshing for the next half-century. "The thrashing of corn is performed in two ways; by manual labour, as with the flail, and by mechanical means, as the thrashing machine. The flail . . . is still used in a great part of England to separate the corn from its straw."<sup>5</sup> The machine was revolutionary in function compared with the flail and in scale compared with the size and cost of other farm implements.<sup>6</sup> That such a keystone of revolution should prove invaluable to some and valueless to others seems a matter of some interest and importance and has provoked this enquiry.

## I

Whilst it would be eminently satisfying to compare the actual costs and efficiency of one threshing machine with those of another and, of course, with the flail, and while the conclusion could be made to appear pleasingly convincing, to do so would necessitate the use of statistics provided by contemporaries. What seem to be identical machines were made to appear radically different in performance, depending on the writer's opinions of threshing machines. As far as the evidence is concerned, performance is a function of opinion rather than the more logical reverse. "It is an easy affair to make such statements prove anything that is wanted . . . if the mountain will not come to Mahomet, there is no

<sup>1</sup> I am deeply grateful to D. J. Rowe for his criticism of and interest in this paper.

<sup>2</sup> "This may be considered as the most valuable discovery, in machines of agriculture, which has been made for centuries past. Not merely as lessening human labour, but as relieving farm workmen from their most unhealthy employment."—W. Marshall, *Landed Property*, 1804, pp. 163–4. Arthur Young called it "by far the most capital mechanized invention in husbandry that has appeared this century."—*Annals of Agriculture*, xx, 1793, p. 248; but he later modified his opinion after encountering the southern threshing machine while compiling his county reports for the Board of Agriculture.

<sup>3</sup> Robert Brown, *Agriculture of the West Riding of Yorkshire*, 1799, p. 57.

<sup>4</sup> *Ibid.*, p. 59.

<sup>5</sup> Essay on 'Barn Management', *Quarterly Journal of Architecture*, III, 1831–2, p. 893.

<sup>6</sup> Exact comparison of expense is not possible, but while a plough, a winnowing machine, or a cart would have been exorbitant at more than £10 or £15, a threshing machine could cost £100 or £150, and sometimes very much more.

difficulty in carrying Mahomet to the mountain."<sup>1</sup> Three apparently comparable four-horse machines, each employing five or six labourers, threshed grain at very differing cost; one at 1½d. per quarter,<sup>2</sup> one at 7d.,<sup>3</sup> and the third at something over 1s.<sup>4</sup> This information comes from men who were keen to encourage the machine: their opponents naturally increased the performance range even more. As late as 1838, the performance of threshing machines was still regarded as incomparable: "... thrashing-machines of the same power and construction perform very different quantities of work. Whilst one machine only thrashes 24 bushels of oats in the hour, another of the same power thrashes 60 or even 72 bushels."<sup>5</sup> A more rigorous mathematical treatment may well be practical for evidence from later in the century,<sup>6</sup> but it could be misleading to treat in this way material that is sometimes inaccurate, often vague, and always subjective.

What attention has been afforded the threshing machine, both by contemporary writers and more modern ones, has tended to concentrate on its mechanical intricacies. Interest has been in how the threshing machine functioned, not in why it was introduced. It is, therefore, hardly necessary or rewarding to take yet another engineer's view of the machine. A brief explanation of the workings must suffice. Figure 1 gives a view of both sides of the first effective threshing machine, that of 1786. Corn was placed ears down on the sloping platform and fed be-

tween two small rollers. As it passed through these, the large drum, armed with fixed skutchers, beat it with an upward motion and presumably delivered both grain and straw, now separated from each other, to an untidy heap on the barn floor, much as flailing operations must have left them. The mechanical genius here is more evident when the alternatives are examined. The flail has only simplicity to recommend it while the other threshing machines patented at about this time have not even that.<sup>7</sup> Winlaw's machine attempted to grind the grain from the straw and probably produced a sort of coarse flour;<sup>8</sup> Willoughby's was literally a mechanical flailer, slow, dangerous, and very liable to disintegrate.<sup>9</sup> Jubb's ostensibly worked on the same principle as figure 1, but with a beater drum too small to be effective. This was the crucial problem overcome by the 1786 machine; by fixing skutchers to a much larger revolving drum, the machine could be made to beat quickly and hard enough to thrash grain efficiently without destroying itself.<sup>10</sup>

Once the essential principle of the successful threshing machine had been discovered, the machine's development and refinement were rapid. Figure 11 shows the threshing machine of 1789 after three years' development. (The machine described in the Appendix is of 1840 and is basically the same.) It is "from a generation of threshing machines which represents the first significant attempts at the solution of problems of mechanized farming."<sup>11</sup>

<sup>1</sup> A Scottish reviewer, criticising Arthur Young's quantitative approach and his apparent eagerness to draw sweeping conclusions from his calculations—*Farmer's Magazine*, I, 1801, p. 67.

<sup>2</sup> *Annals of Agriculture*, xx, 1793, pp. 248–51.

<sup>3</sup> William Dickson, *Practical Agriculture*, 1814, pp. 46–7.

<sup>4</sup> *Annals of Agriculture*, xxiii, 1795, p. 374.

<sup>5</sup> *Quarterly Journal of Agriculture*, ix, 1838–9, p. 65.

<sup>6</sup> See E. J. T. Collins, 'The Diffusion of the Threshing Machine in Britain, 1790–1880', *Tools and Tillage*, II (1), 1972, pp. 16–33. It is felt that there is a great need for a rigorous mathematical treatment of this subject, particularly of the acceptability of the threshing machine in relation to local wage rates and farm size. These are matters beyond the more general scope of this paper.

<sup>7</sup> Sir William Tritton, 'The Origin of the Thrashing Machine', *The Lincolnshire Magazine*, xi, 1, 1934, pp. 7–12; 2, 1934, pp. 53–6.

<sup>8</sup> For details of Winlaw's Mill see *Annals of Agriculture*, III, 1785, pp. 411–17, where the suggestion is made that it could be used for rubbing the husks from rice.

<sup>9</sup> *Ibid.*, p. 413: "I am convinced that no one yet offered to the public on the plan of stampers or flails, has ever answered the purpose intended, nor even can be made to answer."

<sup>10</sup> *The Farmer's Magazine*, IV, 1803, p. 128.

<sup>11</sup> *New Bingfield Project Report*. The Bingfield threshing machine was moved from Bingfield to West Side Farm, Newton, Stocksfield, Northumberland, at the instance of its owner, Mr J. E. Moffit, and reconstructed there in 1966–7 by the Department of Mechanical Engineering, Newcastle University, which produced this unpublished report.

The threshing machine of the period 1790-1840, with its complex gearing, could occupy two floors of a barn. It might be capable of working chaff-cutters, grinders, barley-hummellers, and turnip slicers, and of mechanizing other time- and labour-absorbing activities

as well as thrashing grain, separating it from the straw, and operating an array of winnowing machines, though hardly at the same time. Its power came occasionally from windmills, sometimes from water mills and later from steam engines,<sup>1</sup> but more usually from a horse

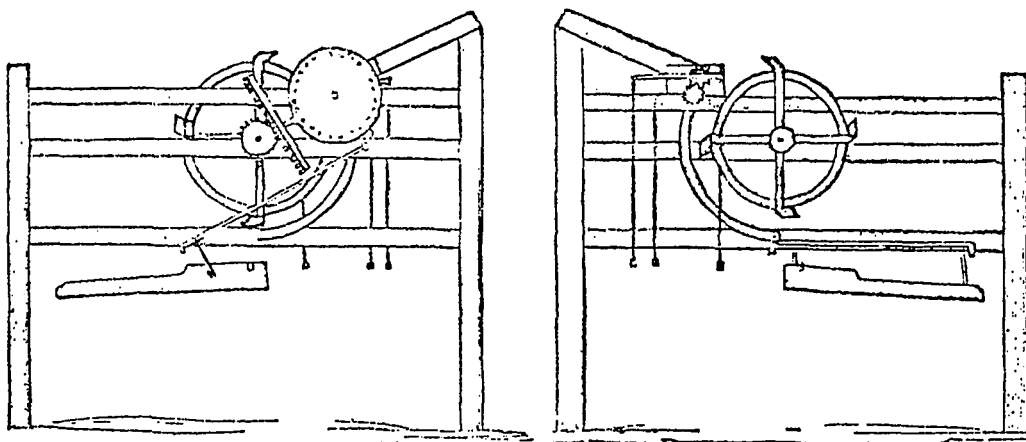


FIG. I

1786. First form of Meikle's Threshing Machine

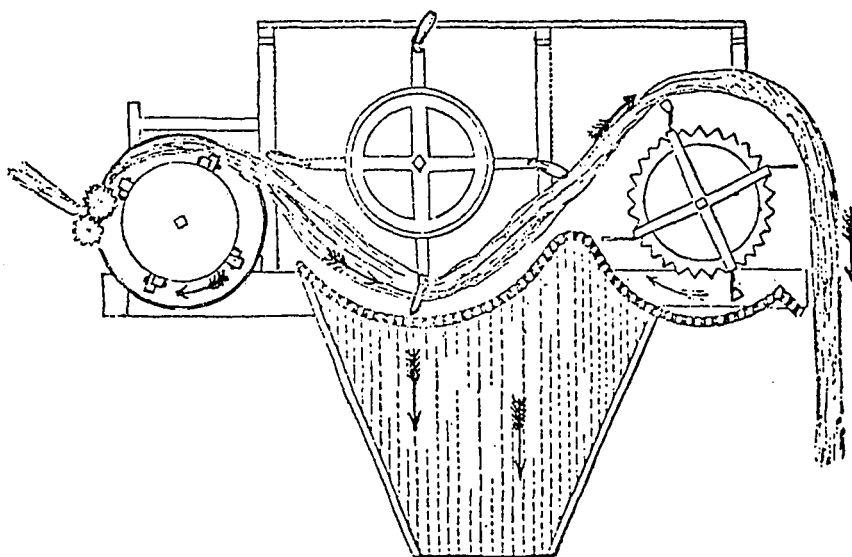


FIG. II

Section of Meikle's Threshing Machine

<sup>1</sup> For greater detail on the power supply of threshing machines see particularly G. B. Worgan, *Agriculture of Cornwall*, 1815, pp. 43-5; John Bailey, *Agriculture of Durham*, 1813, pp. 80-2; Rev. James Headrich, *Agriculture of Forfar*, 1813, pp. 262-6; Robert Ritchie, *The Farm Engineer*, 1849, pp. 69, 74-5.

wheel, often covered by a wheel house.<sup>1</sup> The threshing machine could be an exceedingly elaborate piece of equipment; the more elaborate it was, the greater its potential usefulness seems to have been and the greater the doubts expressed by some farmers. "How does your Threshing Machine succeed—is it complicated and expensive?"<sup>2</sup>

## II

The basic principle of fixed skutchers on a revolving drum seems to have originated in Northumberland, where the equally basic problem of holding the machine together while it was operating fast enough to do any real work does not seem to have been solved.<sup>3</sup> This distinction went to Andrew Meikle of East Lothian, who worked on a model of the Northumberland machine to produce his 1786 machine for which he took out an English patent in 1788.<sup>4</sup> There is little evidence that Meikle personally built machines in England, but some to indicate that the work was delegated to agents,<sup>5</sup> and that Meikle expected a substantial patent fee. It is hard to believe that this imposed any real barrier to the southward diffusion of the machine, especially in the light of the activities of rene-

gade builders constructing machines on Meikle lines but giving him neither acknowledgement nor fee. William Raistrick, "civil engineer" of Morpeth, claimed that by objecting on principle to paying Meikle's fee of 10 guineas for each machine he had saved the farmers of Northumberland and Durham £12,000 by 1803.<sup>6</sup> In the absence of large agricultural engineering companies, which hardly became powerful centres of diffusion themselves until the 1830's, the construction of the Meikle threshing machine must have been left either to individual specialists who had acquired some sort of reputation in the field, or to local blacksmiths, millwrights, and carpenters who copied machines within their limited experience.<sup>7</sup> Small works offered some assistance: "Castings, iron and brass complete, for this machine (or even the wood patterns) may be had at Mr Parker's foundry, Stourport . . . but I do not know of any particular workman who now professes making and erecting them";<sup>8</sup> but the end result was the product of an individual craftsman, and was generally custom-made to suit the demands of location and farmer.<sup>9</sup> Thus the threshing machine was most likely to spread by contagious contact, and presuming its invention

<sup>1</sup> This method is well explained in F. Atkinson, 'The Horse as a source of Rotary Power', *Trans. Newcomen Society*, xxxiii, 1960-1, pp. 31-55.

<sup>2</sup> Letter from George Boswell of Piddletown, Dorset, to George Culley in Northumberland, October 25, 1789.—Northumberland County Record Office (N.C.R.O.), ZCU/14.

<sup>3</sup> John Bailey and George Culley, *Agriculture of Northumberland*, 1805, pp. 49-52. A good account of the early development of the threshing machine appears in *The Farmer's Magazine*, xii, 1811, p. 484, and a variation in iv, 1803, p. 128.

<sup>4</sup> *The Farmer's Magazine*, xii, 1811, p. 484.

<sup>5</sup> A copy of a threatening letter from one such agent, John Whinfield of Pipewellgate Foundry, Gateshead, written some time before 1803 to Thomas Walker, Millwright of Newcastle reads: "Sir, I have the orders of Mr Meikle the Proprietor of the Patent for Threshing Machines to require you to send me without delay a list of every Threshing Machine you have made and Erected . . . you are Also requested to write down . . . the names of every Millwright, Joiner or others that you know of who have Erected Threshing Machines."—N.C.R.O./2DE/44/10.

<sup>6</sup> *Ibid.* The implication that there were over a thousand threshing machines in this area by 1803 can hardly be taken seriously.

<sup>7</sup> This conclusion is encouraged by John Farey, *Agriculture of Derbyshire*, 1815, II, pp. 49-50, which lists twenty-one machines built in the county before 1809 where the homes of their builders are traceable. Five were made by men travelling between forty and 100 miles, sixteen by builders from between one and thirteen miles.

<sup>8</sup> Letter from J. B. Turner, 26 Dec. 1807, *Agricultural Magazine*, ix, 1808, pp. 161-7. Remoteness from origins seems to have been a considerable barrier to the machine's diffusion. In 1802 "A Mr Prentiss, from Edinburgh, erected in Pennsylvania, New Jersey and Delaware, six or seven machines upon the Scotch principle, which were found to answer well. But on account of the extreme care required in feeding them and the inability of common workmen to keep them in repair, the builder being engaged in another business at a distance, prevented their general adoption." *U.S. Census Preliminary Report*, 1860, p. 96.

<sup>9</sup> *Quarterly Journal of Agriculture*, ix, 1838-9, p. 66.

to have taken place in south-east Scotland, its diffusion should have occurred within that area first.

By using the Board of Agriculture Reports for the counties of Britain it is possible to glimpse this diffusion more clearly, but to use this material in such a way is a hazardous undertaking only prompted by an overwhelming temptation to apply a survey made for the whole country so soon after the introduction of the threshing machine. The weaknesses of the *Reports* are legion; counties are hardly ideal natural regions, nor were many reporters ideal agriculturalists.<sup>1</sup> They were underpaid, rushed in their work, and frequently out of their depth. Consequently, the standard of the reports varies greatly, and the uniformity envisaged by the Board's President in his framework of questions to be answered is generally more apparent than real. However, there is some justification for their use apart from the absence of anything remotely comparable. Sir John Sinclair asked his reporters to comment on the agricultural implements in use in their counties, a request that seems to have puzzled not a few of them. Some launch into obedient description of spades and hay forks while many see this as futile and reply that the local agricultural implements are just the ordinary ones. In their desperation to find something worthwhile to include under this heading the reporters were particularly keen to mention an implement as new and as important as the threshing machine. Several Scottish reporters even comment on the absence of them, but although their statements may be unambiguous it is rather difficult to judge the precise differences in situation between one county where threshing machines are described as "common" and another where they are said to be "general". The use of the original quarto reports of c. 1794 gives both the earliest possible date and the maximum chronological uniformity. Map 1 shows those counties

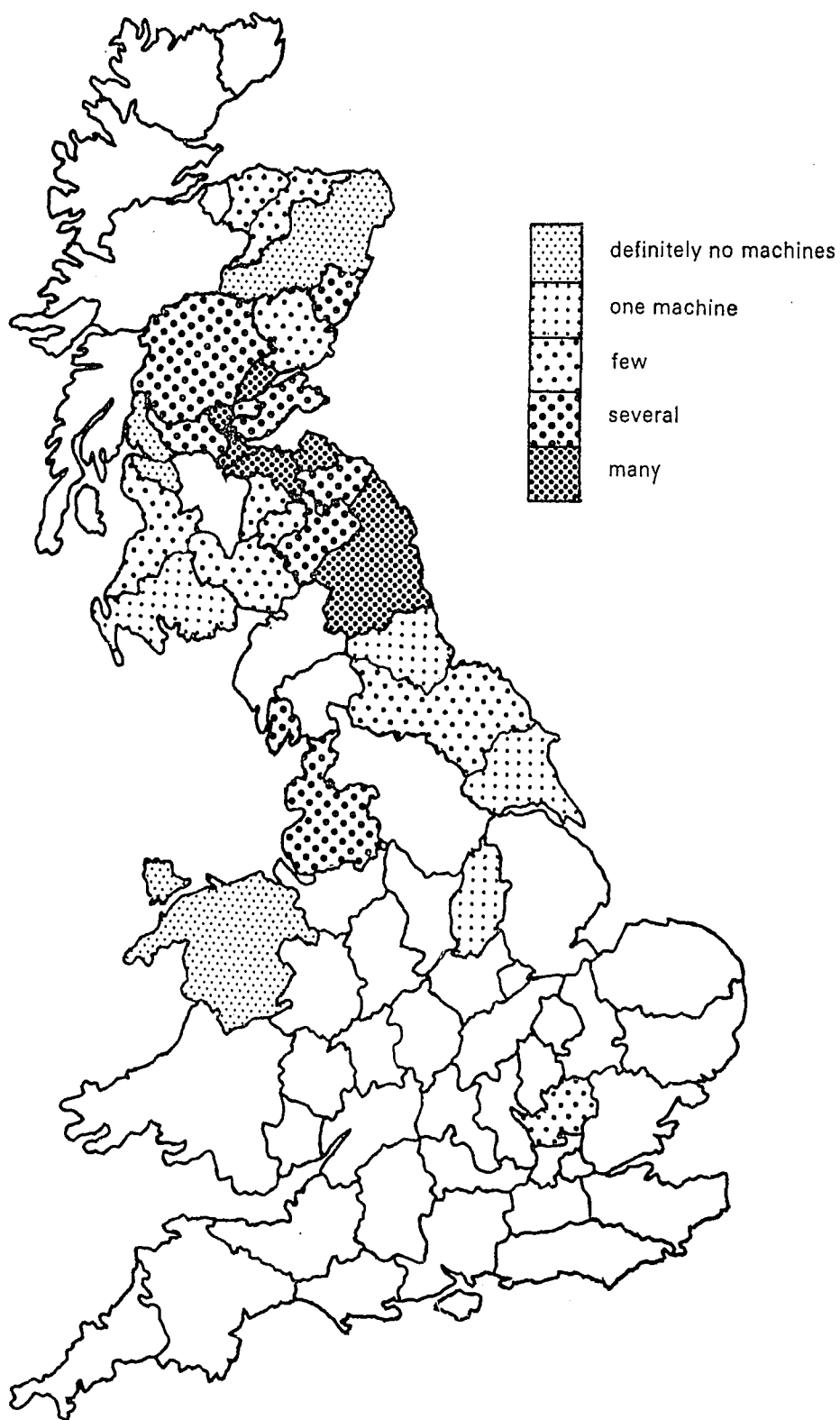
credited with threshing machines in 1794, and gives some idea of where the innovation had been acceptable earliest. The map seems to support the presumption of a diffusion centre in the Lothians and the fairly regular spread outwards from that centre, especially to the corn lands of eastern Scotland. The presence of a very few threshing machines in distant counties may well be explained more by the requirements of agricultural fashion than by those of agricultural economics. "Threshing and winnowing machines, and other implements of husbandry are introduced from time to time in this county, as well as in other counties, to gratify the whim of the moment."<sup>2</sup>

In attempting to trace later and further diffusion of the threshing machine, subsequent editions of the same *Report* were used. This was probably an even more perilous undertaking than the use of the 1794 *Reports*. Some counties produced three or four editions, one as late as 1817, while other produced fewer and earlier ones. Some later editions were identical to earlier ones, although several counties had changed both reporters and observations. Nor was it practically possible to locate the latest editions for every county. These are severe limitations to add to those already accumulated but the revolutionary nature of the machine, and the continuing eagerness of reporters to write something under the disturbing "Implements of Agriculture" heading, prompted nearly all the later reporters to amend the 1794 entry, and seemed to make an attempt to use their later reports worthwhile. The average date of the editions used to devise map 2 is 1808, but a few are necessarily considerably earlier or later. The map again reveals the strength of the centre of diffusion in south-east Scotland and the spread to eastern Scotland and north-east England.<sup>3</sup> The corn counties of south-east England seem slow to accept the threshing machine while Wales and the south-west

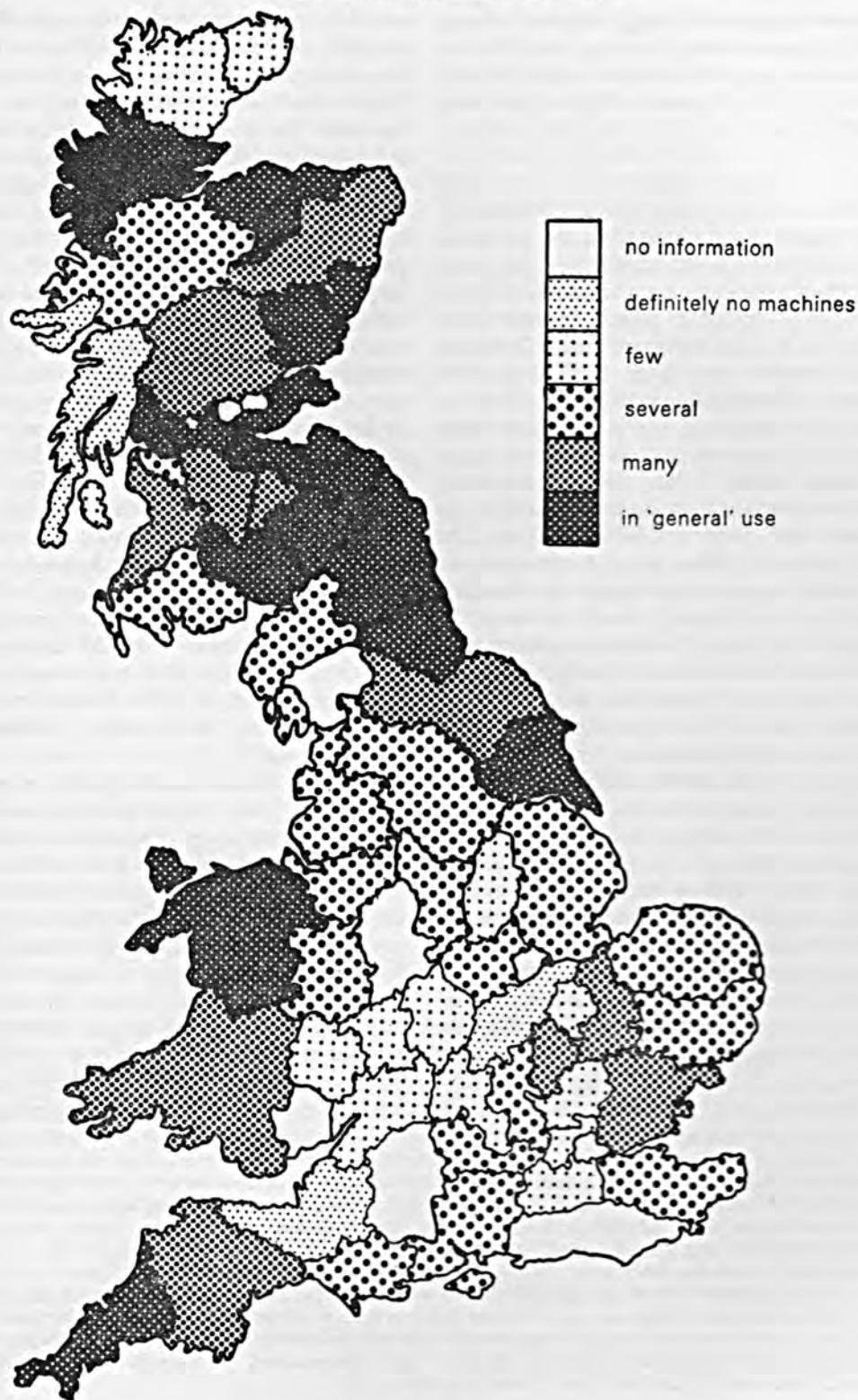
<sup>1</sup> For one opinion see William Marshall, *The Review and Abstract to the County Reports to the Board of Agriculture*, 1, 1808, pp. vii-xxxix.

<sup>2</sup> D. Walker, *Agriculture of Hertfordshire*, 1795, p. 47.

<sup>3</sup> John Dudgeon, 'Account of the Improvements which have taken place in the Agriculture of Scotland since the formation of the Highland Society', *J.R.A.S.E.*, 1, 1840, pp. 59-112. Dudgeon makes the suggestion that the main diffusion of threshing machines took place in the period 1795-1814.



MAP I  
Distribution of threshing machines, c. 1794



MAP 2

Distribution of threshing machines, c. 1808

Information for Cumberland comes from John Housman, *A Topographical Description of Cumberland, Westmorland, Lancashire, and a part of the West Riding of Yorkshire*, 1800, p. 64.

peninsula appear surprisingly eager. The map no longer reveals simple contagious diffusion, but rather suggests that real obstacles have interrupted the spread of the threshing machine.

### III

There are two other means of throwing light on the early diffusion of the threshing machine. Information may be gleaned from the mass of printed agricultural correspondence of the period, or from the present landscape with assistance from early Ordnance Survey maps. The latter method presents certain difficulties; it reveals little about the date of the machine, and is dependent upon associated structures such as dams and sluices or wheel-houses. Where these have evolved no new function they may well have disappeared with their threshing machine. The artificial ponds of northern Northumberland still exist but no longer supply the threshing machines that were generally powered by water in that area.<sup>1</sup> The wheel-house is now often used for additional farmyard storage, and numbers of them can still be seen in eastern Scotland, north-east England, and in the south-west peninsula. Yet it would be dangerous to assume from this evidence that threshing machines were much less numerous elsewhere. The value of any farm building in harsher climates, and its greater permanence when made of stone rather than wood or brick, might well be sufficient to explain the present distribution of wheel-houses. The method reveals only that there remain considerable numbers of wheel-houses in those areas where the early dissemination of the threshing machine seems to have been most successful.

The agricultural periodicals of the Napole-

onic War period are perhaps a more reliable way of tracing this interrupted diffusion. They depended largely on the contributions of farmers from all over the country for their contents. The sheer bulk of their contributions is daunting and their individual accuracy cannot be assumed, but their candid, amateurish nature gives a rather different view of British agriculture from that presented by the more polished publications of the 1840's. Not surprisingly, the revolutionary nature of the threshing machine excites not a little comment from these enthusiasts. Their evidence would seem to confirm that the early and successful diffusion of the threshing machine in the north was not matched by any such development further south. "I should suppose that your correspondent would obtain the best information, upon this subject, from Scotland or Northumberland, where the farmers are said to be most knowing with respect to mills for thrashing corn."<sup>2</sup> "How many [threshing machines] are among the great corn farmers of Norfolk? NOT ONE."<sup>3</sup> Why was it then that these men could talk of "England, where, except in the northern and eastern districts, the thrashing machine is hardly known"?<sup>4</sup>

The wild claims made by some contemporaries to justify their threshing machines do little to encourage confidence in the usefulness of the machine. "I have added millstones to the Thrashing Machines oftener than once and had Corn Reap'd, Thrashed, Drest, and Ground into Meal, and from that Bread baked all done in the same forenoon the bread produced for Dinner."<sup>5</sup> Such extravagant assertions seem only to suggest that greater reliance might be placed on more moderate comment. It is for this reason that no attempt has been made to examine the perplexing and

<sup>1</sup> H. Beavis of the Hancock Museum, Newcastle upon Tyne, mapped many of these in 1967. A *Report as to the Coverings of the Horseways to Thrashing Machines* for Chatton Bailiwick, Nov. 1852, exists in the Duke of Northumberland's archives, and lends support to Beavis' map. Of twenty-one farms, four have no tillage land, five have little tillage land and still use the flail, four have horse-wheels, and eight use water power.—Left-hand window sill, Middle Room, Record Tower, Alnwick Castle.

<sup>2</sup> A Novice, *The Agricultural Magazine*, 1805, p. 328.

<sup>3</sup> *Annals of Agriculture*, xvii, 1792, p. 169.

<sup>4</sup> Arator, *The Farmer's Magazine*, iv, 1803, p. 499.

<sup>5</sup> William Raistrick, millwright of Morpeth, Northumberland, in a letter to Hexham magistrates, 1813.—N.C.R.O., Morpeth Collectanea, vol. II. Violent criticism tends to concentrate on a particular attribute of the machine; for example, Mr Tweddell's opinion of, "These abominable gin-horse thrashing machines, which seemed purposefully constructed to rid the world of 'surplus population'," in A. and J. K. Harrison, *Bulletin of the Cleveland and Teesside Local History Society*, viii, 1970, p. 14.

highly contradictory calculations of contemporaries originally designed to show how fast or slow, efficient or wasteful, cheap or expensive, the threshing machine really was. However, it was frequently claimed that the machine thrashed more grain from the same quantity of corn, and that more cleanly than the flail. Another advantage was "in thrashing damp corn, not capable of being fully accomplished in any other way, and with smutty wheat, which is thrashed by it without any mischief being done to the sound grain, the smut not being crushed comes out whole, and is blown away with the chaff."<sup>1</sup> The machine permitted earlier marketing of grain, "We have sold wheat as fast as we could get it threshed. Why? we think the Prices are likely to be lower; Seed time and good weather prevent Threshing."<sup>2</sup> "How prudent it is to sell as much grain as we conveniently can, at this Season before the Genl. Threshing comes on."<sup>3</sup> Economy of labour too was claimed in that fewer men were required for a much shorter period, and that these need only be used when other farming operations permitted. "Since the introduction of these mills, the grain is thrashed by the ordinary servants on the farm, and without in any material degree obstructing the operations in the field; farmers in general employing their men and forces in this business in bad weather when other operations cannot be carried on."<sup>4</sup> Rapid threshing also meant that closer supervision was possible and that grain did not lie around the barn long enough to be removed by labourers or vermin.<sup>5</sup>

The disadvantages of the machine seem at least as numerous. The threshing machine was supposedly too expensive to be economic, and too complex to be reliable. Smaller, cheaper machines, although initially attractive, rarely seemed to satisfy for long. "I shall here take the liberty of advising every person about to erect a thrashing machine, to beware of economy. I set out on that plan; and, what with the alterations and amendments, the machine has cost me as much as a powerful, well-constructed one would have done at first and, after all, is not the thing."<sup>6</sup> It was argued that only the largest of farms could afford to support one, and that what money might be saved on labour costs would only be spent on increased poor rates. "On farms of size, in a district where flail men are few, they [threshing machines] become a positive and great good. On the contrary, in a country which is fully supplied with farm workmen, they are parochial evils; tho' they may be convenient and profitable to large occupiers."<sup>7</sup> Other complaints were that machine threshing was less thorough and that it damaged the straw. "In situations near great market towns, where straw is an object, I find that it breaks too much, where it is intended for sale."<sup>8</sup> Both humans and horses were said to be potential victims. "All the Machinery, so soon as you can, should be covered for fear of Misfortunes, and the People should have no laps to their Cloaths as many Misfortunes happen from Womin's long loose Cloaths or Mens Coat Laps."<sup>9</sup> "The Value of a horse-power machine is problematical; an invention, added

<sup>1</sup> R. W. Dickson, *Practical Agriculture*, 1810, pp. 28-30.

<sup>2</sup> Matthew Culley of Wark in letter to John Welch of Denton, Co. Durham, 1 Dec. 1801. N.C.R.O./ZCU/6.

<sup>3</sup> George Culley to John Welch, 3 Oct. 1801. N.C.R.O./ZCU/6. <sup>4</sup> Dickson, *op. cit.*, p. 47.

<sup>5</sup> For a summary of current opinion of the advantages of mechanical thrashing see Sir John Sinclair, *Husbandry of Scotland*, 1812, p. 83.

<sup>6</sup> Letter from T—t, *The Farmer's Magazine*, vi, 1805, p. 443. Similar feelings are expressed by R.r.r. in v, 1804, p. 19, and by William Tennant, 'On Scots Agriculture', xi, 1810, p. 177.

<sup>7</sup> William Marshall, *Review and Abstract to the County Reports to the Board of Agriculture*, iv, Midland Department, 1815, p. 637. Similar sentiments are expressed in a quotation from the *Irish Farmer's Journal* of 1814 concerning the introduction of the Hainault scythe and given by E. J. T. Collins, 'Harvest Technology', *Econ. Hist. Rev.*, 2nd ser., xxii, 1969, p. 464; "We would not, in this country where the population is great and without resource except in agriculture, for employment, recommend the too great abridgement of manual labour. What is gained in money is often lost in sustaining those who are thrown into distress from poverty, the result of inoccupation."

<sup>8</sup> John Tuke, *The Agriculture of the North Riding of Yorkshire*, 1800, p. 83.

<sup>9</sup> George Culley to John Welch 23 Nov. 1789. N.C.R.O./ZCU/6. Such accidents may not have been rare: an account of one may be found in N.C.R.O./ZCU/IX/1.

to others, for killing horses."<sup>1</sup> This wide range of criticism is nearly all post-1800, and seems to issue largely from southern counties; but then most agricultural correspondence is post-1800, and where it is possible to locate a source, a great deal comes from the south. However, the later reports of the Board of Agriculture also deliver some criticism. Map 3 shows those counties where reporters find general and serious fault with threshing machines. Its most significant revelation is that no northern county records a complaint.

## IV

Given then that the objections at least balanced the advantages of a threshing machine, why was it that the advantages should be peculiar to some areas, particularly the north, while the objections reigned supreme throughout most of England? Perhaps the average southern farm was too small to support a threshing machine. Contemporary opinion regarded small farms as a barrier to the innovation rather than large farms an incentive. "It will not be found to answer except on larger farms than are to be met with in this county."<sup>2</sup> Where threshold acreages are suggested, they are for farm size below which adoption was thought not to be profitable rather than for farm size above which adoption was thought likely.<sup>3</sup> Perhaps landlord policy was neither enlightened nor generous enough in the south. In the north it was early felt that the threshing machine would "become a fixture which the landlord will originally erect, and it will then pass, like

other fixtures, from tenant to tenant, under the covenant of being left by the out-going one, as our leases generally express it, 'in a sufficient tenenable condition'."<sup>4</sup> "Meikle's threshing machine . . . is a powerful but costly erection. On large corn farms, however, it will answer to erect such machines; and there are frequent instances in Berwickshire and Northumberland, of farmers incurring that expense on the security of twenty-one years' leases."<sup>5</sup> Perhaps the straw argument is crucial. In Hertfordshire one machine was, "used constantly, except for the wheat, the straw of which he carries to London,"<sup>6</sup> while in the north even "small machines may be used with some degree of success, particularly if barley and oats are only cultivated, or where the straw is short and soft."<sup>7</sup> "It is probable that the straw of the northern counties does not break under the operation of the threshing machine so much as that of the south, because the custom does not prevail here of allowing the corn to stand uncut until it becomes dead ripe and sunburnt."<sup>8</sup> Or even if the straw were damaged, it may have mattered less in pastoral districts for "the more straw is beaten and broken in threshing, the better it is, and the further it will go for cattle."<sup>9</sup> Perhaps the general mowing of corn with the scythe in the south and cutting with the sickle in the north was important. "The sickle is almost the only instrument used in reaping. Several mowing instruments have been introduced, but soon given up; and now that thrashing mills are coming much into use, it is probable the use of the sickle will be still

<sup>1</sup> Walter Davies, *The Agriculture of South Wales*, 1815, p. 440.

<sup>2</sup> John Dubourdieu, *Statistical Survey of the County of Down*, 1802, p. 54.

<sup>3</sup> The importance of farm size is discussed in Rev. James Headrich, *Agriculture of Forfar*, 1813, where 100 acres is said to be the smallest practical size. Rev. W. Gooch, *Agriculture of Cambridgeshire*, 1811, suggests 150 acres. See also Hamm's figures in E. J. Hobsbawm and George Rudé, *Captain Swing*, 1969, pp. 361-2 and the *Quarterly Journal of Agriculture*, III, 1831-2, p. 998. The average size of the eighteen Northumberland farms belonging to Greenwich Hospital which are said to have threshing machines in 1805 was 488 acres.—N.C.R.O./N.R.O./467/42/2.

<sup>4</sup> Robert Somerville, *Agriculture of East Lothian*, 1794, p. 36.

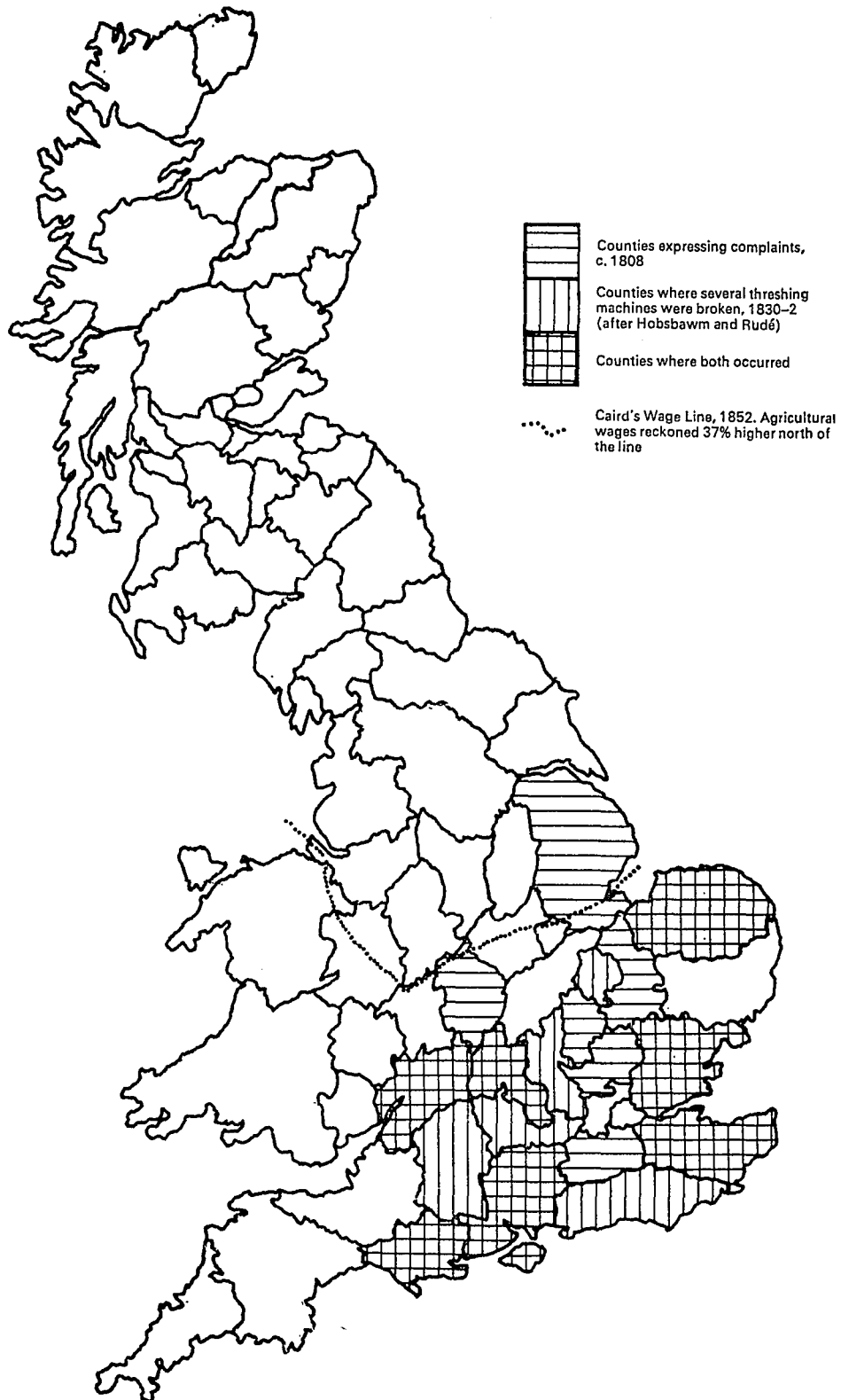
<sup>5</sup> C. J. Loudon, *Encyclopaedia of Agriculture*, 1869, p. 436. Of the eighteen machines mentioned in the Greenwich Hospital's Report on its Northumberland farms in 1805, nine had definitely been bought by the tenant and only three definitely by the landlord. N.C.R.O./N.R.O./467/42/2. The *Parliamentary Report of the Select Committee on Agricultural Customs*, 1848, seems to indicate that considerable doubt still existed as to whether the machine was a fixture or movable, the responsibility of landlord or tenant. See especially pp. 23, 42, 122.

<sup>6</sup> Arthur Young, *Agriculture of Hertfordshire*, 1804, p. 42, referring to a Mr Doo of Bygrave.

<sup>7</sup> Letter from A. G., *The Farmer's Magazine*, v, 1804, p. 419.

<sup>8</sup> John Grey, 'On Farm Buildings', *J.R.A.S.E.*, IV, 1843, p. 3.

<sup>9</sup> Arthur Young, *Annals of Agriculture*, XX, 1793, p. 250.



MAP 3

Distribution of complaints expressed about threshing machines and breaking of machines

more confirmed, as corn thus reaped is in best order for thrashing in the mill."<sup>1</sup> "There is, however, one difficulty in the introduction of thrashing-mills into the southern parts of the kingdom which arises from the manner of harvesting all kinds of grain . . . if the unthrashed corn goes in sideways or irregularly, the thrasher can have but little power upon it. This would no doubt frequently happen in thrashing corn which has been mowed with the scythe."<sup>2</sup> Yet these are surely quibbles and, although supported by many contemporaries, could hardly, even in conjunction, have been totally responsible for the massive suspicion and virtual rejection of the threshing machine by most of England.

A much more convincing explanation is that which suggests the threshing machine was welcome only where labour was scarce and costly. It is difficult to believe that the end product of the threshing machine varied markedly from that of the flail or that the machine had a function more important than compensating for absent or expensive labour.<sup>3</sup> In the north, this argument is clearly and forcefully presented. "This is not a corn country, yet labour being dear, there are several thrashing machines already introduced."<sup>4</sup> "I am situated in the centre, betwixt two navigable rivers, and it is with great difficulty I can get a man to turn his hand to husbandry, as they can make so much greater wages, in a few hours, at either of the ports, by casting of

coals into ships and the ballast out."<sup>5</sup> "In this country where hands are scarce, it is particularly useful, there being full employment in the fields for those who used to thresh."<sup>6</sup> In the south, unskilled labour was neither scarce nor dear except under unusual circumstances. "A considerable number of thrashing machines have been erected in this county, and nearly all of them within the present century: the principal inducement for using them is a scarcity of labourers, which, in a state of warfare, may be expected to be felt most in the maritime districts."<sup>7</sup> When the war did end there is abundant evidence that the cost of labourers dropped, but it would seem in the absence of contrary evidence and in the light of sample prices that the cost of threshing machines and even of horses maintained much of the level reached during wartime inflation.<sup>8</sup> Where the threshing machine was already well established it remained as a valuable capital asset: where it had not spread there was even less incentive for its introduction. By 1816, the balmy days of wartime agricultural prosperity were over, to be replaced by some years of rent abatements, arrears, and short leases, and the sort of discontent expressed in the south by the labourers' disturbances of 1816 and 1830-1.<sup>9</sup> No doubt some machines were built in the south during the first post-war decade—they certainly were in the north<sup>10</sup>—but it is interesting that the Swing Rioters could find but 390 threshing

<sup>1</sup> John Naismith, *Agriculture of Clydesdale*, 1806, p. 98.

<sup>2</sup> Dickson, *op. cit.*, pp. 28-30.

<sup>3</sup> One county—Midlothian—is even able to report a general decrease in the local labour rate for threshing wheat and barley between 1790 and 1804 despite wartime inflation. A footnote reads, "Fallowing to thrashing mills."—*Communications to the Board of Agriculture*, v (1), 1806, p. 34.

<sup>4</sup> John Holt, *Agriculture of Lancashire*, 1795, p. 34.

<sup>5</sup> Stephen Watson of Oleadon, near Sunderland, in a letter of 22 Jan. 1791 to the *Annals of Agriculture*, concerning his new threshing machine.—xv, 1791, pp. 490-2.

<sup>6</sup> John Wilkie of Hetton, Co. Durham, *Annals of Agriculture*, xv, 1791, pp. 487-9.

<sup>7</sup> William Stevenson, *Agriculture of Dorset*, 1812, p. 144. This localized and temporary labour shortage may well explain the popularity of the threshing machine in the south-west.

<sup>8</sup> Robert Kerr, *Agriculture of Berwickshire*, 1813, p. 73, suggests the average price of a horse rose from £12 in 1792 to £20 in 1808. See also John Bailey, *Agriculture of Durham*, 1813, p. 81. Similar increases in machine costs are claimed by Patrick Graham, *Agriculture of Stirling*, 1812, p. 115, and J. Bailey and G. Culley, *Agriculture of Northumberland*, 1805, p. 57.

<sup>9</sup> "The conjunction of a growing population with little alternative to agricultural work and the introduction of the threshing machine—much the earliest machine of any importance in English farming—resulted in chronic winter unemployment and distress in southern England during the early nineteenth century."—E. L. Jones, *Seasons and Prices*, 1964, p. 64. This rather overemphasizes the role of the threshing machine, which was more important as a focal point for dissatisfaction rather than a major cause of it.

<sup>10</sup> Greenwich Hospital erected several on its Northumberland estate between 1816 and 1818, including at least one steam thresher at a cost of £550. The expense of a water driven machine at £1,180 planned in 1815

machines in twenty-one counties upon which to vent their rage.<sup>1</sup> There were no riots in the north. While many southern farmers hardly seemed sorry to see the last of their machinery in 1831,<sup>2</sup> there is some evidence which suggests that for farmers to dismantle their own threshing machines was not an entirely new phenomenon. "A prejudice has arisen among many farmers, from having seen or heard of thrashing machines which, from being ill-constructed or ill-managed, did their work ill and after having occasioned much trouble and expense, were at last obliged to be taken down as useless."<sup>3</sup>

The southern threshing machine had always been of marginal economic benefit. While the north had generally been satisfied with a machine along Meikle lines, expensive but efficient, the south had needed a much cheaper machine to be certain of profit. The eagerness to produce such a machine is best illustrated by the 21 patents taken out for threshing machines between 1789 and 1817, nearly all for smaller, cheaper versions of the Meikle machine, and nearly all made by southern builders.<sup>4</sup> "In general, reduction of bulk, and of expense, appear to actuate all the later claimants to originality in the construction of this highly useful contrivance."<sup>5</sup> The Board of Agriculture Reports for southern counties mention scores of builders, including many of these patentees—"almost every mechanical knave has been tempted to set up the trade of making them, there are swarms of them, therefore, not worth a shilling"<sup>6</sup>—but only one builder is mentioned in all the reports for all the northern counties. In short, it is misleading to talk

of the early threshing machines in the south for there seems to have been a massive variety of machines, a variety which goes some way towards explaining the incredible divergence of prices and performances quoted in the agricultural correspondence. It also seems to explain the early influx of threshing machines in Wales, for many of these appear to have been very small<sup>7</sup> and even hand operated. Where the advantages of the threshing machine were even slightly reduced, as in the south, a less expensive machine was imperative. "A variety of threshing machines have been made in England, both on the rubbing and beating, or skutching, principle, and some combining both modes; but none have been found to answer the purpose of separating the grain from the straw so well as those of Meikle, which is the kind exclusively used in Scotland and the north of England."<sup>8</sup> The situation is summarized by Murray, "Thrashing-machines are to be met with in different parts of the county, but in general on a small scale; and in the manner they are constructed, can do very little work. Mills of two-horse power will never answer; four-horse power is found little enough to thrash, shake the straw, and winnow the grain; and without they are constructed so as to perform all these operations, they are not worth having. There are no thrashing mills that have yet been made, equal to those constructed by the late George Muckle. . . It is impossible to erect a good substantial four-horse mill, with every appendage for less than from £250 to £300."<sup>9</sup> And that sort of sum made what had been only a possible economy for the south during

was not thought prohibitive, the Hospital considering that "no Farmer of any consequence can thrash his Crop within the Year without the Aid of Machinery of some kind."—N.C.R.O./NRO/467/42/3, 4.

<sup>1</sup> Hobsbawm and Rudé, *op. cit.* J. A. Hellen, 'Agricultural Innovation and Detectable Landscape Margins: The Case of Wheelhouses in Northumberland', *Ag. Hist. Rev.*, xx, 1972, pp. 140–54 has traced the past or present existence of over 500 wheelhouses in Northumberland alone.

<sup>2</sup> For an idea of the southern labourers' earlier resentment of the threshing machine see a letter from S. Taylor of Norfolk, *Farmer's Magazine*, xviii, 1817, p. 286, or another from Mr Patterson of Wimbledon, *Annals of Agriculture*, xvii, 1792, p. 170.

<sup>3</sup> William Stevenson, *Agriculture of Surrey*, 1809, pp. 134–5.

<sup>4</sup> J. Allen Ransome, *Implements of Agriculture*, 1843, pp. 263–4.

<sup>5</sup> Capt. Thomas Williamson, *Agricultural Mechanism*, 1810, p. 301.

<sup>6</sup> Thomas Stone, *A Review of the Corrected Agricultural Survey of Lincolnshire by Arthur Young*, 1800, in Tritton, *op. cit.*, p. 11.

<sup>7</sup> The price of the machine generally used in North Wales was only from £20 to £26. Water Davies, *Agriculture of North Wales*, 1813, p. 122.

<sup>8</sup> Loudon, *op. cit.*, p. 463.

<sup>9</sup> Adam Murray, *Agriculture of Warwickshire*, 1815, pp. 59–60.

the war a definite extravagance after it. Even the cheaper machines seem to have become too dear or notorious, for not one patent was taken out between 1818 and 1840.<sup>1</sup>

The reluctance of the south to accept the early threshing machine would be unremarkable were it not for the extremely rapid diffusion of the innovation which had taken place in the north. It seems certain that southern agricultural conditions, particularly the cost and availability of labour, made the northern threshing machines only marginally beneficial even at the best of times, and encouraged the abortive development of cheaper, smaller, and very inferior machines which themselves brought the idea of a threshing machine into further disrepute. The solution for the south was the portable machine, big enough to thresh efficiently, but with its cost shared among many farmers. In a few areas such portable machines had long been known, and may have been the result of builders, unable to sell their best machines, being forced to load them on carts and hire them around local farms. "In some parts of this county [Essex] and Suffolk, it is the custom for implement makers to rent about itinerant machines, to thresh from one farm to another on hire . . . the old objection in the south, is now done away, that none of them could be useful, but in the large scale, and at a high price."<sup>2</sup> Certainly the portable machine with its limited capabilities grew in popularity in the south.

"The machines now in general use throughout the eastern counties of England are, with few exceptions, portable; they are frequently the property of individuals who, itinerating from farm to farm, thrash at a certain price per quarter, the farmer finding horses, and, with the exception of the proprietor, who feeds the machine, the necessary complement of men. They are simply thrashing instruments, having neither circular rakes nor fanners attached."<sup>3</sup> The agricultural engineering firms began to cater for the demand, Ransome's producing the first portable steam thresher in 1841. "The advantages of steam power for working fixed thrashing-mills have long been acknowledged in the northern parts of England and in Scotland; but we believe this is the first attempt to render it portable."<sup>4</sup> Certainly until this date and possibly for some time after it, the flail remained an important method of threshing in the south, fifty years after the north had found the means of supplanting it.<sup>5</sup> There the threshing machine continued in use, and it is likely that many more were built after 1815 than before. "In 1967 it was still possible to meet a Northumberland farmer who, as a young man, had trained horses for driving a thrashing mill in the circular gin-gan which are such a feature of that county."<sup>6</sup> The north had produced the first major revolution in mechanized farming and had greedily accepted it: in the south, that revolution had failed miserably.

## APPENDIX

Fig. 3 is a diagrammatic representation of the workings of the New Bingfield threshing machine,<sup>7</sup> which although built about 1840 is very similar to eighteenth-century ma-

chines. Corn was placed on the feeding board (A) and fed, ears first, through the rollers (B) to come in contact with the fixed skutchers (D) on the revolving drum (C). The grain was

<sup>1</sup> Ransome, *op. cit.*, pp. 263-4.

<sup>2</sup> Letter from R. R., *The Agricultural Magazine*, April 1809, p. 243.

<sup>3</sup> Ransome, *op. cit.*, p. 151.

<sup>4</sup> 'Report on the Implements shown at the Liverpool Show', *J.R.A.S.E.*, II, 1841, p. cvii.

<sup>5</sup> The surprise shown by even educated visitors to the north is illustrative of the southern situation. "There are no barns such as we have in the south. All the farm buildings are of stone; each has a place sufficiently large for beating out the corn by a thrashing machine; and there appears to be no such thing as a barn's floor or a flail in the whole of these counties [Durham and Northumberland]."—William Cobbett, *Rural Rides*, 1832, G. and M. Cole edn, 1930, p. 714. But the Chatton Survey mentioned above would seem to indicate that the flail was still occasionally used in Northumberland twenty years later.

<sup>6</sup> Nigel Harvey, *A History of Farm Buildings in England and Wales*, 1970, p. 153.

<sup>7</sup> By courtesy of the Department of Mechanical Engineering, University of Newcastle upon Tyne, *New Bingfield Project Report*, 1966-7.

knocked out, and with the straw, was swept upwards between drum and concave (E), and deflected by the board (F) to meet with the circular rake (G). The function of this addition was to restore some order to the straw and to allow the grain to pass through the straw, through the concave screen (H) to the chute (J) below. The straw, devoid of most of its grain, passed over the secondary separating drum (K), dropping any remaining grain through the slots in the drum as it went. The grain fell on to the concave (L), from whence it was swept by the brushes (N) through the screen (M). Beneath the chute lurked a winnowing machine, almost as frightening in its complexity, which separated the good grain

from both chaff and lighter grain. The chaff was sent flying to a distant container, the good grain to a nearby one, and the lighter grain, containing unthreshed ears, to an intermediate one from whence it was carried via the bucket elevator (P) to suffer the whole process again. The machine is 20 feet long, 10 feet 6 inches wide, and 19 feet high; and its design and construction are such that it had to be installed permanently into the building used to house it, making it necessary for the machine to be custom-built to suit the conditions imposed upon its installation by the nature of the farm as well as any other special requirements of the original owner.

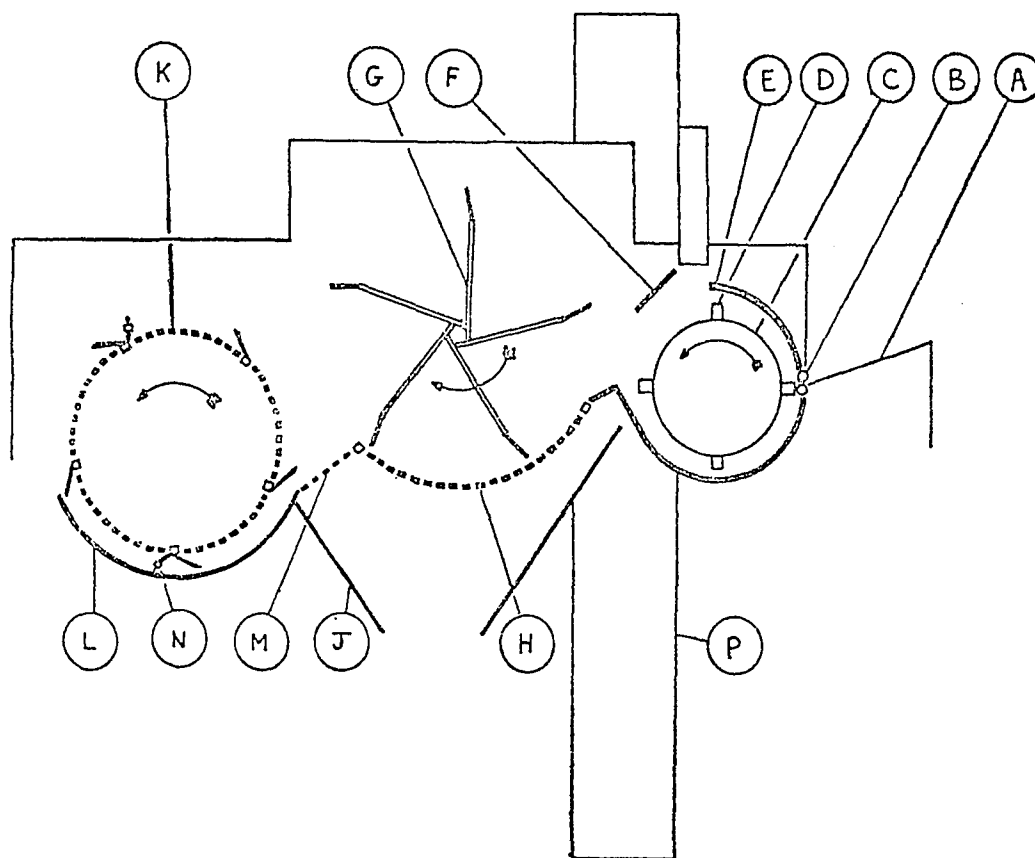


FIG. III

# Some Farming Customs and Practices in the late 1860's: the Case of *St Quinton v. Lett*

By W. HARWOOD LONG

ONE of the most severe droughts in the nineteenth century occurred in the summer of 1868. In April the temperature was above average, in May there was little rainfall, and it was very hot for the time of the year. There was scarcely any rain throughout June in most parts of the country, and the drought continued during July. Although there were heavy rains in August it remained so hot that the moisture evaporated before it could sink into the soil, and the dry conditions with high temperatures persisted into September.<sup>1</sup>

The drought affected farming in various ways. The harvest of 1868 was very early: in many parts of the country it was over by the end of July. The winter-sown crops on heavy soils were generally good, but yields of spring-sown corn were light. The crops worst hit were the clover and grass seeds sown amongst the corn in 1868 for hay or grazing in 1869. Almost without exception these failed, leaving farmers with the problem of how to find keep for their sheep in the summer of 1869, and what to do with the land that should have been providing it. Generally their solution was to sow a green crop directly the weather broke, though many resowed their clover and temporary grasses. Seedsmen in the eastern counties experienced an unprecedented demand in the summer and autumn of 1868 for small seeds—mustard, rape, *trifolium incarnatum*, stubble turnips, Italian rye grass, and grass seeds for early spring keep.<sup>2</sup>

Other farmers broke their rotation, usually the four-course, by growing a second corn crop in place of the failed seeds. This brought with it a further problem, how to get the subsequent cropping into rotation again. A

Yorkshire farmer solved it by growing three corn crops running, and as a result he became involved in a law-suit with his landlord who alleged that the tenant had broken the terms of his agreement. The case was tried in York in 1871 before a judge and jury, and the shorthand notes taken of the evidence were subsequently published.<sup>3</sup>

The evidence of the witnesses and the summing up of the judge throw light on some of the farming customs and practices, and the opinions of agriculturists on them, at that time. The account of the trial is also interesting in its legal aspects, but as these may be of only incidental interest to agricultural historians they are referred to in this article only *en passant*. To some extent material of this sort may suffer in accuracy both from the bias of the witnesses and from the technical limitations of the shorthand note-takers: there are signs of both defects in the published account of the action. But in spite of these limitations enough was disclosed about farming methods and customs to justify discussing the evidence in this context.

The circumstances which led up to the trial were these: the defendant, Joseph Lett, farmed a mainly arable holding of about 600 acres on the Scampston estate of Col. St Quinton, a few miles out of Malton, on the Scarborough road. He had previously farmed in Worcestershire, and had come up to Scampston in 1863. Most of the land in this part of Yorkshire is very light, but the soil on Lett's farm was variable, some of it having more "body" in it than the rest. The other tenants on the estate held their land on yearly tenancies, and followed an unwritten agreement to farm the arable on the four-course shift of roots, barley,

<sup>1</sup> J. C. Morton, 'Some of the Agricultural Lessons of 1868' *J.R.A.S.E.*, 2nd ser., v, 1869, pp. 27-73.

<sup>2</sup> *Ibid.*, p. 48.

<sup>3</sup> *Important Trial in Farming: St Quinton v. Lett.*, printed by Johnson and Tessyman, Ouse Bridge, York.

clover, wheat. Lett, however, insisted on being given a 21-years' lease with freedom of cropping, provided he "shall till, lime, manure, fallow, sow down with seeds, manage, crop and cultivate all arable lands upon the said farm according to the best and approved methods of husbandry, most adapted to the nature and quality of the soil, and known and practised in the neighbourhood where the said premises are situated." This is an important clause for the tenant was liable to a penal rent of £20 for every acre which was not cultivated according to the terms of the lease, and the verdict at the trial depended on the interpretation of this clause in the special conditions of 1869 and 1870.

It will be noted that the penal rent in Lett's agreement was not for a specific act, but for breach of a certain covenant. It was not related to any damage that might have been caused to the landlord, as was customary with many penal rents.<sup>1</sup> (There were, however, some specific clauses in the agreement which carried the same penalty if they were not observed. The tenant had to pay £20 an acre for any land he might sow with woad, line, flax or hemp, or cole, rape, turnips or mustard to stand for a crop of seed. He was also bound by his agreement to manure his grass and meadow land every second year. But in the circumstances of the trial the penal clause was related only to the way the tenant was farming the land itself as defined in the lease. It was the interpretation of this clause which created the dispute on which the trial was based.)

The relations between the tenant and his landlord and, more important in the present context, the landlord's agent, were excellent for some six years, but they deteriorated in 1869 and in 1870 Mr Lett received a letter from the agent which accused him of mis-cropping. The agent claimed that the tenant was liable for the penal rent of £20 an acre on some land that he had cropped twice with a white crop, and an additional rent of £20 an acre on the land cropped three times, a total of

£1,328 15s. The letter continued that the landlord was abandoning his claim on the twice cropped land, but he retained it on the land which had grown three white crops "which would come to between £700 and £800."

The trial resolved itself into an examination of the extent to which the growing of three white crops consecutively could be regarded as being consistent with the terms of the lease which required the tenant to cultivate his land "... according to the best and approved methods of husbandry..." Initially the plaintiff claimed that the lease implied that the defendant should farm according to the custom of the country: as this was based on the four-course, and as Lett admitted that he had not always kept to it, it would follow that the terms had been broken. The defence objected on the grounds that "custom of the country" and the farming "known and practised in the neighbourhood" were not synonymous terms. After this point had been settled in the defendant's favour the examination and cross-examination of the witnesses very soon followed a pattern. Counsel for the plaintiff based his case on the fact that Lett had cropped some of his land with corn in three consecutive years. He asked his witnesses if they had ever grown three corn crops in succession, or even two, and what they would have grown if they had been in Lett's position when his seeds failed in 1868. They were cross-examined on the effect that the application of manures had in maintaining the fertility of the soil in conditions such as these.

The witnesses for the defendant were asked to give their opinions on the general state of the farm and on the prevalence of the practice of growing two or more crops successively, particularly in Scampston and its immediate neighbourhood.

The facts of the case can be summarized from the evidence which Lett himself gave in the witness box. He explained that in 1868 he had sown clover seeds amongst his wheat.

<sup>1</sup> Penal rents were common in agricultural agreements until 1908. But Section 25 of the Agricultural Holdings Act 1908 specifically prevented the landlord from recovering any sum in excess of the damage actually suffered by him in the event of any breach of non-fulfilment of a condition in the contract. The trial at York ante-dated the first Agricultural Holdings Act, which itself was permissive only, and consequently largely ineffective, by four years.

These would normally have provided the keep for his sheep in the summer of 1869. But when he harvested the wheat he found that all his seeds, 87 acres, had completely failed in the drought and he had to plough them up. In place of them, he grew on 40 acres tares (vet-ches) to be eaten by sheep, and on 15 acres he grew turnips. These 55 acres gave him as much green crop as he could consume with his livestock, but he was left with the problem of the remaining 32 acres, and of providing keep for his sheep to graze in the summer of 1869. He solved it by growing a second crop of corn (oats) on the 32 acres, and he left down 34 acres of the previous year's seeds for a second year to help compensate for the land that was growing corn instead of seeds.

The decision to grow two corn crops running led to a further problem—how to get his cropping back into its proper rotation. He did the only thing he thought was possible, he grew another white crop. And to minimize the risks of exhausting the land he gave it a heavy dressing of farmyard manure in the autumn and a top-dressing of a chemical fertilizer in the spring.

The plaintiff's case was supported by twenty-three witnesses: the defendant's by twelve. The witnesses were mainly agents on neighbouring estates, valuers, or tenant farmers. Most of the farmers and several of the agents were farming farms of between 300 and 1,000 acres, often on the Yorkshire Wolds or in Holderness. The plaintiff's agent had arranged for his witnesses to walk the farm in the week before the trial took place and he chartered a special train to convey them to (presumably) Scampston station for this purpose.

The plaintiff's witnesses gave their views on alternative crops to corn in 1869. Several suggested peas or tares. If the land would not grow peas (as the defendant claimed) they recommended white turnips as an alternative crop, even if swedes had been grown in the root break two years earlier. (Only one witness suggested mangolds which, in any case, were seldom grown in the north.) But some agents admitted in cross-examination that if a tenant had come to them for permission to grow a second white crop in such a situation they

would have allowed it. But not a third in any circumstances.

Another witness's alternative to peas was rape. This man, like several others, affirmed that it was certainly wrong to grow another corn crop, and even worse to grow three in a row. Yet when he was cross-examined he admitted that he himself had once taken three white crops in succession, and one of the tenants on his estate had "under very peculiar circumstances" once grown four or five consecutively. It cannot have helped the plaintiff's case to hear that this man was "a most excellent tenant" who would not do anything that was not beneficial both to the farm and to himself.

It is surprising that so many witnesses were prepared to suggest turnips in 1869 on land that had grown a turnip crop only two years earlier: the fear of disease was apparently no deterrent, although the danger of finger and toe and of "the grub" was mentioned by some of them. No witness mentioned the turnip fly by name. There was, in fact, very little in the evidence to suggest that farmers and agents appreciated the value of rotations for protecting crops against insect pests and fungus diseases, though some witnesses would have preferred if possible to grow clover no more frequently than one year in eight for this reason. Much, however, was made of the advantages of rotations for preventing the exhaustion of the soil which would follow from continuous cropping with corn. Each witness asked by the plaintiff's counsel why he regarded continuous corn-growing to be contrary to farming according to the "best and most approved method of husbandry in this neighbourhood" replied that it exhausted the soil. But none seemed at all sure what was meant by exhaustion.

One witness, a tenant farmer occupying not less than 2,000 acres, asked whether he meant that certain elements were taken out of the soil, could only repeat: "it exhausts the land," and in face of several further questions inviting him to be more specific, was quite unable or unwilling to do so, pleading that he was not a chemist. Another tenant of 500 acres in Holderness refused to admit that the exhaustion of the soil by continuous cropping could

be offset by applying chemical manures, although a big increase in their use was taking place throughout the country at this time.<sup>1</sup> For himself, he very seldom used them and agreed that there was "nowt like muck—and lime."

A rather more enlightened view on plant nutrition came from a farmer of 600 acres in the East Riding who was also a member of the Royal Agricultural Society. He explained that chemical manures provided ammonia, nitrogen, and phosphates to the soil "all of which are the elements for white crops." He then went on to talk about the importance of silica, an element "which nature only can supply." He claimed that although a green crop does not require it, silica was an essential element in the growing of corn crops. Silica was also referred to by one of the witnesses for the defence. He was the agent for a large estate in Yorkshire and had formerly been a professor at the Royal Agricultural College, Cirencester. He claimed that, while green crops do not require the addition of silica to the soil, it was a necessity for white crops, and was supplied in a well-known mineral manure. Even the learned judge referred to it respectfully in his summing up, and remarked "you can see it in the straw through a microscope."

One hundred years ago silica was evidently regarded as one of the essential plant foods. In fact, according to the "mineral theory" of plant nutrition which was popular in the nineteenth century, particularly amongst German scientists, if an element is found in the ash of a plant, it must be essential or important to it.<sup>2</sup> The theory apparently failed to survive the century. The ninth edition of Fream's *Elements of Agriculture* mentions it,<sup>3</sup> but not as a plant food, and it was no longer included in the list of plant foods in the lectures given to students of agriculture fifty years ago.

Lett's attitude towards manures was very different from that of most witnesses. During the three years 1868–70 he spent a total of £849 on manures, and a further £1,301 on cake and corn. Some of the fields which were growing a third corn crop in 1870 yielded 5 and

4½ qrs. of wheat to the acre in that year, and although a third field yielded only 3 qrs. it must be remembered that as late as the inter-war period of the present century a yield of 4 qrs. to the acre was then regarded as satisfactory on all but the best land. Lett had also clayed 126 acres of his lightest land. (This did not include the 32 acres in question.) The dressings amounted to from 90 to 100 loads an acre at a cost of £7 to £12 an acre.

It was not enough, however, for Lett and his counsel to show that he was farming well: they had to convince the jury that he was farming his land "according to the best and most approved methods of husbandry . . . known and practised in the neighbourhood." To do this it was necessary to prove that corn was the best crop to grow on the 32 acres, taking into account the special conditions of 1869 and 1870, and the fact that Lett had admitted that he normally kept to a modified four-course rotation.

Lett explained that altogether 87 acres of seeds had failed, but he had dealt with 55 of them in a way nobody could take exception to. Witnesses for the plaintiff had suggested various green crops which they would have sown under the circumstances, and Lett referred to them one by one to explain why he had considered them to be unsuitable. He had been reluctant to grow turnips because they had been grown only two years previously on the same land, and peas had always failed when he had tried to grow them in the past. He regarded beans as a hazardous crop, and rape and mustard, if he had grown them, would have provided more sheep keep than he could have done with at the time. The period of the year he had to plan for was the summer months, when normally the seeds would have provided the grazing for his sheep. Rather surprisingly Lett made no reference to tares as an alternative, though many of the plaintiff's witnesses gave tares as their first choice. Tares have many uses. One is for folding with sheep during the summer.<sup>4</sup> Consumed in this way they would have solved the problem. But Lett had already

<sup>1</sup> See F. M. L. Thompson, 'The Second Agricultural Revolution, 1815–1880', *Econ. Hist. Rev.*, 2nd ser., xxi, no. 1, April 1968, pp. 62–77.

<sup>2</sup> I am indebted to Dr D. H. Robinson for the reference to the mineral theory.

<sup>3</sup> W. Fream, *Elements of Agriculture*, 9th edn, 1914, pp. 7, 11. <sup>4</sup> Fream, *op. cit.*, p. 347.

sown 40 acres of his seeds break with tares, and he probably considered that he was growing a sufficient acreage to carry his sheep through the summer. (It is interesting that the increased requirement of labour which these crops must have represented over a standing crop of clover does not seem to have been regarded as a limiting factor.) However, one of the witnesses mentioned that the practice of grazing tares with sheep was only just being introduced at that time, and Lett may have been unwilling to risk a larger acreage on an untried system.

He emphasised the difficulties that he was under in attempting to bring his land back into rotation after following corn with corn in 1869. Yet he and many of the witnesses admitted that it was a common practice to grow two corn crops in two years. It seems, indeed, that even those tenants whose yearly tenancies required them to farm on the four-course regarded it as their right to grow two corn crops if they wished to do so. Nor was it unknown for tenants to grow three and even four corn crops successively, as several neighbouring farmers admitted they had done themselves, sometimes with their landlord's permission and sometimes without it. In fact, it is probable that more care is taken nowadays to allow for break crops in a rotation than was the custom a hundred years ago. Caird mentions that wheat was regularly grown in alternate years, and according to Charnock, a 36 bu. an acre crop grown near Wakefield was the fifth wheat crop grown in successive years.<sup>1</sup> Charnock also refers to a field on the banks of the river Calder which, having grown wheat for twenty-seven years out of thirty-one, was still yielding 39–42 bu. per acre at the end of that time. Another field in the same district had grown wheat for six years running and was still producing 36 bu. to the acre of excellent quality wheat. Even one of the plaintiff's witnesses admitted that a field had been pointed out to him that had grown ten white crops in succession. The interesting diaries of Francis Cruse Waide reveal that he grew

wheat for six years running on a field near Pontefract, beginning in 1854, before bringing the field into the four-course rotation. On another field he grew wheat ten times in the twenty years 1854–73.<sup>2</sup>

These records suggest that crops were less susceptible to pests and diseases in the nineteenth century than they are today, though in Cambridgeshire a field has been cropped with wheat each year in an experiment extending from 1952 to the present time. It yielded 30 cwt. per acre in 1952 and 42 cwt. (say 75 bu.) per acre in 1972.<sup>3</sup> There seems little doubt, too, that the four-course system was much less widely observed by farmers than their agreements would lead one to suppose. It was hinted by one of the witnesses in the Lett trial that the four-course system was breaking down largely as a result of the application of fertilizers which made feasible more freedom of cropping. Even in Norfolk, the home of the system, one very well-known farmer was congratulating himself on the fact that his agreement allowed him to farm as he liked, and the need for ample liberty of cultivation was regarded as the first of the lessons to be learnt from the drought of 1868.<sup>4</sup>

In spite of the widespread failure of the seeds, the north had better root crops than the south in 1868, though the crop failed completely as far north as Derbyshire.<sup>5</sup> Waide noted many good fields of turnips between Malton and Scarborough "looking almost as well as in ordinary years." Whether he travelled by road or rail, he must almost certainly have passed through Scampston on this occasion.

The knowledge that the four-course shift was breaking down may have influenced the jury, composed partly of tenant farmers, to reach their verdict; though having had an opportunity to go over Lett's holding they must also have appreciated the high standard of cultivation which Lett set himself, and the good crops he was getting in spite of the naturally poor nature of the soil. At any rate, after deliberating for just under an hour, they returned a verdict in favour of the defendant.

<sup>1</sup> J. Caird, *English Agriculture in 1850–51*, 1851, p. 291; J. H. Charnock, 'On the Farming of the West Riding of Yorkshire', *J.R.A.S.E.*, 1st ser., ix, 1848, p. 295.

<sup>2</sup> W. Harwood Long, 'Farmer Waide's Diary 1836–73', *Farmer's Weekly*, 1 Feb. 1974, p. viii.

<sup>3</sup> *British Farmer and Stockbreeder*, 14 April 1973.

<sup>4</sup> Morton, *op. cit.*, p. 66.

<sup>5</sup> *Ibid.*, p. 61.

The plaintiff appealed against the verdict on the grounds that the judge had misdirected the jury on some points. The appeal was held in June 1871 before three judges but they found no evidence of misdirection, and the appeal therefore failed. It is pleasant to be able to add

that in spite of the acrimony which was engendered by the trial, time quickly blunted the edge of the bitterness between the principal contestants, and they were not long in resuming the amicable relationships that had existed at the beginning of the tenancy.

## Notes and Comments

### THE BRITISH AGRICULTURAL HISTORY SOCIETY

The Winter Conference of the Society was held jointly with the Veterinary History Society at the Geography Department, University College of London, on 30 November 1974. The theme of the conference was 'Animals in Agriculture', and in the morning session there were papers on the development of cattle-farming in Great Britain in the nineteenth century by Dr David Taylor, and on the emergence and refinement of sheep breeds since domestication by Dr Michael Ryder.

In the afternoon Miss Daphne Goodall spoke on the role of horses in agriculture and Mr Sherwin Hall on the history of the statutory control of livestock diseases, with special reference to the background to the disastrous cattle plague of 1865-6. The joint meeting proved an excellent opportunity for the exchange of views on related problems by specialists in different disciplines and it is hoped to organize further joint conferences in future.

### THE B.A.H.S. ANNUAL CONFERENCE 1975

This will be held from Monday, 7 April, to Wednesday, 9 April 1975, at Harper Adams Agricultural College, near Newport, Shropshire. There will be papers by John Higgs, President of the B.A.H.S., Professor H. E. Hallam, Dr F. V. Emery, Dr D. G. Hey, Dr J. R. Walton, and Dr A. R. H. Baker. Further details may be obtained from Mr A. D. M. Phillips, Department of Geography, The University, Keele, Staffordshire, ST5 5BG.

### TOOLS AND TILLAGE

A recent edition of this journal, vol. 11, 2, 1973, contains articles on Irish ploughing

practices, the multi-manned pull-shovel in contemporary Korea, spade cultivation in the New Guinea highlands, a 6,000-year-old ploughing implement from Satrup Moor in Schleswig-Holstein, and the classification of types of iron plough-parts in Bulgaria. Subscription to the journal costs U.S. \$4 or its equivalent, and single copies may be obtained from the agents, Messrs Gyldendal, 3 Klareboderne, DK-1001 Copenhagen K. Denmark.

### PEASANT STUDIES NEWSLETTER

Volume 11, 2, of this American publication contains a number of papers of interest to various specialists. David Lehmann provides the introduction to his book, *Whose Peasants? Studies in Land Reform in India, China, Peru, and Chile*, Peter J. Claus writes on the structural definition of peasant society, and Mah Foud Bennoune discusses socio-economic changes in rural Algeria between 1830 and 1954. There are also news and reports of academic meetings. Annual subscriptions, U.S. \$5, should be sent to the Department of History, University of Pittsburgh, Pittsburgh, Pennsylvania 15260.

### EAST ANGLIAN HISTORY AND ARCHAEOLOGY

The second issue of *Work in Progress* contains details of the many pieces of research now being carried on in the field of East Anglian history and archaeology. The list, extending to 43 pages, is divided into periods, and gives the names and addresses of investigators together with brief synopses of their subjects. Copies are available from the Centre of East Anglian Studies, University of East Anglia, University Village, Norwich NOR 88C, price 40p, post free.

# Annual List and Brief Review of Articles on Agrarian History

By DAVID HEY

*This list is shorter than usual as it follows on that published in vol. 22, pt 1, and covers only the second half of the calendar year 1973. The next list of articles to appear will be for the calendar year 1974, and subsequent lists will each cover a calendar year.*

*The following comments are intended to draw attention to some of the more significant contributions made in recent periodical literature. The numbers in brackets refer to the numbered list which follows, where the full details of the articles are given. The date of publication is 1973, unless otherwise noted.*

SEVERAL articles have been published in this period on forms and patterns of early settlement. Jensen (59) surveys recent work on northern place-names, Cox (19) locates the meeting-places of the Leicestershire hundreds, Davies (23) identifies a unit of measurement of about 500 acres that was peculiar to Monmouth and Hereford between the sixth and ninth centuries, Addyman (1) reports on the excavations at Chalton, Hampshire, and Cunliffe (20) examines settlement patterns in that vicinity. Roberts (87) argues that certain Durham village plans were deliberately imposed after the "harrying of the north" in the late eleventh century.

Amongst medieval studies, Harvey (45) demonstrates that one of the three great inflationary periods of recorded English history occurred between 1180 and 1220, May (75) suggests that the rate of fine levied in the thirteenth-century Winchester and Bec manor courts provides a reasonable index of peasant prosperity, and Bridbury (13) argues that the Black Death was more devastating in the 1370's than in the mid-fourteenth century. Dornier (25) reports on the archaeological investigation of a recently restored Leicestershire manor house, Hewlett (48) suggests the usefulness of recording evolved banks along with hedgerow species as ancient landscape features, and Dodgshon (24) maintains that the Scottish infield-outfield system was basically a distinction in the nature of landholding that arose in the fifteenth century.

Several articles deal with rural industries.

Spenceley (99) argues that pillow lacemaking was a source of employment for women and children in populous arable areas and therefore does not fit the usual pattern, while Kennett (64) uses detailed overseers' accounts to describe a Bedfordshire pauper cloth-making enterprise of 1649-54. Holderness (52) makes use of probate material in his analysis of rural Lincolnshire tradesmen. The early history of heavy industry in the north-east is discussed by Blanchard (10), and Hammersley (41) demonstrates that the British charcoal industry did not suffer from strikingly exceptional fuel problems, for the springwoods were astutely managed.

For the early-modern period there is a wide variety of subjects. Gould (36) investigates the currency and exchange rate, and Gentles (32) analyses the purchasers of those Crown lands that were sold in 1649 for £1.4 million. Marshall (72) provides a study of the post-Restoration Lakeland yeoman, Woodward (112) uses port-books in his account of the fluctuating fortunes of the important Anglo-Irish livestock trade, and Hewett (47) uses East Anglian examples to establish the evolution of the post-medieval two-part house with central chimney stack. Marriage patterns in England (77) and Scotland (16) receive separate treatment, and Appleby (3) pinpoints harvest crises and visitations of the plague in the north-west.

Coming down to modern times, Schofield (92) casts doubt on the relationship between literacy and economic growth in the period

1750-1850, and Harris (42) gives an account of an East Riding land surveyor. Richards (84, 85) discusses estate problems in the Scottish highlands, while Hueckel (56) analyses the impact of the Napoleonic wars on agricultural outputs, rents, and wages. There are several articles on various aspects of Non-conformity, including two attempts (49, 107) to discern growth patterns in both rural and urban areas.

Agricultural technology is represented in the Harrisons' survey (43) of North Yorkshire horse-wheels and in Lennox's account (69) of a firm of agricultural engineers. Sheail (94) describes the work of the sixty-one First World War county committees in increasing farm production, Gilg (34) studies the diffusion of the 1970-1 fowl pest epidemic, and Fussell (30) uses a wide range of examples in discussing what is meant by the term "traditional agriculture."

1. ADDYMAN, P. V. and others. *Anglo-Saxon Houses at Chalton, Hampshire*. Medieval Archaeology, vol. xvi, pp. 13-32.
2. ALCOCK, N. W. *An East Devon Manor in Later Middle Ages, Part II: Leasing the Demesne, 1423-1525; 1525-1650*. Devons. Ass., vol. cv, pp. 141-90.
3. APPLEBY, A. B. *Disease or Famine? Mortality in Cumberland and Westmorland, 1580-1640*. Econ. Hist. Rev., vol. xxvi, no. 3, pp. 403-31.
4. ASHBY, M. K. *Cottage History*. Local Historian, vol. x, no. 7, pp. 327-31.
5. ATKINSON, D. R. *Further Notes on Clay Tobacco Pipes and Pipemakers from the Marlborough and Salisbury Districts*. Wilts. Arch. & Nat. Hist. Mag., vol. lxvii, pt B, pp. 149-56.
6. AYLMER, G. E. *St Patrick's Day 1628 in Witham, Essex*. Past and Present, no. 61, pp. 139-48.
7. AYMARD, M. *The History of Nutrition and Economic History* (review article). Jnl European Econ. History, vol. ii, no. 1, pp. 207-19.
8. BENNETT, M. J. *A County Community: Social Cohesion amongst the Cheshire Gentry, 1400-1425*. Northern History, vol. x, pp. 24-44.
9. BENNETT, M. J. *The Lancashire and Cheshire Clergy, 1379*. Historic Soc. of Lancs. and Cheshire, vol. cxxiv, pp. 1-30.
10. BLANCHARD, I. S. W. *Commercial Crisis and Change: Trade and the Industrial Economy of the North-East, 1509-1532*. Northern History, vol. viii, pp. 64-87.
11. BORLASE, W. *The Parish of Ludgvan in 1770*. Jnl Royal Inst. of Cornwall, vol. vi, pt 4, pp. 275-92.
12. BOWEN, C. and CUNLIFFE, B. *The Society's Research Projects: 1. The Evolution of the Landscape*. Antiquaries Jnl, vol. liii, pt 1, pp. 9-13.
13. BRIDBURY, A. R. *The Black Death*. Econ. Hist. Rev., vol. xxvi, no. 4, pp. 577-92.
14. BROOKS, F. W. *Local History, 1930-1948*. Local Historian, vol. x, no. 8, pp. 385-89.
15. BURLEIGH, G. R. *An Introduction to Deserted Medieval Villages in East Sussex*. Sussex Archaeol. Coll., vol. iii, pp. 45-83.
16. CARTER, I. *Marriage Patterns and Social Sectors in Scotland before the Eighteenth Century*. Scottish Studies, vol. xvii, pt 1, pp. 51-60.
17. CHARLTON, C. 'As to the Estates of the Rt. Hon. The Earl of Chesterfield in the County of Derby' (transcript of 1793 document). Derbys. Miscellany, vol. vi, pt 6, pp. 169-81.
18. COLYER, R. J. 'No Foot, No Ox': Cattle Shoeing in 19th Century Wales. Country Life, vol. cliv, no. 3980, pp. 991-2.
19. COX, B. H. *Leicestershire Moot-Sites: The Place-Name Evidence*. Leics. Arch. & Hist. Soc., vol. xlvii, pp. 14-21.
20. CUNLIFFE, B. *Saxon and Medieval Settlement Patterns in the Region of Chalton, Hampshire*. Medieval Archaeology, vol. xvi, pp. 1-12.
21. CUNLIFFE, B. *Manor Farm, Chalton, Hampshire*. Post-Medieval Archaeology, vol. vii, pp. 31-59.
22. DAVIES, C. S. L. *Peasant Revolt in France and England: A Comparison*. Agric. Hist. Rev., vol. xxi, pt 2, pp. 122-34.
23. DAVIES, W. *Unciae: Land Measurement in Liber Landavensis*. Agric. Hist. Rev., vol. xxi, pt 2, pp. 111-21.
24. DODGSHON, R. A. *The Nature and Development of Infield-Outfield in Scotland*.

- Trans. Inst. of Brit. Geographers, vol. LIX, pp. 1-24.
25. DORNIER, A. and others. *Donington le Heath*. Leics. Arch. & Hist. Soc., vol. XLVII, pp. 22-42.
  26. EVANS, G. E. *Approaches to Interviewing*. Oral History, vol. IV, pp. 56-71.
  27. FINN, R. W. *Changes in the Population of Essex, 1066-86*. Essex Archaeology and History, vol. IV, pp. 128-33.
  28. FUSSELL, G. E. *Channel Islands Cattle: The Making of the Breeds*. Veterinary History, no. 1, pp. 18-22.
  29. FUSSELL, G. E. *The Ox and The Ass*. Country Gentleman's Mag., Dec. 1973, pp. 735-37.
  30. FUSSELL, G. E. *What is Traditional Agriculture?* Proc. Hungarian Agric. Museum (1971-72), pp. 9-14.
  31. GARRAD, L. S. and SCATCHARD, W. J. *Rope-Making in the Isle of Man*. Local Historian, vol. X, no. 7, pp. 332-3.
  32. GENTLES, I. *The Sales of Crown Lands During the English Revolution*. Econ. Hist. Rev., vol. XXVI, no. 4, pp. 614-35.
  33. GILBERT, C. G. *New Park, Huby—An Early Seventeenth Century Hunting Lodge*. Yorks. Arch. Jnl, vol. XCV, pp. 185-88.
  34. GILG, A. W. *A Study in Agricultural Disease Diffusion: The Case of the 1970-71 Fowl Pest Epidemic*. Trans. Inst. Brit. Geographers, vol. LIX, pp. 77-97.
  35. GODFREY, H. *The Archives of Reckitt & Colman Food Division (Formerly J. & J. Colman Ltd)*. Business Archives, no. 39, pp. 50-4.
  36. GOULD, J. D. *Currency and Exchange Rates in Sixteenth Century England*. Jnl European Econ. Hist., vol. II, no. 1, pp. 149-59.
  37. GRIFFIN, C. P. *Methodism in the Leicestershire and South Derbyshire Coalfield in the Nineteenth Century*. Proc. Wesley Hist. Soc., vol. XXXIX, pt 3, pp. 62-72.
  38. HALL, D. N. *Modern Surveys of Medieval Field Systems*. Beds. Arch. Jnl, vol. VII, pp. 53-66.
  39. HALL, D. N. and HUTCHINGS, J. B. *The Distribution of Archaeological Sites between the Nene and Ouse Valleys*. Beds. Arch. Jnl, vol. VII, pp. 1-16.
  40. HALL, D. S. *Quakers in Richmond and Swaledale*. Bull. Cleveland & Teesside Loc. Hist. Soc., vol. XX, pp. 1-11.
  41. HAMMERSLEY, G. *The Charcoal Iron Industry and its Fuel, 1540-1750*. Econ. Hist. Rev., vol. XXVI, no. 4, pp. 593-613.
  42. HARRIS, A. *An East Yorkshire Land Surveyor: William Watson of Seaton Ross*. Yorks. Arch. Jnl, vol. XLV, pp. 149-57.
  43. HARRISON, A. and J. K. *The Horse-Wheel in North Yorkshire*. Indus. Archaeology, vol. X, no. 3, pp. 247-65.
  44. HARRISON, K. *The Primitive Anglo-Saxon Calendar*. Antiquity, vol. XLVII, no. 188, pp. 284-7.
  45. HARVEY, P. D. A. *The English Inflation of 1180-1220*. Past and Present, no. 61, pp. 3-30.
  46. HEATH, J. *A Derbyshire Diary of One Hundred Years Ago*. Derbys. Miscellany, vol. VI, pt 5, pp. 153-55.
  47. HEWETT, C. A. *The Development of the Post-Medieval House*. Post Medieval Archaeology, vol. VII, pp. 60-78.
  48. HEWLETT, G. *Reconstructing a Historical Landscape from Field and Documentary Evidence: Otford in Kent*. Agric. Hist. Rev., vol. XXI, pt 2, pp. 94-110.
  49. HEY, D. G. *The Pattern of Nonconformity in South Yorkshire, 1660-1851*. Northern History, vol. VIII, pp. 86-118.
  50. HILL, Sir F. *Squire and Parson in Early Victorian Lincolnshire*. History, vol. LVIII, no. 194, pp. 337-49.
  51. HILTON, R. *Further Dimensions for Local Historians?* Local Historian, vol. X, no. 8, pp. 390-4.
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  53. HOLLICK, K. *Ox-Horns and Ashbourne*. Derbys. Miscellany, vol. VI, pt 5, p. 162.
  54. HOPKINSON, G. G. *Cattle Plague in South Yorkshire, 1746-57*. Trans. Hunter Arch. Soc., vol. X, pt 2, p. 149.
  55. HOWELLS, B. *Local History in Wales*. Local Historian, vol. X, no. 8, pp. 404-10.
  56. HUECKEL, G. *War and the British Economy 1793-1815: A General Equilibrium Analysis*. Explorations in Econ. History, vol. X, no. 4, pp. 365-96.

57. HUGGINS, P. J. *Monastic Grange and Outer Close Excavations, Waltham Abbey, 1970-72*. Essex Archaeology and History, vol. iv, pp. 30-127.
58. JAMES, M. E. *The Concept of Order and the Northern Rising, 1569*. Past and Present, no. 60, pp. 49-83.
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60. JOHN, E. *The Agrarian History of England and Wales, Volume 1* (review article). Agric. Hist. Rev., vol. xxi, pt 2, pp. 135-9.
61. JONES, G. P. *Continuity and Change in Surname in Four Northern Parishes*. Trans. Cumb. & Westmor. Antiq. & Arch. Soc., vol. lxxiii, pp. 143-7.
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63. JONES, I. E. *The Township of Llyslyn, Carno*. Montgomerys. Coll., vol. lxii, pt 2, pp. 202-11.
64. KENNETT, D. H. *A Pauper Cloth-Making Account of the Seventeenth Century*. Textile History, vol. iv, pp. 125-9.
65. KEY, B. *The Society of Fritchley Friends, 1869-1968*. Derbys. Miscellany, vol. vi, pt 5, pp. 156-61.
66. KIRKHAM, N. *Wingfield Manor in the Civil War*. Derbys. Miscellany, vol. vi, pt 5, pp. 139-52.
67. LAWRENCE, S. *Clay Tobacco Pipe Makers in West Yorkshire*. Yorks. Arch. Jnl, vol. xlv, pp. 189-93.
68. LEA, J. *The Growth of the Baptist Denomination in Mid-Victorian Lancashire and Cheshire*. Historic Soc. of Lancs. & Cheshire, vol. cxxiv, pp. 128-53.
69. LENNOX, R. G. *The History of William Dickie & Sons, Implement Makers and Agricultural Engineers, East Kilbride*. Indus. Archaeology, vol. x, no. 4, pp. 393-9.
70. McCLOSKEY, D. N. *New Perspectives on the Old Poor Law*. Explorations in Econ. History, vol. x, no. 4, pp. 419-36.
71. MANDLE, W. F. *Games People Played: Cricket and Football in England and Victoria in the Late Nineteenth Century*. Historical Studies, vol. xv, no. 60, pp. 511-35.
72. MARSHALL, J. D. *The Domestic Economy of the Lakeland Yeoman, 1660-1689*. Trans. Cumb. & Westmor. Antiq. & Arch. Soc., vol. lxxiii, pp. 190-219.
73. MATTHEWS, C. L. and HUTCHINS, J. B. *A Roman Well at Dunstable*. Beds. Arch. Jnl, vol. vii, pp. 21-34.
74. MAWSON, D. J. W. *Brampton in the 1790's*. Trans. Cumb. & Westmor. Antiq. & Arch. Soc., vol. lxxiii, pp. 299-316.
75. MAY, A. N. *An Index of Thirteenth Century Peasant Impoverishment? Manor Court Fines*. Econ. Hist. Rev., vol. xxvi, no. 3, pp. 389-402.
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77. OUTHWAITE, R. B. *Age of Marriage in England from the Late Seventeenth to the Nineteenth Century*. Trans. Royal Hist. Soc., vol. xxiii, pp. 55-70.
78. PONTING, K. G. *Clothmaking in Sixteen Scenes from about 1760*. Textile History, vol. iv, pp. 109-15.
79. PONTING, K. G. *Logwood: An Interesting Dye*. Jnl European Econ. History, vol. ii, no. 1, pp. 109-19.
80. POST, J. B. *The Tauke Family in the Fourteenth and Fifteenth Centuries*. Sussex Archaeol. Coll., vol. iii, pp. 93-107.
81. POTTER, G. R. *Fifty Years of Local History*. Lincs. History & Archaeology, vol. vii, pp. 55-61.
82. PRICE, D. G. *Ancient Fields on Shaugh Moor*. Devons. Assoc., vol. cv, pp. 87-94.
83. RACK, H. D. *Domestic Visitation: A Chapter in Early Nineteenth Century Evangelism*. Jnl Eccles. History, vol. xxiv, no. 3, pp. 357-76.
84. RICHARDS, E. *How Tame Were the Highlanders During the Clearances?* Scottish Studies, vol. xvii, pt 1, pp. 35-50.
85. RICHARDS, E. *Problems on the Cromartie Estate, 1851-53*. Scottish Hist. Rev., vol. lii, pt 2, pp. 149-64.
86. RIMMER, D. J. A. *A Berkswell Glebe Terrier*. Warwicks History, vol. ii, no. 3, pp. 28-30.

87. ROBERTS, B. K. *Village Plans in County Durham: A Preliminary Statement*. Medieval Archaeology, vol. xvi, pp. 33-56.
88. ROWE, D. J. *Occupations in Northumberland and Durham, 1851-1911*. Northern History, vol. viii, pp. 119-31.
89. RUDKIN, D. J. *The Excavations of an Early Medieval Site at Buckminster*, Leics. Arch. & Hist. Soc., vol. xlvii, pp. 1-13.
90. SANDERSON, M. H. B. *The Feuars of Kirklands*. Scottish Hist. Rev., vol. lxi, pt 2, pp. 117-36.
91. SAYNOR, J. *The Parish Accounts of Shoreham, 1782-1894*. Archaeologia Cantiana, vol. lxxxvii, pp. 191-204.
92. SCHOFIELD, R. *Dimensions of Illiteracy, 1750-1850*. Explorations in Econ. History, vol. x, no. 4, pp. 437-54.
93. SCOTT, J. *Turnpike Roads in Derbyshire*. Derbys. Miscellany, vol. vi, pt 6, pp. 198-208.
94. SHEAIL, J. *Changes in the Use and Management of Farmland in England and Wales, 1915-19*. Trans. Inst. of Brit. Geographers, vol. lx, pp. 17-32.
95. SHEARD, M. R. *Methodist Tract-Visiting Societies in the Early Nineteenth Century*. Proc. Wesley Hist. Soc., vol. xxxix, pt 2, pp. 34-40.
96. SHIMWELL, D. W. *Capital Investment in the Expansion of a Jenny Workshop Industry in the Derbyshire Lead Mining Village of Bradwell, 1799-1801*. Textile History, vol. iv, pp. 94-9.
97. SMITH, T. P. *A Demolished Timber-Framed Building at Luton*. Beds. Arch. Jnl, vol. vii, pp. 73-7.
98. SPAIN, R. J. *The Loose Watermills*. Archaeologia Cantiana, vol. lxxxvii, pp. 43-80.
99. SPENCELEY, G. F. R. *The Origins of the English Pillow Lace Industry*. Agric. Hist. Rev., vol. xxi, pt 2, pp. 81-93.
100. SPENCER, W. E. *John Grayson, alias William Butterworth*. Trans. Hunter Arch. Soc., vol. x, pt 2, pp. 88-98.
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103. TAYLOR, C. C. *Cambridgeshire Earthwork Surveys*. Proc. Cambridge Antiq. Soc., vol. lxiv, pp. 35-44.
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107. WALKER, R. B. *The Growth of Wesleyan Methodism in Victorian England and Wales*. Jnl Eccles. History, vol. xxiv, no. 3, pp. 267-84.
108. WATTS, P. *Stow cum Quy Overseers Accounts, April 1720-April 1721*. Bull. Cambs. Local History Council, vol. xxviii, pp. 10-14.
109. WEBBER, R. *London's Market Gardens*. History Today, vol. xxiii, no. 12, pp. 871-78.
110. WILSON, C. *Transport as a Factor in the History of Economic Development*. Jnl European Econ. History, vol. ii, no. 2, pp. 320-37.
111. WILLIAMS, J. A. *The Distribution of Catholic Chaplaincies in the Early Eighteenth Century*. Recusant History, vol. xii, no. 1, pp. 42-8.
112. WOODWARD, D. *The Anglo-Irish Livestock Trade in the Seventeenth Century*. Irish Historical Studies, vol. xviii, no. 72, pp. 489-523.
113. WOODWARD, D. *Sources for Maritime History (III): The Port Books of England and Wales*. Maritime History, vol. iii, no. 2, pp. 147-65.

## Book Reviews

B. P. WOLFFE, *The Royal Demesne in English History: the Crown Estate in the governance of the realm from the Conquest to 1509*. Allen and Unwin, 1971. 324 pp. £5.

This is a book for constitutional historians rather than agricultural historians; Dr Wolffe is more concerned with the *concept* of "ancient or royal demesne" than with its practice. His basic thesis goes like this: that unlike France there was no practical idea of a royal demesne in early medieval England; that it arose in the later twelfth century at the earliest for legal and fiscal purposes (indeed, that the concept arose largely for purposes of taxation helps to demonstrate Dr Wolffe's contention that English government was always based largely on royal taxation rather than on a substantial royal endowment); that even so, the royal demesne was never of great significance, financially nor politically, until the fourteenth century when the estates were expanded to endow royal offspring; that the idea that "the king must live of his own" (i.e. on the yields of his own estates) arose as a political slogan in the early fifteenth century in an attempt to escape increasing and increasingly frequent taxation under kings who as heirs to both the accumulations of royal estates and the inheritance of John of Guant, duke of Lancaster, appeared to be well endowed with landed property; that no king before Edward IV was able to make any significant profits from their estates, and that even then the reliance placed on revenue from this source could not be very great, although it was handled by the new machinery of the chamber.

This is not now very new; much of it has already been printed before by Dr Wolffe in the form of articles. (Their reappearance here as chapters in a book results in some unfortunate repetitions and other infelicities.) And the picture drawn, while convincing enough, is unsatisfying. Dr Wolffe has been led by two dominant aspects of his study—the king must live "of his own" and parliamentary acts of resumption—to isolate from the whole scene of English financial administration two relatively unimportant themes. Even on the latter,

where Dr Wolffe may justly be called the expert, some doubts over his interpretation arise. May not some of these acts, for example, have been intended by the government primarily as a means of increasing rents from lands already leased out?—they certainly resulted in such action on several occasions. And may not the newer systems of chamber administration be part of a wholesale changeover from government by assignment to government by direct livery? (It may be doubted, for instance, whether the fourteenth and fifteenth century Exchequer was ever intended to handle large sums of cash.) Dr Wolffe has dealt with two minor aspects of government finance, when what is needed is a new analysis, especially of the growth of special appropriations.

There is little in this book for those concerned with the practice of farming; even at the point where the methods of fifteenth-century estate management might be thought to have spilled over into Exchequer and household practice Dr Wolffe is disappointingly thin. There are a few tantalizing glimpses of the economic results of being on the royal demesne, but hardly anything on the changing methods of estate exploitation by the succession of government officials. The book is most valuable as a contribution to the growing discussion among medieval historians on government finances as a whole. But, as so often is the case with a thesis-turned-into-book, it is not even then the most easily read book.

ALAN ROGERS

KENNETH HUDSON, *Patriotism with profit: British agricultural societies in the eighteenth and nineteenth centuries*. Hugh Evelyn, 1972. xii + 143 pp., illus. £5.25.

Founded in 1731, the Dublin Society (later the Royal Dublin Society) was the first of the agricultural societies which were established in the United Kingdom in the course of the following century or so. With the aristocracy (and where appropriate, the clergy) as patrons, these societies, usually founded at the prompt-

ing of men of exceptional enterprise and public spirit and composed almost entirely of the landed gentry, had as object the improvement of agriculture. Some were shortlived but some had a much longer period of existence while a considerable number are still functioning today. The range of activities obviously depended upon the wealth and size of the society. Their main function is seen to break down or reduce the resistance to change and in attempting to do so they used a variety of methods. Lectures were held both for members and for a wider public, transactions were published, which Kenneth Hudson suggests were not infrequently excessively technical and not capable of practical application. But the agricultural show, which requires careful planning for many months, and still continues today when some of the other activities have declined in importance, became the most important instrument of change. With the coming of the railway which made possible the movement of stock and machinery, the influence of the show greatly increased. But, as the societies continue to appreciate, the interest of the town dweller was vital to the success of the shows. Often associated with the shows, competitions were held and prizes instituted to encourage better husbandry. But the prizes awarded at shows did not always encourage the right development. The butcher wanted a lean pig to market as ham whereas the show judge favoured the fat pig. Other activities included libraries, exhibition centres, and experimental farms, which Mr Hudson argues provided "valuable experience for the new generation of scientists and experimentalists" who were employed by the societies. Stressing the importance of book-keeping, the societies provided a constant reminder that farming was a business as well as a way of life. But Mr Hudson usefully points out that the agricultural societies, while devoting considerable attention to crops, animals, and machines, paid little regard, in what was a labour-intensive industry, to the farm-workers themselves.

Like the good journalist he is, Kenneth Hudson has once again focused attention on an important but hitherto neglected subject but curiously ends his story in the late nineteenth century and does not bring it up to date.

Clearly owing its origin to an interest in his local society, the Bath and West, on whose archives he draws, Mr Hudson presents an impressionistic view of his subject within this short compass. Inevitably, therefore, in some directions Mr Hudson is forced to give an unduly condensed description of the course of events. For example, the cider research station at Long Ashton owed its establishment to dedicated propagandists like Radcliffe Cooke, pioneers like R. Neville Grenville who carried out experiments at Butleigh in Somerset, and finance from the Board of Agriculture as well as the interest of the Bath and West.

Since it would have been useful to have had some insight into the material on which this volume is based it is a pity that the bibliography lists only standard books and articles in agricultural history. And attractive as this book is, even in these inflationary days should a volume of about 150 pages be priced at £5.25?

W. E. MINCHINTON

WALTER ACHILLES, *Vermögensverhältnisse braunschweigischer Bauernhöfe im 17. und 18. Jahrhundert*. Quellen und Forschungen zur Agrargeschichte, Band XIII. Gustav Fischer Verlag, Stuttgart, 1965. vii + 117 pp. DM 24. This is a subtle and interesting attempt to calculate the long-term changes in production inputs and outputs on peasant holdings in Brunswick during the seventeenth and eighteenth centuries, concentrating particularly on the period 1660-1800. Without direct data for working out budgets, the author uses marriage contracts and inventories to analyse changes in structure over the long term.

From the inventories, which were taken whenever a deceased household head left minor dependants, Achilles works out changes in the price of land. Between 1660 and 1800 it rose six times, with two sharp periods of rise in 1721-30 and 1791-1800. Throughout the period land values kept ahead of the price-rise of grain. In the eighteenth century production of grain and fodder rose by about 20 per cent, partly as a result of planting the fallow. This in turn allowed for an increase in the number of farm animals which could be supported. Taken together, total production figures would ac-

count for only a threefold rise in land prices.

There are a number of points made in the book which need to be investigated further. During the period under consideration, no class of peasant was favoured in the land market. Work animals were more important in the inventories than those raised for meat or milk. Over the long period there was a steady switch from beef cattle to milch cows. The smaller peasants had more animals per unit of land, and one would expect from the greater amount of manure production that their yield per acre would be greater. There is, however, no data to support this.

Achilles discusses in some detail the process of inheritance, preparatory to using data from the marriage contracts on the amounts of dowries and portions to gauge the changes in productivity of farms. During the seventeenth century, there was little change except for the interruption to farming caused by the Thirty Years' War and the period of about thirty-five years necessary for recovery. In one region analysed portions rose by a factor of six during the eighteenth century, and in another closer to three. While production apparently rose to quite different levels in the two areas, the price of land rose equally sixfold in each. The rise in the value of land, then, can only be partly traced to a rise in production, and much of it must be sought in the supply and demand of land itself.

This kind of work is quite useful as more of it is made available for comparative use. More information would be valuable on the geographic setting of the region, particularly with regard to the problems of intra-regional difference in production levels. Why, for example, should the demand for land be the same in areas with different levels of production? The inventories, especially, would be useful in analysing regional variations in a manner familiar to English agricultural historians.

DAVID SABEAN

WILLIAM ALBERT, *The Turnpike Road System in England, 1663-1840*. C.U.P., 1972. 300 pp. 8 maps. £5.60.

British railway history, we have recently been told, is only just emerging from an era in

which it approximated to "playing with model trains" rather than serious academic enquiry. Dr Albert has gone a long way to raising the standard of enquiry into road transport, which itself has all too often produced little more than catalogues of prohibitive costs, "sloughs of despair," highway robbery, and naïve accounts of fluctuations in activity. For this book adds significantly to our knowledge of transport improvement.

Dr Albert mixes administrative history with matter of wider importance. Here he provides a useful, if brief, survey of current knowledge of road transport in the seventeenth century, recounts the origins of the turnpike trust system and its spread, and examines trust administration and methods of road repair. These "internal" factors, while deeply and carefully researched, are not of immediate relevance to the wider economic history of the period, although the development of the more professional administrative approach which the case of turnpikes illustrates is of great significance.

It is in the area of finance that Dr Albert is happiest, and in which he asks his broadest questions. Several new conclusions emerge from his work. Toll leasing was a valuable service for trusts, not, as the Webbs suggested, the means of their exploitation. He analyses the inducements to promotion and the sources of investment in turnpikes, stressing the role of government funds from 1817 onward, particularly in such major projects as the Holyhead road. Overall, the turnpikes tapped pools of savings in the same way as the canals and railways which, historiographically, have overshadowed them. The difference lay in their earlier start, the fact that they were not profit-makers *per se*, and that in consequence they showed a lower rate of return than the other utilities.

This book adds to our knowledge of the local money supply in the eighteenth century. Even after allowing for a lagged response to shifts in interest rates in the London money market it is clear that local factors largely determined phases of activity or inactivity in turnpiking. Ashton's analysis which suggested that shifts in interest rates determined investment in public utilities is therefore questioned.

Consequently fluctuations in the agricultural sector assume greater significance for turnpike investment.

As Gay showed, Arthur Young's comments on English roads testified as much to their improvement as their badness. Painstaking analysis here of trust formation justifies Gay's comments. The turnpiking of the thirteen main roads from London was virtually complete by the 1750's. Parallel with this, "town-centred" improvement took place from the 1720's, designed to stimulate local markets. Movements in transport costs, as evidenced in Justices' returns, showed the importance of this early improvement. Costs fell significantly in the period 1690 to 1750, and stabilized thereafter until the war. Trust formation was more systematic than has been thought, and the turnpikes themselves were powerful factors in the reduction of transport costs and the integration of the home market.

If the broad analysis of turnpike activity and interest rates was a comment on the importance of agricultural fluctuations, then the two industries were more intimately connected. To 1840, the landed interest remained the dominant investing and promoting group, and the Board of Agriculture, with the G.P.O., a leading advocate of qualitative improvement. At least part of the success of the Macadam "system" lay in its labour-intensity, and in its employment of child, female, and aged labourers, facts which made it especially appealing to the southern agricultural counties after 1815. While enclosures have been seen as important stimuli to road improvement, Dr Albert has shown this to be a two-way process. In Leicestershire, turnpikes largely preceded enclosure, not as Dr Hunt argued, the reverse. The history of the turnpike has much to interest the historian of agriculture.

This is an important book. In it there are minor slips: for example, no "West Riding County Record Office" exists. But these are few in an immensely scholarly work. But this is also a limited book. It confines itself to turnpike roads and, bar the chapter on rates of carriage, much of which has already appeared in print, says relatively little in general about transport in the eighteenth century. While rivers, coastal shipping, and canals are men-

tioned, the relative roles of road and water transport are not discussed. Turnpikes appear largely as financial enterprises and as administrative units. Their use awaits the further research that this scholarly book deserves to generate. Here is a work essential to every student of the period. But one wonders how many will accept only 197 pages of text for their money.

J. A. CHARTRES

HORST-DETLEF ILLEMAN, *Bäuerliche Besitzrechte im Bistum Hildesheim*. Quellen und Forschungen zur Agrargeschichte, Band XXII, Gustav Fischer Verlag, Stuttgart, 1969. ix+141 pp., 4 plates, 12 tables. DM 32.

The author is chiefly concerned with the legal and institutional changes affecting peasant landholders belonging to the Benedictine monastery of St Michael in the bishopric of Hildesheim. By examining the records of this rich territory he re-evaluates the theses put forward by Wittich, Sold, and Lütge for north-west Germany. In particular, he finds no systematically planned abolition of the medieval *villicatio* system as Wittich did, and argues against the idea that the system broke down under pressure from the *villici* for legal and economic independence. In any event Illemaan stresses the fact that, for St Michael's at least, the *villicatio* was never a closed uniform system. The farms belonging to the monastery were strewn out over a wide area making it difficult to run a large manor farm on labour from the surrounding tenants. In fact various forms of tenancy existed side by side. Part of the possessions of the monastery were in the newly cleared areas of southern Lower Saxony where the old forms of unfree tenancy were never established.

The changeover came here, as elsewhere, during the fourteenth and fifteenth centuries. The central administrative farms lost their functions as matters previously dealt with by them were centralized. The *Meierhof* was split off from the *Lathufen*, the latter forming a newly created *Gorichtsverband* with the old obligations stemming from their unfree status gradually becoming real charges on farm tenures. There were a number of legal differences between the *Meier* and the newly

constituted *Meierdingsleute*. The former paid dues in kind, and held tenures for periods of six to nine years. The latter had inheritable tenures and paid in money. In reality, however, the *Meier* achieved *de facto* inheritance, and there was little to distinguish the two. It was in fact uncommon for a peasant not to hold land under the two forms of legal obligation.

In this book Illemann is almost totally concerned with legal forms. Socio-economic material enters only at times when an explanation for a great change in institutional structure is called for. The now standard descriptions of the later medieval period by Abel and Lütge become the means for reinterpreting the older works by men like Wittich. What the society behind the legal forms was like can only be imagined by the reader.

DAVID SABEAN

C. R. ELINGTON and N. M. HERBERT, (eds.), *Victoria History of the County of Gloucester*, Vol. x. O.U.P., 1972, xxiv + 324 pp., illus. £14.

This, the third topographical volume of the Gloucestershire series, covers twenty-two parishes, of which sixteen lie in the hundred of Whitstone on the east bank of the Severn, and six on the opposite bank in the hundred of Westbury. The fact that the last-named, and all the other hundreds on that side of the Severn, belonged to Herefordshire, not Gloucestershire, until the reign of Cnut, is not mentioned. Nor is King Eadwig's grant of Westbury itself to Ælfhere, ealdorman of Mercia, who later passed the gift on to Glastonbury Abbey. It is at any rate good to know that the beautiful Dutch-inspired water-garden at Westbury Court is now looked after by the National Trust.

The small town of Newnham acquired the status of a borough in the twelfth century, and later possessed a mayor, but its burghal history is one of long decline, and nothing remains to show for it but a sword of state now in the museum at Gloucester.

On the other side of the river King's Stanley became a fairly successful seignorial borough circa 1253, but an attempt by Robert FitzPain to establish one at Frampton-on-Severn proved abortive. Apart from these two quasi-urban

ventures, Whitstone hundred consisted mainly of agricultural land, though the Stroud Valley clothing industry extended into the eastern parishes which climbed the Cotswold scarp.

So far as can be seen, the two-field system remained the norm in Gloucestershire villages until the late thirteenth or early fourteenth century, when some of them, but by no means all, graduated into a three-field rotation. The vale of Gloucester has long been famous for producing one of the finest English cheeses, but no coherent account of the manufacture can be pieced together from the scattered references that are all we find here. (How did a cheese-factor at Frocester manage to go bankrupt in 1800?) The Butter Beech, a tree at Standish under which milkmaids used to sell their dairy produce, might have rated a passing mention. Perhaps the subject is reserved for fuller treatment under the hundred of Berkeley.

Among the numerous well-chosen plates those of two splendid cloth-mills in the Stroud Valley are outstanding.

H. P. R. FINBERG

ALICE M. HADFIELD, *The Chartist Land Company*. David & Charles, Newton Abbot, 1970. 248 pp. £3 hardback, £1.50 paperback.

Mrs Hadfield's book is the most detailed study of Feargus O'Connor's scheme of 1845-51 since the publication of the six reports of the Select Committee of 1847-8 on the affairs of the National Land Company. The author has visited, to great profit, the sites of all six of the estates purchased or planned to be purchased in order to identify surviving cottages and communal buildings, and has unearthed a certain amount of fresh manuscript material in various depositories. The illustrations will be of great value to students of rural vernacular architecture. Basically the scheme was a lottery with smallholdings as prizes, and one critic estimated that it would take about fifty years to settle all the subscribers, even if the scheme had been efficiently managed. Naturally, Chartist sympathizers and others with a little money to spare (largely from the booming industrial towns of the north and Midlands) liked a flutter just as much as the British worker does today, and hoped to

"come up" on the Land Scheme. With his background as an encumbered Irish landlord O'Connor must have enjoyed himself hugely bargaining for likely English estates (even if they were not always highly desirable properties), putting down deposits on them in his own name with other people's money, and parcelling them out into spade-cultivation smallholdings in an effort to imitate in England "the finest peasantry in the world" (Carlyle's phrase), which he had known in the land of his birth. But according to the Government accountant the accounts of the National Land Company were sadly "confused," and although in 1848 John Stuart Mill thought the settlements were "well conceived," in the end they became a series of abortions, not well-rounded communities. What was the Company's solicitor, W. P. Roberts, the "Miner's Attorney General" so beloved of the Webbs, up to in allowing this state of affairs to develop? Mrs Hadfield is to be congratulated on producing a well-documented study, compassionate without being uncritical, and on having broken the Marxist near-monopoly of this subject. This is "Chartism with a human face."

W. H. CHALONER

J. Z. TITOW, *Winchester Yields: A Study in Medieval Agricultural Productivity*. C.U.P., 1972. viii+151 pp. £3.

Dr Titow has worked for many years on the account rolls of the bishopric of Winchester, which form the longest and most continuous series in Europe of documentary material for the study of medieval agriculture. This latest publication takes the form of an essay of 33 pages supported by more than 100 pages of statistical tables. These calculations replace the rather inconclusive data compiled from the same sources by Beveridge, who used hundreds of figures drawn from a limited number of manors. Titow's statistics, covering only the period 1209 to 1349, derive from thousands of yield calculations for the whole Winchester estate.

The conclusions that emerge from the mammoth exercise are that on most of the Winchester manors cereal yields deteriorated in the late thirteenth century, with a tendency for yields to improve slightly in the early

fourteenth century though often the yields of 1300-49 were still below the figures for 1209-70. The general trend towards declining productivity was much more marked in the case of oats and barley than in wheat. At first sight the decline seems slight in many examples, often less than 10 per cent, but as the area sown with cereal crops shrank after the mid-thirteenth century, it is assumed that the estate shed its least fertile land, so that the figures we have to some extent conceal a much more dramatic decline in productivity.

The statistics and conclusions drawn from them are very useful, but Dr Titow is whetting our appetites for more. We learn that the number of stock kept on the estate increased in the early fourteenth century, helping to prevent a continued decline in yields after 1300, and that often the "colonizing" manors tended to suffer from declining productivity more than old-settled parts of the estate. But we really need to know more about the techniques and organization of agriculture on the Winchester manors. Why, for example, were changes in crop rotation rare? Why were leguminous crops so unimportant? How market-oriented was the estate? (Presumably this factor helps to explain the maintenance of better productivity of wheat as compared with the productivity of lower-priced crops in the early fourteenth century.) It would also be valuable to see a concrete example, if only for a single manor, demonstrating how the landlord was able to shed poorer land when the demesnes contracted after the 1270's.

This book represents a milestone in the compilation of statistical material for the agricultural history of the Middle Ages. Fortunately Dr Titow promises a larger study of the Winchester estate, and when this appears it will be possible to see these yield statistics in the full context of the geographical and economic background.

CHRISTOPHER DYER

DARWIN P. KELSEY (ed.), *Farming in the New Nation: Interpreting American Agriculture 1790-1840*. The Agricultural History Society, Washington, 1972. ii+293 pp. \$5. The American Agricultural History Society follows the useful practice of publishing the

papers given at occasional symposia in book form for the convenience of libraries and a wider audience. This volume, a reprint of *Agricultural History*, vol. 46, no. 1, records the proceedings of a meeting held at Old Sturbridge Village, Massachusetts, site of a living historical farm, in September 1970, jointly sponsored by the Society, Old Sturbridge Village, the Smithsonian Institution, and the U.S. Department of Agriculture.

The contributors include some of the most eminent names in the field, such as Clarence Danhof, Paul Gates, and Wayne Rasmussen, as well as distinguished economic historians like Stuart Bruchey, Robert E. Gallman, and William N. Parker. The subject was American Agriculture in the period 1790-1840, and the greater part of the discussion was concerned with sources old and new, beginning with reassessments of the work of Bidwell and Falconer, and Lewis C. Gray, together with an impressive survey by Paul Gates of the problems of agricultural history that remain for new writers to consider. Professors Bruchey and Gallman examined the problems of assessing productivity changes and marketing efficiency, while W. Ralph Singleton and Clarence Danhof contributed accounts of the origins of the plants and of the tools used by the American farmer in this period.

A further area of discussion, on the uses for agricultural historians of museums and historical farms, was opened by John T. Schlebecker and Darwin P. Kelsey. Chester McArthur Destler contributed an interesting paper on Jeremiah Wadsworth, an example of the improving gentleman farmer who combined a literary interest in the new farming of Europe with practical attempts to improve field crops and animal breeding in New England—he tried to obtain chicory seed from Arthur Young; while some geographical aspects of the agricultural practices of this period were considered in papers by Andrew H. Clark and William N. Parker.

It is, as might be expected from so varied and distinguished a group of scholars, a volume rich in ideas and full of stimulating suggestions. For the reader interested in the serious

study of the American farmer in this important and formative period the discussion of references and sources is invaluable, and this volume must be added to the select list of essential reading on the subject.

G. E. MINGAY

WERNER TORNOW, *Chronik der Agrarpolitik und Agrarwirtschaft des Deutschen Reiches von 1933-1945*. Berichte über Landwirtschaft, Neue Folge, Sonderheft 188. Paul Parey, Hamburg und Berlin, 1972. 193 pp. DM 44.9.

This volume lists the political measures and policies dealing with agriculture, fisheries, forestry, and agricultural research adopted in Germany between 1933 and 1945. It closes a gap as publications exist covering the periods 1914-33 and 1945-67. It is interspersed with a number of brief commentaries, which are concise, even excessively short, and the lists of measures, while comprehensive, are particularly laconic. Nevertheless the book outlines what was done for and to German agriculture in 1933-45. The National Socialists reacted to the world economic crisis as did many other states, controlling imports, creating marketing organizations, and keeping the peasant from bankruptcy. Because the National Socialists believed in autarchy they perhaps carried these measures further than most other countries. The National Socialists had a mystique; the whole farming population was made an estate of the realm, and there were regulations about security of ownership and inheritance. The Four Year Plan, beginning, in 1936, brought the nation much nearer to self-sufficiency, with a reserve of grain in 1939. Four hundred thousand left the land between 1933 and 1938, entering industry or the forces. The food grown in captured countries was used mainly to feed the German invading armies. Lack of labour, nitrogenous fertilizers, machine parts, and pesticides finally reduced production. In short the volume compendiously lists the measures taken, and its short but often repetitive commentaries outline their force and purpose.

D. J. DAVIS

## Professor H. P. R. Finberg

THE British Agricultural History Society has lost a much respected editor and loyal friend with the death of Professor H. P. R. Finberg on 1 November 1974. In the early days of the Society's foundation in 1953 Professor Finberg gave it his warm support, and as soon as the officers of the society were elected, he was invited to become the first editor of the AGRICULTURAL HISTORY REVIEW. Professor Finberg had been a publisher before he took up his academic appointment as Head of the Department of English Local History at Leicester University; he also had a high national reputation as a typographer. To have so distinguished an expert in the field of publishing and history was a singular good fortune for the Society, and the design of the REVIEW bears the imprint of his high standards. Professor Finberg remained as editor until his retirement in 1965 but he continued thereafter on the Executive Committee of the society, and for its members their last sight of him was at the meeting on 26 September when they little suspected that his death was so near.

Professor Finberg's historical writing was centred upon agricultural and rural history and he was a recognised master of the art of unravelling Anglo-Saxon charter boundaries on the ground. But more than this, he was a master at deciphering their deeper meaning. Among his most celebrated writings was his essay on *Roman and Saxon Withington*; it was the study of a single parish, but it gave a new

turn to the debate on the Roman legacy in rural England and the continuity of rural settlement into the Anglo-Saxon period.

In 1970 the Society published a special Supplement to its REVIEW (volume 18) entitled *Land, Church, and People* in honour of their former editor. A glance through the bibliography of Professor Finberg's work, included in that volume, demonstrates the depth and breadth of his agrarian interests. Even after his retirement he continued actively with his writing. Professor Finberg had been responsible for launching the idea and laying the plan for the *Agrarian History of England and Wales*, and until his death he was its devoted and meticulous editor. He had the satisfaction of seeing volume IV, 1500-1640, published in 1967, and in his retirement he succeeded in completing his own writing for this work which appeared as volume I, part ii, *A.D. 43-1042*, in 1973. Finally, this summer, Professor Finberg's volume in the Paladin series, *The Formation of England, 550-1042*, appeared, written in the same compelling prose and in the polished style that one always associated with him.

Professor Finberg was a man of many parts but we are especially grateful for his contribution to Anglo-Saxon agrarian history and for his services to the British Agricultural History Society which were unique.

JOAN THIRSK

### *Back Issues of the Review*

The following back issues of the Agricultural History Review are out of print: Vol. 2; Vol. 3, part 2; Vol. 4, part 1; Vol. 5, part 1; Vol. 10, parts 1 and 2; Vol. 11, parts 1 and 2; Vol. 12, parts 1 and 2; Vol. 13, parts 1 and 2; Vol. 14, part 1; Vol. 17, part 1.

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Source Investigation Projects

The SSRC Economic and Social History Committee is interested in sponsoring small-scale research projects (normally involving a few months' work by a single researcher) into classes of public records the contents of which are not yet described in detail. Payment will be in the form of an SSRC consultancy, framed in terms of the number of working days put in, thereby allowing maximum flexibility.

The object of this scheme is to make generally available a systematic indication of the various types of material—or alternatively, information about the distribution of a particular category of data—in classes of records generally considered too complex or voluminous to warrant a time-consuming search by those interested in something specific. It is hoped that such projects—under the supervision of historians already familiar with the records or the relevant topic—will produce facilities of use to researchers in general, avoiding the duplication of effort and the intensive searching and listing of records by individuals. The principal examples of classes which lend themselves to such a search are legal records, often identified solely by the name of litigants or listed in categories which do not necessarily relate to the pattern of their use to or by historians; but there are no doubt other classes where a detailed listing would provide a most useful facility as well. It should be stressed that the intention is not to emulate official calendars, lists and indexes, but to direct resources to documentary classes where more modest explorations of unworked material would assess the potential usefulness of a class.

The SSRC has recently agreed to finance two such projects—one for five months, the other for up to one year. Both involve material in the Public Record Office. The first is an investigation of Exchequer Bills and Answers (E 112) for the late seventeenth and early eighteenth centuries. These appear to contain much valuable information on the character and organisation of domestic trade, wartime shipping, privateering, etc. The expected result will be a listing and summary of items of general economic and social interest. The second project relates to seventeenth-century Decree Rolls in the Court of Chancery (in series C.78), which are not indexed by subject-matter or geographical area. Among many other types of data, these contain records of private enclosure agreements. The bulky character of the rolls has so far prevented historians making systematic use of them to identify enclosures relating to particular areas, while there is no information on the total number, chronology or distribution of enclosure agreements. The object of the project will be to produce a check list of enclosure agreements, together with any other information which can be conveniently compiled, for use by economic historians.

Economic and social historians who feel that similar work, of general use, might be undertaken with respect to classes of public records in the Public Record Office, the Scottish Record Office or any other repository are asked to contact the Secretary of the Committee, Social Science Research Council, State House, High Holborn, London WC1R 4TH.

*Forthcoming publication*

# Ransomes of Ipswich

*A history of the firm and a guide to the records*

by D. R. GRACE and D. C. PHILIPPS

To be published by the Institute of Agricultural History in February 1975  
at £2.25 (plus 25p postage and packing).

Copies may be obtained from the Institute of Agricultural History,  
The University of Reading, Whiteknights, Reading RG6 2AG.

## THE BRITISH AGRICULTURAL HISTORY SOCIETY

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In order to overcome the difficulties and delays which have beset the Society's finances in these inflationary times by having the amount of the annual subscription specified in the Constitution, and which has involved the cumbersome procedure of a Constitutional amendment each time it has been necessary to alter the subscription, the Executive Committee propose to move the following amendment at the next Annual General Meeting:

That section 4 should be amended to read:

'There shall be an annual subscription due on 1st February. The amount of the subscription shall be determined by the Executive Committee'.

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## The Agricultural History Review

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RUTHERFORD COLLEGE, UNIVERSITY OF KENT  
CANTERBURY, KENT

The Review is published twice yearly by The British Agricultural History Society and issued to all members. Single copies may be purchased from the Treasurer for £2.00. Back numbers to Vol. 20 (1972) are £1.50 per issue, except for the Supplement to Vol. 18 (1970), *Land, Church, and People*, which is £2.00. Articles and letters offered for publication should be sent to 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.

# *The* AGRICULTURAL HISTORY REVIEW



VOLUME 23 1975

PART II

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E. J. T. COLLINS

A Nineteenth-Century Estate Sale: Wetherby 1824  
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The Investment Behaviour of Irish Landlords 1850-75:  
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PUBLISHED BY  
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# Dietary Change and Cereal Consumption in Britain in the Nineteenth Century

By E. J. T. COLLINS

"Do not the people in the North of England, Scotland and Wales live even now upon oaten cakes?"

"Yes, and from habit prefer them to bread made of wheat."—*Mangal's Questions*, 1850

ONE of the major gaps in nineteenth-century British agricultural history is the lack, prior to the agricultural census of 1866, of a satisfactory index of national cereal production. So imperfect were the data on crop yields and area that many contemporaries sensibly preferred the consumption formula, consumption plus seed minus imports, as the better means for calculating output. As the lesser of the evils, it had the advantages of reasonably accurate statistics of horse and human populations, of imports and exports, and of grains used in malting and distilling. It was, however, less suitable for the coarser grains, barley and oats, of which large quantities were fed to livestock, whose numbers and dietaries were more fluctuating and less easily ascertainable than those of human beings. But even for wheat, which was given almost entirely to human consumption, there was an enormous potential for error. Contemporary estimates of wheat consumption per head were at best notional (being seldom based on first-hand knowledge or systematic inquiry), and ranged from between 6 and 8 bushels per annum.<sup>1</sup> As for the other variable, that of numbers of wheat consumers, it is by no means certain what proportion of the population of England and Wales, and of Great Britain overall, used that grain regularly and exclusively.

The conventional wisdom, which has not so far been seriously challenged, is that in 1800 more or less the entire population of England and Wales subsisted on wheat: Ashley, for example, put the fraction at 95 per cent, and Fussell at 90 per cent.<sup>2</sup> Hobsbawm, too, believed that the major change from brown bread to white had already taken place by 1800,<sup>3</sup> while Salaman, conceding that the transition was not yet complete, saw the residue as "not very great or rather it was soon wiped out."<sup>4</sup> On the other hand, little or no detailed work has been done on cereal-eating in

<sup>1</sup> For a general survey and discussion of contemporary estimates see G. E. Fussell, 'Population and Wheat Production in the Eighteenth Century', *History Teachers' Miscellany*, vii, 1929, pp. 66-7, 108-11; and S. Fairlie, 'The Corn Laws and British Wheat Production, 1829-76', *Econ. Hist. Rev.*, 2nd ser., xxii, 1969, pp. 109-16.

<sup>2</sup> Sir W. Ashley, *The Bread of our Forefathers*, Oxford, 1928, p. 8; Fussell, *loc. cit.*, p. 87. Fussell's datum was also utilized by P. Deane and W. A. Cole, *British Economic Growth, 1688-1959*, Cambridge, 2nd edn, 1967, pp. 62 ff.

<sup>3</sup> E. J. Hobsbawm, 'The British Standard of Living, 1790-1850', in E. J. Hobsbawm (ed.), *Labouring Men*, 1968 edn, p. 85.

<sup>4</sup> R. N. Salaman, *The History and Social Influence of the Potato*, Cambridge, 1949, pp. 614-17; J. Percival, on the other hand, believed the changeover complete about 1825-30 "or earlier."—*Wheat in Great Britain*, 2nd edn, 1948, p. 23.

Scotland and Ireland, which are assumed to have subsisted on oatmeal and potatoes until late in the nineteenth century, it being asserted recently that wheat consumption there was still "probably negligible" in 1870.<sup>1</sup>

The purpose of this paper is to reopen the historical debate, which flickered briefly during the 1920's, concerning the composition of the national loaf. It will argue that in 1800 a still very substantial proportion of the population of England and Wales, and almost a majority of the population of Great Britain, lived on the "lesser-grains", barley, oats, pulse, and rye; and that a uniform national pattern of cereal-eating became a reality only in the present century. It will contend also that in 1800, and for some time after, the cross-price-income elasticity of demand for cereals was positive, and that in many households not just the quantity but also choice of cereal fluctuated with income and relative prices.

## I

A convenient starting-point for our inquiry is the mid-seventeenth century when not wheat but barley, rye, oats, beans, and peas, or mixtures of grains such as maslin (wheat and rye) or muncorn (barley and oats) were the predominant cereals, even in the lowlands.<sup>2</sup> During Tudor and early Stuart times the wheat-eating fraction may have declined as Malthusian pressures forced many of the labouring poor into cheaper staples.<sup>3</sup> Gregory King's estimate of cereal production suggests that wheat was still very much a minority cereal in England and Wales in the late seventeenth century.<sup>4</sup> There is little to support either Thorold Rogers's assertion that "wheat was the customary food of the English people," or Fussell's claim that in 1700 it was already the staple grain of 80 per cent of the population.<sup>5</sup> That the wheat-eating habit rapidly gained ground after 1650 is indisputable—Tooke suggests that "the resort to a higher diet" occurred mainly during the low-price years, 1715–65<sup>6</sup>—but the most authoritative eighteenth-century work on the subject, that of the Essex miller, Charles Smith, writing in the early 1760's, concluded: "bread made of wheat is become much more generally the food of the common

<sup>1</sup> Fairlie, *loc. cit.*, p. 102n.

<sup>2</sup> A. Everitt, 'Farm Labourers', in J. Thirsk (ed.), *Agrarian History of England and Wales*, IV, Cambridge, 1967, pp. 450–1. Wheat, it was concluded, was the predominant cereal only in Middlesex, Hertfordshire, marshland Lincolnshire, Holderness, Vale of Taunton, and the Kent downs. For other evidence see Ashley, *op. cit.*, chs II–III.

<sup>3</sup> E.g. in Cornwall, where Richard Carew, writing in the early seventeenth century, related how "Barley is grown into great use of late years . . . and of this in the dear seasons past the poor found happy benefit . . . whereas otherwise the scarcity of wheat fell out so great that these must have made many hungry mouths, and those outright have starved."—*Survey of Cornwall*, 1769 edn, cited. A. L. Rowse, *Tudor Cornwall*, 1941, p. 40. There is the hint of a similar trend in parts of Leicestershire, Worcestershire, and Lincolnshire.—J. A. Yelling, 'Changes in Crop Production in East Worcestershire 1540–1867', *Agric. Hist. Rev.*, XXI, 1973, pp. 20 ff.; J. Thirsk, *English Peasant Farming*, 1957, chs. 1–8, *passim*.

<sup>4</sup> Ashley, *op. cit.*, p. 8. King suggested a wheat output of 10 million bushels compared with 8 million bushels for rye. Ashley calculated that of the total supply of bread corn, wheat made up 38 per cent, rye 27 per cent, barley 19 per cent, and oats 16 per cent.—*Ibid.*, p. 8.

<sup>5</sup> Fussell, *loc. cit.*, pp. 86–7; A. G. L. Rogers, 'Was Rye Ever the Ordinary Food of the English?', *Econ. Jnl.*, XXXII, 1922, pp. 119–24.

<sup>6</sup> W. Ashley, 'The Place of Rye in the History of English Food' *Econ. Jnl.*, XXXI, 1921, p. 21. For other eighteenth-century evidence, see Ashley, *Bread of our Forefathers*, ch. 1, and Fussell, *loc. cit.*

people since 1689, but it is still very far from being the food of the people in general."<sup>1</sup>

Smith calculated that 62·5 per cent of the population of England and Wales subsisted on wheat compared with 14·8 per cent on rye, 12·3 per cent on barley, and 10·4 per cent on oats. Wheat ranked as the predominant cereal, consumed in 90 per cent of households, in southern and eastern England, whereas north of the Trent, and in Wales, the proportion varied from 11 to 32 per cent. Less contentious, perhaps, was the switch from brown (wholemeal) to white (sifted) wheaten flour, which, according to Fay, had affected most areas of England by 1800, the "fashion" having originated in London in the seventeenth century and reached the larger provincial towns by 1750.<sup>2</sup>

The question is, how far had the wheat-eating revolution progressed by 1800? Admittedly, 1800 was itself an untypical year, when the normal pattern of consumption was distorted by grain shortages and high prices.<sup>3</sup> But, even if 1800 is taken to mean broadly the whole Napoleonic War period, 1793–1815, it is still difficult to conceive of a "normal" consumption when in nine of the twenty-two years the harvest was deficient and many households were obliged either to reduce consumption or to resort to substitutes.<sup>4</sup>

Even so, the evidence, which is considerable, suggests that the wheat-eating fraction was then "normally" very much lower than has been conventionally assumed, and was unlikely to have exceeded 70 per cent in England and Wales and 60 per cent in Britain overall.

In 1800 wheat was regularly consumed only in that part of the Kingdom lying roughly south and east of the line, Hull–Shrewsbury–Cardiff–Taunton, and there is reason to suspect that even here it was not yet everywhere the exclusive bread corn. Such was the extent to which "wheat substitutes," especially barley, were employed in 1796 and 1800 that it is difficult to believe that some part of the population did not subsist, at least partially, on other grains, not just in difficult times but normally. Such was inferred by the vicar of Wilton, Wiltshire, who reported in 1796 that in the towns barley was a *substitute of wheat*; but that in the villages a great deal more barley was *eaten* than wheat.<sup>5</sup> Around Leicester barley had "always been a principal ingredient in the Bread of the Labouring poor residing in villages," as against the towns where "white bread" was mostly used.<sup>6</sup> Elsewhere in the east Midlands barley was similarly a common resort of the poor; in Peter-

<sup>1</sup> Charles Smith, *Tracts on the Corn Trade and Corn Laws* (1764), cited, together with accompanying map by Ashley (*Bread of our Forefathers*, pp. 4–8, 24–5), from the new edition of 1804. Smith was concerned only with England and Wales. In Scotland wheat was rarely if ever used "except as a dainty." H. G. Graham found no mention of wheat in use between 1680 and 1730 except among the wealthy.—*The Social Life of Scotland in the Eighteenth Century*, 1928, pp. 9–10. Here, as remarked by Johnson, oats which in England was "food for horses," was in Scotland "food for men". In Ireland in the late seventeenth century oatmeal and barley bread was commonest fare, and wheat a delicacy.—A. Lucas, 'Irish Food before the Potato', *Givern*, III, pt 2, 1960, pp. 8–14.

<sup>2</sup> C. R. Fay, 'The Miller and the Baker: a Note on Commercial Transaction 1770–1837', *Camb. Hist. Jnl.*, I, 1923–5, p. 89. Fay probably exaggerated the extent of the switch in the eighteenth century because high-bran wheats were still common in some areas in 1800 and in some country districts in the 1820's.

<sup>3</sup> In 1800 the price of wheat averaged over 110s. per quarter compared with less than 55s. in 1790–9.

<sup>4</sup> The high-price years, indicative of bad harvests, were: 1795, 1796, 1800, 1801, 1805, 1809–13.

<sup>5</sup> P.R.O., PC 1/33/A87–8. <sup>6</sup> P.R.O., H.O. 41/54.

borough it had "long been used" by them; in the Louth area of Lincolnshire it was the "general substitute" of farm labourers "not only this year [1800] but always"; while in Rutland barley bread was introduced into one workhouse on the grounds that its use was "customary" in the county.<sup>1</sup> Retrospective and other testimony from the 1830's and 1840's leaves little doubt that in country areas barley may often have supplemented wheat in the poorer households. One wonders, indeed, just how many of those Nottinghamshire labourers, alleged by Arthur Young to have lost their "rye teeth," had yet properly acquired the taste for wheat.<sup>2</sup>

In most other areas of Britain wheat was not only a much less important but also, very often, an insignificant item of dietary, so little used as to be regarded as a rarity. The pattern of cereal consumption in the non-wheat-eating areas was, however, extremely complex, and for want of more detailed local evidence difficult to plot. As a first generalization it can be said of the coarser grains that rye was used mainly in Yorkshire and north-eastern England, oats north of the line Liverpool to Filey Bay and in upland Wales, peas and beans in the Scottish border counties, and barley, the most ubiquitous cereal, in Wales and the Welsh border counties, the east Midlands, and south-western England.

We begin our regional survey in south-western England, where wheat predominated in the larger towns and among the higher income groups, while barley, as before, was the common food of the "more laborious classes," including farm workers and the smaller farmers.<sup>3</sup> It was estimated that in 1795 wheat comprised less than 45 per cent, and barley over 55 per cent, of total cereal consumption in the peninsular counties.<sup>4</sup>

In Wales generally the pre-eminence of barley and oats was never seriously challenged. The Board of Agriculture reporter, Walter Davies, writing towards the end of the war, described the position in the Principality broadly thus. In the south of the country wheat was usual only in the Vale of Glamorgan, though in its higher and less cultivated parts muncorn (wheat and barley), or barley alone, were the common grains.<sup>5</sup> Elsewhere, barley meal was the chief *dimentium peasantis*, with oats in the mountain areas, some *sipris* (barley and oats) in the hill districts of the south-west, and in Cardiganshire a little rye.<sup>6</sup> In Pembrokeshire even "substantial farmers" lived on barley and oaten bread.<sup>7</sup> The Gower peninsula sold its wheat at Swansea market, and subsisted on barley meal.<sup>8</sup> In north Wales wheat-eating was, if anything, more exceptional than in the south. It was more common in the low-land parts of the Marcher counties and the Vale of Clwyd, but elsewhere was

<sup>1</sup> P.R.O., PC 1/33/87-8; H.O. 42/54; Fussell, *loc. cit.*, p. 68.

<sup>2</sup> *Annals of Agriculture*, xxv, 1796, pp. 580-1.

<sup>3</sup> C. Vancouver, *General View . . . Devon*, 1808, p. 149; G. B. Worgan, *General View . . . Cornwall*, 1811, pp. 65, 160; *Annals of Agriculture*, xxiv, 1795, p. 238; Ashley, *Bread of our Forefathers*, p. 23. Throughout this survey, for all areas of England and Wales much use has also been made of the 1796 and 1800 government inquiries: P.R.O., PC 1/33/A87-8; H.O. 42/54.

<sup>4</sup> *Annals of Agriculture*, xxv, 1796, p. 511 ff.

<sup>5</sup> W. Davies, *General View . . . South Wales*, 1815, II, pp. 291-2.      <sup>6</sup> *Ibid.*, pp. 291-2.

<sup>7</sup> *Annals of Agriculture*, xxiv, 1795, p. 262.

<sup>8</sup> H. C. K. Henderson, 'Agriculture in England and Wales in 1801,' *Geog. Jnl.*, cxviii, 1952, p. 342.

almost entirely eclipsed by the spring corns, being confined to "genteel families, towns and inns upon the post roads." Anglesey ate mainly barley, and Merioneth and Caernarvon oatmeal, and sometimes rye.<sup>1</sup>

In the English Midlands, the transitional zone between the two major cereal-eating divisions of the Kingdom, the pattern is confused. In the east Midlands, as already noted, barley enjoyed a measure of popularity in some country districts—around Leicester, on the Wolds, and probably too in north Nottinghamshire. In Herefordshire "other grains" must have featured in the Welsh border parts, but surprisingly, it was reported in 1796 that in the Hereford area the lower classes were eating the unaccustomed mixture of wheat and barley, where "in the better times" they had afforded wheat and rye.<sup>2</sup> Shropshire, if only because of its closer contingency to the barley-and-oat-eating districts of Cheshire, Montgomery, and north Staffordshire, would have owned a lower wheat fraction than neighbouring counties to the south and east, but here, too, wheat was probably the majority cereal.<sup>3</sup> In Staffordshire the south and centre fed mainly on wheat while the north and Potteries relied mainly on oats.<sup>4</sup> Derbyshire exhibited a similar, if less clear-cut, north-south dichotomy with wheaten bread the rule in Derby, Chesterfield, and most eastern parts, and "oat-cake" or "haver-cake" the usual alternatives elsewhere, especially in the Peak and among the "poorer inhabitants". In Dovedale, for example, as late as 1819, a white loaf was still a rare commodity; "oatcake was the chief food from day to day with black bread occasionally," while even gooseberry pie—the harvest treat—was made with an oatmeal crust.<sup>5</sup> Cheshire ate almost entirely barley, except towards Merseyside and in the south where wheat was more generally employed,<sup>6</sup> and in the north-west, towards Macclesfield, where oatbread came more into its own.

In the northern counties the different cereals, wheat, rye, barley, oats, peas, and beans, sometimes all competed with each other for pride of place in local dietaries. Eden and Roeder list a bewildering complexity of grain mixes and methods of food preparation, of double and triple combinations of meals and flours, of "crowdies," "flummerys," "riddle breads," "jannocks," "bannocks," "hasty puddings," "thar-cakes," and "clap-breads," to name but a few of the many dishes produced by the ovens and backstones of north-country kitchens.<sup>7</sup>

<sup>1</sup> Walter Davies, *General View . . . North Wales*, 1810, pp. 170, 357. For other Welsh comments see D. Thomas, *Agriculture in Wales during the Napoleonic Wars*, Cardiff, 1963, p. 46; *Farmers Magazine*, 1801, p. 235.

<sup>2</sup> P.R.O., H.O. 42/53.

<sup>3</sup> According to the 1796 and 1800 inquiries wheat was the rule in Ludlow, Bridgnorth, and Shrewsbury itself, but substitutes more common to the north and west.

<sup>4</sup> W. Pitt, *General View . . . Stafford*, 1813, p. 226.

<sup>5</sup> F. M. Eden, *State of the Poor*, Rogers edn, 1928, pp. 168, 171; W. Farey, *General View . . . Derbyshire*, 1813-17, II, pp. 129-30, III, p. 624.

<sup>6</sup> H. Holland, *General View . . . Cheshire*, 1808, pp. 299, 315. The 1796 and 1800 inquiries are quite emphatic about the secondary importance of wheat in the county, even during normal times.

<sup>7</sup> For flour mixes and cereal dishes in the north see C. Roeder, 'Notes on Food and Drink in Lancashire and Other Northern Counties', *Trans. Lancs. & Cheshire Arch. Soc.*, xx, 1902, pp. 44 ff.; A. Edlin, *A Treatise on the Art of Bread Making*, 1805, *passim*; F. Atkinson, 'Oatbread of Northern England', *Gwerin*, III, no. 2, 1960, pp. 44-55; Eden, *op. cit.*, pp. 103-4; and A. Young, *Northern Tour*, 1770, *passim*. For Irish "breads" see C. O'Danachair, *Ulster Folklife*, IV, 1958, pp. 29-32.

In Lancashire, except in the south and around Liverpool and Manchester, wheat was little used. Indeed, it was claimed in 1796 that "more wheat is consumed in the manufacturing of cotton and muslin . . . than is used as food for the inhabitants."<sup>1</sup> Even in Manchester, where wheat-eating was by all accounts well established, the town guide for 1804 noted vast quantities of oatmeal on sale there at the Saturday market, such as would be "a matter of astonishment to persons from the southern counties."<sup>2</sup> Overwhelmingly, oatmeal was the chief support of the "great body of the more laborious classes," whose normal diet comprised oatmeal porridge and milk with an oaten bitter-cake or piece of cheese and oat-cake for breakfast and supper, and oat-cake at dinner and, where taken, afternoon tea.<sup>3</sup> Moreover, the oat ruled not just the countryside but also the majority of manufacturing towns.<sup>4</sup> At Rochdale, for example, 90 per cent of the population subsisted on oaten bread, as also did all "middle and lower ranks" at Bury, Blackburn, Wigan, and Clitheroe.<sup>5</sup> Indicatively in 1806-8, Lancaster imported only 3,225 quarters of wheat compared with 16,478 quarters of oats.<sup>6</sup> As in Lancashire so also in the West Riding of Yorkshire, where outside a few towns, such as Leeds and Sheffield, oatmeal was "the favourite food," and wheat a semi-luxury, brought out on "particular occasions."<sup>7</sup> The East Riding was exceptional in that it was the only large area north of the Trent where wheat may have been the predominant cereal. In 1812 Strickland recalled the old days, probably before 1770, when rye and maslin bread were universal in Howdenshire, Ouse, and Derwent, barley-and-pea bread on the Wolds, and barley-and-bean bread on the clays, all of which, he claimed, were now gone entirely out of fashion, except among the "very poor"—who comprised perhaps 25 per cent of the population of the Riding.<sup>8</sup> In the North Riding, on the other hand, and probably, too, in adjacent parts of the East Riding, wheat was a much rarer commodity: "families of every rank" in the countryside were said to rely on maslin, and in the Pennine districts, on oats.<sup>9</sup>

<sup>1</sup> P.R.O., H.O. 42/54.

<sup>2</sup> Roeder, *loc. cit.*, pp. 82-3.

<sup>3</sup> *Ibid.*, pp. 90-1.

<sup>4</sup> R. W. Dickson, *General View . . . Lancashire*, 1815, pp. 317, 325, 333, 627; Eden, *op. cit.*, p. 215.

<sup>5</sup> P.R.O., PC 1/33/87-8; P.R.O. H.O. 42/54. Preston normally used c. 60 per cent oatmeal, otherwise wheat and barley, or wheat, barley, and rye mixtures. P.R.O., PC 1/33/87-8.

<sup>6</sup> Dickson, *op. cit.*, p. 638; and in Poulton area, negligible quantities of wheat, but about 6,500 quarters of oats imported annually, 1806-8.—*Ibid.*, p. 637.

<sup>7</sup> W. Marshall, *The Rural Economy of Yorkshire*, 1788, II, p. 22; J. Tuke, *General View . . . North Riding*, 1800, pp. 126, 291; Eden, *op. cit.*, pp. 352 ff.; Henderson, *loc. cit.*, p. 342; P.R.O., PC 1/33/87-8 (Halifax); P.R.O. H.O. 42/54 ("Oatmeal is the favourite food of the West Riding"); E. W. Gilboy, *Wages in the Eighteenth Century England*, Harvard, 1934, p. 199 (on wheaten bread in Leeds c. 1770-1800).

<sup>8</sup> H. E. Strickland, *General View . . . East Riding*, 1812, pp. 123-6. It was reported from Malton that about "30 years ago," i.e. c. 1770, "the lower class of people upon the Wolds lived almost entirely upon barley. . ."—P.R.O., H.O. 42/54. Hull and neighbourhood was all wheaten bread.—*Annals of Agriculture*, XXXI, 1798, p. 79. However, maslin was probably still popular, especially in the north, as oats may have been to the west. The "oat-line" seems to have run north of Doncaster and west of Wakefield.—*Ibid.*

<sup>9</sup> Tuke, *op. cit.*, pp. 117-18, 127. The same source refers to "formerly," when "a very black, heavy, sour bread made of rye" was much in use, and which was still sometimes eaten by "the lower orders of the country." Oat bread was usual in the Craven district.—Henderson, *loc. cit.*, p. 342. Marshall reported in 1788 that "masshelson" (maslin) bread was still common in the moorlands.—*Op. cit.*, II, pp. 14-15, while according to the 1801 Crop Returns much maslin was still grown in the county.—P. Churley, 'The Yorkshire Crop Returns of 1801', *York. Bull. Econ. Soc. Res.* v, 1953, p. 186.

Northumberland and Durham offer perhaps the most bizarre grain combinations. Along the coast and on Tyneside the preference was rye or maslin, and elsewhere, oats in the south, and oats and barley mixed sometimes with rye, grey peas, and beans in the north.<sup>1</sup> In one area of Northumberland farm labourers were allowed each year 32 bushels of oats, 24 of barley, 12 of peas, and 12 of wheat.<sup>2</sup> West of the Pennines in Cumberland and Westmorland, oats with barley, or further north, barley with oats, were general everywhere. Even in Kendal wheat comprised less than 25 per cent of total cereal consumption, and in most country households it was virtually unknown except at "the festive season of Christmas" when it was used for pastry.<sup>3</sup>

Scotland may be divided into three main dietary regions: (1) the border counties, with their oat-cake and barley-and-peas bannocks; (2) the central Lowlands, where, in Edinburgh and Glasgow, as well as some of the larger villages, wheaten bread was already an "infatuation" with the lower classes, although large quantities of oatmeal for cake and porridge, and of pot barley for soups, were also used; and (3) most of the rest of Scotland, where oat-cake, and to a lesser extent barley bread and bannocks, were "indispensable" foods.<sup>4</sup>

It has been suggested that a large minority of the population of England and Wales, and the overwhelming majority in Scotland, subsisted wholly or partially on grains other than wheat. However, a prime characteristic of pre-industrial diet was the extent to which choice of staple fluctuated from season to season according to the size of the harvest and the relative prices of the different cereals. In 1577 Holinshed observed how in times of dearth many were forced to content themselves with "bread made either of beans, peas or oats, or of all together and some acorns among," while in the next century Houghton reported the extensive use of turnip bread in Wales and, during the 1690's, also in Essex.<sup>5</sup> It is sometimes assumed, however, that by the late eighteenth century the lower income groups were insensitive to price changes, and were unwilling to resort to cheaper foods even under the compulsion of dire scarcity. The Hammonds, for example, thought the poor too

<sup>1</sup> J. Bailey, *General View . . . Durham*, 1810, p. 358; J. Bailey and G. Culley, *General View . . . Northumberland*, 1805, p. 255; T. S. Ashton and S. Sykes, *The Coal Industry of the Eighteenth Century*, Manchester, 1929, p. 101; Eden, *op. cit.*, pp. 184-6, 271. The informant at Hexham Abbey stated in 1796 that barley mixed with grey pease, and sometimes beans, was the only bread of labouring poor, indoor servants, and farmers, and even townsmen, except in Newcastle where the chief breads were rye or maslin. P.R.O. PC 1/33/87-8.

<sup>2</sup> N. Curtis-Bennett, *The Food of the People*, 1949, p. 108.

<sup>3</sup> J. Bailey and G. Culley, *General View . . . Northumberland, Cumberland and Westmorland*, 3rd edn, 1805, p. 220; *Annals of Agriculture*, 1795, xxiv, p. 313; Eden, *op. cit.*, pp. 334-7; Roeder (*loc. cit.*, pp. 92-3) records that in Westmorland they ate hasty pudding and clap bread (oats), in Cumberland barley, and on the borders barley and oat-cakes, scones, and bannocks.

<sup>4</sup> 'The Dietary of the British Labourer', *Quart. Jnl. Agric.*, xxiv, 1863-5, p. 407; *Farmers Magazine*, 1801, p. 134; R. Douglas, *General View . . . Roxburgh and Selkirk*, 1798, p. 191; G. Robertson, *General View . . . Midlothian*, 1795, pp. 95-6, 101-2, 104-5, 172-3; R. Somerville, *General View . . . East Lothian*, 1800, pp. 117-18, 127; J. Trotter, *General View . . . West Lothian*, 1811, pp. 101-2; Roeder, *loc. cit.*, pp. 94-5; J. Colville, 'Lowland Scotland in the Eighteenth Century', *Blackwoods Magazine*, 1892, pp. 476-84. In the Scottish Highlands oatmeal had probably given way to potatoes, but certainly some wheat was eaten in Aberdeen.—*Farmers Magazine*, 1801, p. 216. According to Edlin (*op. cit.*, p. 129), pea bread was "very common" in parts of rural Scotland.

<sup>5</sup> Cited Ashley, *Bread of our Forefathers*, p. 58.

"fine-mouthed" to eat any but the finest wheaten bread, with the result that in the mid-1790's "all attempts to popularize substitutes failed, and the poorer the labourer became the more stubbornly did he insist on [it]."<sup>1</sup>

That choice of cereal was price and income elastic, and that pre-industrial patterns endured until at least the early nineteenth century is verified by the government inquiries of 1796 and 1800, which show not only a marked decline in *per capita* cereal consumption, but also a widespread substitution of barley, and to lesser extents, of oats, pulse, and rye, for wheat, and of browner for whiter flours.<sup>2</sup>

Positive aversion to the use of wheat substitutes was more apparent in 1796 than in 1800, but was in both years confined to a few southern and eastern counties, in particular, London and Middlesex, Berkshire, Buckinghamshire, Essex, Hampshire, Hertfordshire, Kent, Oxfordshire, Surrey, Sussex, and Wiltshire. Here it was probably true, as at Wootton Bassett, that the "lower orders" preferred "half a loaf of fine Wheaten Bread, to a pound of mixed with any substitute." The only important concession was a switch from first- to second- and third-quality flours.

Elsewhere in Britain, and even in parts of the above-mentioned counties, substitution was the general rule. In 1796 one-third of the population of Calne (Wiltshire) ate barley bread alone, and another third a two-to-one mixture of wheat and barley. In 1800, partly because cereal prices were higher and partly because the backbone of resistance was already broken by the earlier crisis, coarser grains were more extensively resorted to than in 1796. Of the almost 500 towns and villages replying to the government circular, most claimed a reduction in wheat consumption of between 30 and 50 per cent. The greater part of the "labouring population" of southern Britain then subsisted, largely if not completely, on barley, while in the north wheat lost most of the ground it had gained there since the mid-eighteenth century. Large quantities of rye were imported to help bridge the gap.<sup>3</sup> In Barkway (Hertfordshire) a "wholesome nutritious [*sic*] Bread made of Half Wheat and Half Rye" was employed by the "poor People, many Farmers and the little Tradesmen." At Southwell (Nottinghamshire), the ratio of wheat to barley and rye milled locally fell from 39:1 in 1794 to 6·8:1 in 1795, and to 1:9 during the first three months of 1796. Young's Nottinghamshire labourers had presumably rediscovered their "rye teeth"! More would have been required of them at Uxbridge (Middlesex)<sup>4</sup> where

<sup>1</sup> J. L. and B. Hammond, *The Village Labourer 1760-1832*, new edn, 1913, ch. 7.

<sup>2</sup> The 1796 replies, of which about 150 from different towns and villages in England and Wales survive, were in answer to a government circular of Dec. 1795 asking for measures to be taken to reduce wheat consumption by one-third.—P.R.O., PC 1/33/A87-8. The 1800 inquiry (P.R.O., H.O. 42/52-5) was more ambitious in both scale (over 400 replies) and scope. Through the bishops, parish clergy were asked, *inter alia*, the extent to which rice, barley, and oats had been used as substitutes for wheat. Though they mostly relate to particular measures taken there is often some indication of grain used in normal times. I am heavily indebted to Mr Ian Mitchell of Wadham College, Oxford, who referred me to these sources and supplied a detailed breakdown of the Cheshire evidence.

<sup>3</sup> The use of rye is recorded in the following counties: Cheshire, Cumberland, Durham, Hants., Herts., Lancs., Northumberland, Notts., Rutland, Suffolk, Warwickshire, Westmorland, Worcs., and N.R. Yorks.; but mainly in the north-east and east Midlands.

<sup>4</sup> Edlin, *op. cit.*, p. 127.

bean bread was "in daily use", and at Bristol, where (American?) maize was a temporary stand-by.<sup>1</sup> In northern England particularly, rye, barley, oats, and pulse were substituted, sometimes randomly one for another, depending on supply. Houghton-le-Spring (Durham) employed "every grain convertible to the use of Man," while, in some areas, because of local shortages of the usual grains, some families who could afford it may have turned even to wheat!

The events of 1795-6 and 1799-1800, repeated subsequently perhaps in 1809-12 when wheat prices reached new historic peaks, underline the difficulties of generalizing about, still more of being able to measure, "normal" cereal consumption during the war period. Some attempt at quantification seems called for, however, in order to establish the gross magnitudes of wheat and "other grain" consumption. In the table below cereal usage is measured in terms of "consumer equivalents;" population is derived from the 1801 census, and more arbitrarily, grain-eating proportions from the contemporary evidence.

"EQUIVALENT" PERCENTAGE OF THE POPULATION CONSUMING  
DIFFERENT CEREALS, 1801

|                           | <i>Wheat</i> | <i>Barley</i> | <i>Oats</i> | <i>Rye</i> | <i>Pulse</i> |
|---------------------------|--------------|---------------|-------------|------------|--------------|
| London and Home Counties* | 97           | 2             | 1           | —1         | —1           |
| Southern England†         | 90           | 9             | —1          | 1          | —1           |
| Eastern England‡          | 96           | 4             | —1          | —1         | —1           |
| South-western England§    | 45           | 55            | —1          | —1         | —1           |
| Midlands¶                 | 70           | 17            | 12          | 1          | —1           |
| Northern England          | 25           | 18            | 50          | 6          | 1            |
| Wales                     | 15           | 60            | 20          | 5          | —1           |
| England and Wales         | 66.4         | 16.9          | 14.8        | 1.8        | 0.1          |
| Scotland                  | 10           | 10            | 72          | —          | 8            |
| Great Britain             | 57.8         | 15.5          | 23.6        | 1.5        | 1.3          |

\* London, Essex, Herts., Kent, Middx., Surrey.

† Beds., Berks., Bucks., Dorset, Gloucs., Hants., Herefordshire, Oxon., Somerset, Sussex, Wilts., Worcs.

‡ Cambs., Hunts., Norfolk., Suffolk. § Devon, Cornwall.

¶ Cheshire, Derbys., Leics., Lincs., Northants., Notts., Rutland, Salop., Staffs., Worcs.

|| Cumberland, Durham, Lancs., Northumberland, Westmorland, Yorks.

It is suggested, therefore, that in 1800 only an equivalent 65-70 per cent of households in England and Wales, and 55-60 in Great Britain overall, lived on wheat. Such a low wheat-eating fraction is not altogether surprising if one remembers that in 1764 Charles Smith estimated it at 62.5 per cent—which is possibly an overstatement, the more so, as some of his contemporaries put the fraction much lower, at

<sup>1</sup> Rice was used in a small number of areas, mainly in southern England, though not necessarily for bread. Bread made of rice and wheat was recorded at Holywell, Flintshire, but despite much publicity such usage was never popular.—Thomas, *op. cit.*, p. 48.

only one-half.<sup>1</sup> Who was the more correct is a main point at issue, but a closer look at Smith's calculations suggests that he may not have been quite the "well-informed and judicious authority" he is often depicted. The agricultural evidence refutes the possibility of national rye production being large enough to sustain, as Smith asserts, an equivalent 880,000 persons, nor, as Britain was at this stage a net exporter of that grain, could the deficiency have been made good from outside sources. Similarly suspect is the claim that one-third of the population of northern England lived on wheat, when apart from seaward areas in the North Riding and north-east, which used wheat-and-rye mixtures, wheat was otherwise then still a great novelty, whose popularity increased significantly only after 1770.<sup>2</sup>

The more pertinent question, at least by this reckoning, is why historians have tended in the past to understate "other grain" consumption. On Ashley's part it may be attributed to his extreme preoccupation with rye, and his belief that the increase in wheat-eating after 1700 was the simple transition from the one winter corn to the other.<sup>3</sup> He failed to detect important "intermediate" changes which occurred within and between the coarser grains, in particular a switch from rye, barley, and pulses into oatmeal in northern England and Scotland.<sup>4</sup> On the other hand, Fussell's assertion that 80 per cent of households in England and Wales were already wheat-eaters in 1700 rests on the evidence of Celia Fiennes's tour, Clapham's incomplete list of counties where inferior grains were still in use in 1821-33, and doubtful assumptions about the relationship between income and choice of cereal.<sup>5</sup> Detracting also from the possibility of a much wider use of "other grains," has been the tendency to conceive of cereal consumption in terms only of bread, whereas in northern and western Britain, cereals were eaten in a wide variety of other forms—wet and dry, hot and cold, baked and griddled—which appear often to have been overlooked by contemporary observers and by historians.<sup>6</sup>

## II

The nineteenth century saw the continuation and culmination of the trend towards a nationally uniform pattern of cereal-eating based on the wheaten loaf. The degree to which regional differences were ironed out is indicated by the results, summarized below, of the national dietary surveys of 1902 and 1904.<sup>7</sup>

<sup>1</sup> Ashley, *Bread of our Forefathers*, pp. 5-6, "... some, who have considered the matter with great attention, and are better informed in regard thereto than most inquirers generally be, were inclined to think that in the year 1764 one half of the people could not be supposed to feed on such [wheaten] bread."

<sup>2</sup> A factor which may have contributed to the slowing-down of the growth of the wheat fraction after 1760 was the faster growth of population in the "other grain" than in the wheat-eating counties.—Deane and Cole, *op. cit.*, table 24, p. 103.

<sup>3</sup> Ashley, *Bread of our Forefathers*; Ashley, "The Place of Rye . . . Food".

<sup>4</sup> Colville, *loc. cit.*, pp. 476-84. In Scotland oats superseded barley and peas during the eighteenth century, while in some areas white peas displaced grey peas.

<sup>5</sup> Fussell, *loc. cit.*, pp. 84-8.

<sup>6</sup> Roeder, *loc. cit.*, *passim*. Other types of cereal foods—"jannocks," "bannocks," "havercake," made from barley and oats—were eaten in many parts of southern and eastern England in the medieval period but seem to have largely disappeared by the eighteenth century. *Ibid.*, map, p. 42.

<sup>7</sup> Memoranda, *Statistical Tables and Charts*, Cd. 1761 (1903), pp. 209 ff.; Cd. 2337 (1904), p. 5.

AVERAGE WEEKLY CONSUMPTION OF CEREALS BY AGRICULTURAL LABOURERS'  
FAMILIES (OF SIX PERSONS) IN ENGLAND IN 1902 (IN LB. PER FAMILY)

|                  | <i>South and<br/>South-west</i> | <i>Midlands</i> | <i>Eastern</i> | <i>Northern</i> | <i>National<br/>average</i> |
|------------------|---------------------------------|-----------------|----------------|-----------------|-----------------------------|
| Wheaten bread    | 29.00                           | 27.00           | 17.00          | 5.00            | 19.50                       |
| Wheaten flour    | 9.00                            | 7.00            | 20.5           | 23.00           | 14.90                       |
| Oatmeal and rice | 1.25                            | 1.5             | 1.0            | 1.25            | 1.25                        |

AVERAGE WEEKLY CONSUMPTION OF CEREALS BY URBAN WORKERS' FAMILIES  
(OF 5.2-5.9 PERSONS) IN 1904 (IN LB. PER FAMILY)

|                           | <i>London</i> | <i>Midlands</i> | <i>North</i> | <i>Rest of England<br/>and Wales</i> | <i>Scotland</i> |
|---------------------------|---------------|-----------------|--------------|--------------------------------------|-----------------|
| Wheaten bread and flour   | 33.13         | 32.44           | 29.14        | 31.86                                | 31.14           |
| Rice, tapioca and oatmeal | 1.67          | 1.56            | 1.88         | 1.26                                 | 7.05            |

The most significant features are the regional uniformity of wheaten bread and flour consumption, and the small consumption of the "other cereals," rice, oatmeal, and tapioca. Even in Scotland the latter amounted to less than 1½ lb. per head per week, where in the 1840's oatmeal had been a principal foodstuff. Regional differences in the ratios of bread to flour reflect the greater preference in some areas for home-baked as against manufactured bread.

Apart from Dr Edward Smith's surveys conducted in the early 1860's,<sup>1</sup> there is surprisingly little systematic evidence on nineteenth-century diet, which severely limits the attempt to measure the rate and timing of change in cereal-eating habits. However, if we can identify the chief determining factors, these may serve as useful, if indirect, pointers to general trends.

As the most expensive cereal, wheat enjoyed a relatively high cross-price-income elasticity of demand. It should follow, therefore, that changes in the cereal mix ought, *ceteris paribus*, to be correlated with changes in the relative prices of the competing cereals and with changes in average real incomes. In the north and west in the eighteenth century, and in some areas until as late as the 1850's, wheat was regarded as something of a luxury, a "dainty" reserved for the more "respectable," more "genteel" tables. It was used otherwise only on special occasions, and more regularly only when trade and employment were good. After the Napoleonic Wars, but especially during and after the third quarter of the nineteenth century, the price differentials between wheat and the spring corns progressively narrowed, although in practice, because of their different milling extraction rates and weights

<sup>1</sup> Report of Dr Edward Smith to the Privy Council on the dietary of low-fed populations, especially in reference to the agricultural class, *Sixth Report of the Medical Officer of the Privy Council*, 1863. See also, *Fifth Report*, 1863, pp. 346 ff.

per bushel, these were considerably less than is implied by wholesale prices.<sup>1</sup> By the 1870's oatmeal was in many areas as expensive, if not more so, than wheaten flour.<sup>2</sup> While it is hazardous to generalize about real incomes, they undoubtedly improved over the eighteenth century; but, according to Gilboy, more so in the north than the south, where a deterioration may have set in after 1765 when the price of wheat began to rise again.<sup>3</sup> After 1815 real incomes may have fallen in some agricultural districts in the south and east, but after an initial setback, and despite some violent short-term fluctuations, levelled off in Scotland and northern England to resume their upward trend in the 1830's. After 1850 the position is much clearer; higher wages, more continuous employment, and falling wheat prices made for a marked and sustained all-round improvement in standards of living. But equally if not more important, especially during the first half of the nineteenth century, was the effect on average purchasing power of the redistribution of the labour force between the lower- and higher-wage industries. The agricultural share of the national work-force declined from 50-60 per cent in 1750 to 30-40 per cent in 1800, and to 7-10 per cent in 1900, while the numbers employed in that other great low-income sector, domestic industry, also fell dramatically.<sup>4</sup>

The uptake of wheat-eating was correlated also with urbanization, especially in those regions where that cereal was little cultivated. Wheat gained a first foothold in the towns, which partly reflected their greater wealth and purchasing power, and partly also the effect of other less tangible forces, deeply rooted in urban society, which combined to modify, and eventually to destroy, the older value systems of which diet was a component part. As Burnett explained, the growth of town-living encouraged competition and social imitation among all classes, leading ultimately to more sophisticated tastes and eating habits, and to the progressive diffusion of wheaten bread, first wholemeal brown, then sifted white, down the social and income scale.<sup>5</sup> There were other factors also. For greater convenience, and because of the high price of fuel, townsmen came increasingly to depend on the services of the professional baker. As his monopoly increased so that of the mealman diminished, leaving the consumer with fewer alternatives as to choice of product and raw material. Bakers were established in the larger towns in medieval times but

| <sup>1</sup> | Weight per bushel | Flour yield | % yield |
|--------------|-------------------|-------------|---------|
| Wheat        | 60                | 48          | 80      |
| Barley       | 48                | 37½         | 78      |
| Oats         | 40                | 22½         | 56      |

*Farmers Magazine*, Jan. 1801, p. 132. After 1800 the wheat fraction fell, as flours grew finer, to about 75 per cent.

<sup>2</sup> Edward Smith, *Sixth Report*, p. 156; Edward Smith, *Foods*, 3rd edn, 1874, p. 168. Similarly, Smith noted little difference in the prices of brown and white flours. According to calculations by T. R. Gourish, the price of oatmeal in Glasgow fell by only c. 20 per cent between 1810 and 1831, compared with 45 per cent for white wheaten bread and 40 per cent for browner "household" bread.—'The Cost of Living in Glasgow in the Early Nineteenth Century', *Econ. Hist. Rev.*, 2nd ser., xxv, 1972, p. 73.

<sup>3</sup> Reproduced in B. R. Mitchell and Phyllis Deane, *Abstract of British Historical Statistics*, Cambridge, 1962, pp. 346-7.

<sup>4</sup> Deane and Cole, *op. cit.*, pp. 141-53. In Lancashire numbers of handloom weavers, who were traditionally oat-eating, increased until the mid-1820's; thereafter, especially after 1835, they began rapidly to decline.

<sup>5</sup> J. Burnett, *Plenty & Want*, 1966, ch. 1. I am heavily indebted to this text, which constitutes the best and most expert account of dietary change, especially in urban Britain, since 1800.

first appeared in the villages of southern England in the middle of the eighteenth century. Subsequently their numbers grew rapidly, to the point where by the 1820's home baking, much to Cobbett's alarm, had almost died out. It was complained in 1857 that in southern England, and in many other parts, "not one woman in twenty is capable of making a loaf."<sup>1</sup> Home baking held up much longer in the south-west, in East Anglia, and above all in the north. Probably not half the population of Manchester, for example, used manufactured bread in 1815, while in 1831, as against the one baker to every 295 inhabitants in Berkshire, there was but one to every 2,200 in Cumberland.<sup>2</sup> The effect of this dependence, a habit which, like wheat-eating itself, once formed was difficult to break,<sup>3</sup> could be seen in 1796 and 1800 when, it was complained, bakers refused to use cheaper flours and confined their trade, as before, to the manufacture of the better qualities of wheaten bread.<sup>4</sup> In Newcastle bakers seldom sold mixed bread, while at Berkeley (Gloucestershire) those inhabitants who baked at home were able to use wheat, barley, and bean mixtures, whereas bakers sold only wheaten breakfast cakes, and white and "household" wheaten bread. Similarly at Callington, those persons who could not afford to purchase "meal" in large quantities had to rely on the small wheaten loaves sold by the baker.

In the countryside force of custom was by comparison stronger, and the demonstration effect weaker, than in the towns. Other constraints on dietary change included low wages, payments in kind, easy access to "other grains" through gleaning, and the willingness of country millers to grind small parcels of grain to order. The rigidities were especially evident in the west and north where wheat was little grown, and where often it had to be brought in from a distance, perhaps at considerable expense. After 1800 higher incomes, lower wheat prices, wages in cash rather than kind, the decline of gleaning, changes in cropping—in particular the greater emphasis on wheat and its spread northwards and westwards—and, not least, the closing of the cultural gap between town and country, combined to break down old prejudices and engender new habits.

If in the countryside tradition endured longest, then it did so in increasing isolation as the demographic balance between town and country was transformed. In some areas the rate of urbanization may be a useful proxy by which to measure the spread of wheat-eating after 1800. The combined populations of the twelve largest towns in northern England and six largest in Scotland grew by just 416,000 between 1801 and 1821, but thereafter by 1.14 million in 1821–51, and over the succeeding two decades by a further 1.56 million. By 1900 four-fifths of the population of Great Britain was classified as urban, compared with one-fifth in 1800. Conversely, population in some of the more intransigent non-wheat-eating areas, such as parts of western Wales and the Scottish Highlands, was already declining

<sup>1</sup> Quoted, D. Hartley, *Food in England*, 1954, p. 505.

<sup>2</sup> Burnett, *op. cit.*, pp. 3–5.

<sup>3</sup> Arthur Young, writing about wheat-eating in northern England, described it as primarily a matter of taste and individual preference, and in towns such as Leeds, as a habit cultivated out of necessity which grew into a "profound" taste. Gilboy, *op. cit.*, pp. 199–202.

<sup>4</sup> P.R.O., PC 1/33/A87–8; H.O. 42/54.

by 1850. Urbanization proceeded much faster in the "other grain" than in the wheat-eating regions of Britain, a development which largely accounts for the accelerated decline of barley- and oat-eating after 1820.

The chief determining factors of dietary change were not always economic. Rising real incomes did not have the same effect in northern as in southern England of stimulating wheat consumption during the eighteenth century, just as on Tyne-side and in mid-Lancashire urbanization did not signal, at least not initially, head-long flight from traditional grains. Taste and custom were often able to retard or accelerate the pace of dietary change independently of trends in prices and incomes. The history of diet cannot be divorced from that of the more complex process of cultural change. More narrowly, there existed a close, if indefinable, relationship between "taste," methods of food preparation, and nature of the raw materials. In the west and north oats, barley, and pulses were often consumed as gruels, pot-tages and "bake ware," whereas wheat was primarily a bread corn. For wheat entirely to take over required the complete breakdown of the traditional dietary regime. Conversely, because it represented little more than the substitution of one bread corn for another, wheat was much more easily able to supplant rye.

### III

It is difficult to determine exactly the timing and geography of changes in cereal-eating habits after 1800, but in Wales and northern England the transition from coarse grains to wheat was incomplete in 1850, while in Scotland and Ireland it occurred mainly during the third and last quarters of the century. In 1821 McCulloch reckoned that an equivalent 10·3 million, or less than 50 per cent of the combined populations of Britain and Ireland, relied on wheat, compared with 7 million who ate barley and oats, and 5 million, mostly in Ireland, who subsisted on potatoes.<sup>1</sup> In 1841 Dudgeon put the proportion of wheat-eaters in England and Wales at less than 90 per cent, in Scotland at 40 per cent, and in Ireland at 25 per cent.<sup>2</sup> Gilbert and Lawes estimated *per capita* wheat consumption in Scotland and Ireland in 1852-68 at respectively 70 and 50 per cent of that of England and Wales.<sup>3</sup> The position at half-century was probably best summed up by the statement that five-eighths of the wheat supply was consumed by that half of the population which ate wheaten bread only, and three-eighths by the other half.<sup>4</sup> The fact that a statistically significant proportion ate other grains was generally admitted by arithmeticians, and duly allowed for in their calculations. It was perhaps the effect on total demand of this levelling-out process, as much as, if not more than, higher consumption among existing wheat-eaters, which explains the rise in wheat availability per head up to the 1870's. We might postulate, on *a priori* grounds, that the growth

<sup>1</sup> H. Evershed, 'Variation in the Price and Supply of Wheat', *J.R.A.S.E.*, 2nd ser., v, 1869, pp. 188-9.

<sup>2</sup> J. Dudgeon, 'On a Method of Obtaining Correct Statistics of Agricultural Produce', *Quart. Jnl. Agric.*, xvii, 1849-51, pp. 367-8. The same source estimates the total human consumption of wheat at 16 million quarters, of oats at 10 million, and of barley, excluding malt and distilling, at 4 million.—*Ibid.*, p. 369.

<sup>3</sup> J. B. Lawes and J. H. Gilbert, 'On the Home Produce, Imports and Consumption of Wheat', *J.R.A.S.E.* 2nd ser., iv, 1868, p. 386.

<sup>4</sup> *Farmers Magazine*, Oct. 1853, p. 426.

of wheat-eating in northern Britain was correlated with urbanization, whose pace accelerated dramatically after 1820. On the other hand, the changeover may have been retarded by industrial depression and unemployment during downswings of the trade cycle, as in 1816-19, 1826-32, 1839-43, and 1847-8. In fact, the main wave of change may have been delayed until the 1830's, when, it was claimed, wheat became "almost exclusively used for bread," low prices having driven other kinds of grain out of consumption.<sup>1</sup> Tooke and Newmarch observed in this decade "increased consumption from abundance," amounting to "little more than waste."<sup>2</sup>

It is possible that in 1850 the wheat-eating fraction in England and Wales still did not exceed 90 per cent; and it could be argued that numbers of "other grain" eaters, though diminishing relatively, continued to increase absolutely until about that time. Roeder records that in middle-class families in Lancashire and Yorkshire in early Victorian times the children ate oatmeal porridge and milk twice a day, and that "*both brown and white loaves* [my emphasis] were baked. . ."<sup>3</sup> Whatever the preference in better times, there is no doubt that in many northern industrial towns oats were extensively resorted to in the depressions, as in the early 1840's, when, in Paisley, the consumption of animal food and wheaten bread was claimed to have "entirely ceased," and to have fallen substantially in the towns of Accrington and Dukinfield.<sup>4</sup> As Somerville explained: 17s. per week and full employment meant loaf bread and butcher's meat, but 6s. and unemployment only oatmeal gruel and potatoes. Until at least the early 1830's, in Glasgow, handloom weavers at 9s. were reckoned to consume 13 lb. of oatmeal and 4½ lb. of wheaten bread per week, and the better-off workers at 18s., 13 lb. of oatmeal and 18 lb. of wheaten bread.<sup>5</sup> Indeed, it was authoritatively stated in the 1850's that in many country areas of Wales and northern Britain wheat was rarely, if at all, used by labouring households, that in Scotland, barley broth was still "a staple dish on the dinner tables of the middle and working classes," and that oatmeal was still the principal food, not only of the rural population but also of "that proportion of the mechanic class whose employment was not of a sedentary nature."<sup>6</sup> In Northumberland, maslin may still then have comprised as much as 40 per cent of total cereal consumption in mining villages.<sup>7</sup>

On the other hand, except in rural areas whose share of the total population was

<sup>1</sup> *Ibid.*, Sept. 1841, p. 209.    <sup>2</sup> T. Tooke and W. Newmarch, *A History of Prices*, 1928 edn, v, p. 74.

<sup>3</sup> Roeder, *loc. cit.*, pp. 83-4.

<sup>4</sup> Alex Somerville, *Letter to the Farmers of England*, 1843, pp. 9, 12-13; W. Neild, 'Comparative Statement of the Income and Expenditure of Certain Families of the Working Classes in Manchester and Dukinfield in the Years 1836 and 1841', *Jnl. Stat. Soc.*, IV, 1841, pp. 320-4; Burnett, *op. cit.*, pp. 44-50.

<sup>5</sup> Gourish, *loc. cit.*, pp. 70-1.

<sup>6</sup> J. C. Morton, *Cyclopedia of Agriculture*, 1855, I, p. 191; III, pp. 506-7. See also, C. S. Read, 'On the Farming of South Wales', *J.R.A.S.E.*, x, 1849, p. 148; L. Hindmarsh, 'On the State of the Agricultural Labourers in Northumberland', *Jnl. Stat. Soc.*, I, 1839, pp. 405, 410; W. J. Garnett, 'The Farming of Lancashire', *J.R.A.S.E.*, x, 1849, p. 19; Ashley, *Bread of our Forefathers*, pp. 22-3 (for Cheshire 1833, and particularly Lancashire, where in the 1820's one old weaver born in the north of the county claimed to have seen his first piece of wheaten bread when he travelled to the Manchester area.); J. H. Clapham, *An Economic History of Modern Britain: the Early Railway Age, 1820-1850*, 2nd edn, Cambridge, 1964, p. 136 (for 1821-33).

<sup>7</sup> Burnett, *op. cit.*, p. 149.

relatively small and rapidly diminishing, wheat was the predominant cereal in most areas of Britain at mid-century. McCulloch estimated that numbers of barley-eaters had fallen from 1.5 million in 1821 to half a million by 1853.<sup>1</sup> In south-western England and the industrial counties of South Wales barley bread had gone out of fashion by the 1830's. In 1852 it was reported that in Cumberland barley bread had gone out of use, "as wheat bread is preferred, and its price now brings it within reach of all," and in northern Lancashire, that wheat had to a large measure superseded oaten bread.<sup>2</sup> The degree to which the coarser grains still featured in the agricultural districts of southern and eastern England may never be known. Up to 1850 the economic incentives for them to do so must have been strong, and some, at least, would have heeded Esther Copley's advice to substitute mixtures of rye, barley, and maize when wheat was dear.<sup>3</sup>

Joseph Arch recollected as a boy (in the 1830's) taking with him to work a "hunch" of barley bread, just as some of T. Fisher Unwin's older informants had resorted to wheat bran and barley during "the Hungry Forties."<sup>4</sup> Somerville records that in Somerset during the Crimean War farm labourers were forced to subsist on a half-diet of barley, wheat, turnips, and cabbage.<sup>5</sup> On the other hand, folk memory is notoriously unreliable in such matters. Even if true, one wonders just how typical was the experience of the old Wiltshire labourer who, according to A. G. Street, fed in his younger days on barley bannocks made from the fine siftings of meal given his father to feed the sheep-dogs!<sup>6</sup>

After 1850 a combination of factors—social, cultural, economic, demographic—made for a progressive ironing-out of local and regional differences, and for greater national uniformity in food habits. In 1855 J. C. Morton had forecast that wheat would soon become general in Scotland if prices remained low. In some areas already in the mid-1860's, but almost everywhere by the 'eighties and 'nineties, oatmeal was more expensive than wheat, to the point of being looked upon as something of a luxury, to be eaten occasionally, and in small quantities.<sup>7</sup>

The careful dietary surveys of farm-labourer households conducted by Dr Edward Smith in the 1860's reveal the remarkable extent to which wheat had by then displaced the coarser grains, even in the countryside among agricultural labourers.<sup>8</sup> In England barley and maslin were rarely used, while oatmeal, though

<sup>1</sup> Evershed, *loc. cit.*, p. 189; J. R. McCulloch claimed that by early 1850's the consumption of rye, barley, and oats in the northern and south-western parts of England and Wales was "reduced to a mere trifle," and that in Scotland ten times more wheat was consumed than in 1790.—*Statistical Account*, 4th edn, 1854, p. 581. See also his *Dictionary*, 1859 edn, p. 197.

<sup>2</sup> J. Caird, *English Agriculture in 1850-51, 1852*, pp. 283-4, 367. See also Ashley, *Bread of our Forefathers*, pp. 22-3, and Clapham, *op. cit.*, p. 136, for other examples of pre-1850 changes.

<sup>3</sup> Esther Copley, *Cottage Cookery*, 1849 edn, p. 92, cited Burnett, *op. cit.*, p. 20.

<sup>4</sup> Pamela Horn, *Joseph Arch*, Kington, 1971, p. 6; T. Fisher Unwin (ed.), *The Hungry Forties*, 1904, *passim*. See also Burnett, *op. cit.*, pp. 23-8.

<sup>5</sup> Cited Burnett, *op. cit.*, p. 119. <sup>6</sup> A. G. Street, *Farmer's Glory*, 9th impression, 1944, p. 56.

<sup>7</sup> Morton, *op. cit.*, III, p. 507, above, n. 61.

<sup>8</sup> Smith, Privy Council Report, *op. cit.* Smith examines the dietaries mainly of farm labourers' families but also of other low-income groups, such as silk-weavers, needlewomen, stocking- and glove-makers, and shoe-makers, the so-called "in-door occupations." The results, which are carefully tabulated, cover all items of dietary including wheaten bread and flour, oatmeal, barley meal, maslin, and Indian corn.

purchased by 20 per cent of families, was important only in the northern counties, and even there was never the principal cereal. There was, Smith emphasized, "no impression in the minds of English farm labourers that it [oatmeal] is a better food than wheaten flour."<sup>1</sup> In Wales wheat was used by all families in Anglesey and the north, and by 80 per cent in the south. Oatmeal was used by 60 per cent of families, and in parts of the south was mixed occasionally with barley and made into cake or bread. Barley, though fast diminishing in popularity, was still eaten in Cardigan, Carmarthen, and western Glamorgan, where it was sometimes the principal or exclusive breadstuff. Scotland exhibited greater divergence, in that wheat was used by 62 per cent of families but was the principal food only in the southern and border counties. Oatmeal, on the other hand, was eaten in every case, being in 90 per cent of families the principal and in 15 per cent, mainly north of Fort William, the exclusive cereal. Barley meal and peas, in small quantities, were used by 20 per cent of families.

By the 'sixties wheat was the predominant cereal in almost all parts of midland and northern England. In Lancashire, for example, oatmeal was now little used by factory workers as a "separate food," although it featured more frequently around Preston and Blackburn than in the south around Manchester.<sup>2</sup>

## IV

The picture which emerges is one in which wheat displaced other grains, first as a bread corn and then, as the traditional wet and other dry cereal foods declined in popularity, as the general-purpose grain. In 1902, Roeder could regret the fact that in Lancashire and Yorkshire "the time and glory of the great porridge eater is evidently over, and his place has been usurped by the great tea-devourers of our times."<sup>3</sup> The "Celtic fringe" alone offered much resistance after 1880. Oatmeal was for some time to come an important food in the Scottish Highlands, but in Wales its demise was more imminent. In 1893 the Narberth Union wheat and barley bread, gruels, and "flammerys," and even a little "shipris" (oats with barley) could still be found, but except in the mountain parishes none but wheaten bread was fed to living-in servants, while the wet foods had been almost entirely superseded by tea. Similarly in Montgomeryshire around Llanfyllin, barley and rye breads had been completely replaced by wheaten bread, and oatmeal was considerably less popular than "in former years."<sup>4</sup> Meanwhile in Bedale (Yorkshire) farm labourers now ate

<sup>1</sup> Smith, Privy Council Report, *op. cit.*, p. 156.

<sup>2</sup> Edward Smith, *Fifth Report*, pp. 346-7; *Report of the Dietaries of Inmates of Workhouses* (1865), B.P.P., xxxv, 1866, pp. 360-3.

<sup>3</sup> Roeder, *loc. cit.*, p. 44. By 1902 also there were left relatively few bakers in Lancashire selling oat-ware, indicative of the almost complete transformation in dietary pattern which had occurred there since the 1830's. See also, Atkinson, *loc. cit.*, p. 51, which implies that cottage production of oat-bread died out in northern England in the early twentieth century.

<sup>4</sup> R.C. Labour, 1893, II (Wales), pp. 19-20, 62, 87; D. W. Howell, 'The Agricultural Labourer in Nineteenth Century Wales', *Welsh History Review*, vi, 1973, p. 277, suggests that the main changeover had taken place between 1850 and 1870, in which latter year wheaten bread was commonly used in the south-west, and almost universally used in the north.

wheat bread instead of peas and barley bannocks, while their children were no longer nourished on porridge.<sup>1</sup>

By the time of the First World War the metamorphosis, which had begun in the seventeenth century, which was incomplete in 1800, and which in the Celtic zone was still working itself out in the 1890's, had run its full course. In 1914 the Royal Society Committee on the national food supply calculated that the average annual consumption of oatmeal in the United Kingdom averaged less than 14 lb. per head, and that of barley (as "pot" or "pearl" barley) only  $\frac{1}{2}$  lb. where a century earlier they could be measured in hundredweights and quarters.<sup>2</sup>

In view of the unreliability of the evidence and the lack of detailed local studies, these conclusions must be regarded as preliminary and tentative. I have attempted to suggest below the course of the long-run trend by estimating the proportions of the population consuming the different cereals in the years 1800, 1850, and 1900.

EQUIVALENT PROPORTIONS OF THE POPULATION OF GREAT BRITAIN  
CONSUMING THE DIFFERENT QUANTITIES OF GRAIN (PER CENT)

|        | <i>England and Wales</i> | <i>Scotland</i> | <i>Great Britain</i> |
|--------|--------------------------|-----------------|----------------------|
| Wheat  |                          |                 |                      |
| 1800   | 66                       | 10              | 58                   |
| 1850   | 88                       | 44              | 81                   |
| 1900   | 97                       | 84              | 95                   |
| Barley |                          |                 |                      |
| 1800   | 17                       | 10              | 16                   |
| 1850   | 3                        | 5               | 4                    |
| 1900   | 1                        | 1               | —1                   |
| Oats   |                          |                 |                      |
| 1800   | 15                       | 72              | 24                   |
| 1850   | 9                        | 50              | 15                   |
| 1900   | 3                        | 15              | 5                    |
| Pulse  |                          |                 |                      |
| 1800   | —1                       | 8               | 2                    |
| 1850   | —                        | 1               | —                    |
| 1900   | —                        | —               | —                    |
| Rye    |                          |                 |                      |
| 1800   | 2                        | —               | 2                    |
| 1850   | —                        | —               | —                    |
| 1900   | —                        | —               | —                    |

The most critical relationship, perhaps, was that between the increasing demand for wheat due to cereal switching and changes in the rate of average consumption

<sup>1</sup> Cited Burnett, *op. cit.*, p. 131.

<sup>2</sup> J. R. Bellerby *et al.*, *Agriculture and Industry Enquiry*, Agricultural Economics Research Institute, Oxford, roneo, 1954-5. R. H. Rew estimated in 1903 that of the 40 per cent of oats which were sold off farms probably no more than 7½-10 per cent was eaten by "human consumers,"—"The Food Production of British Farms", *J.R.A.S.E.*, LXIV, 1903, pp. 111-12.

among existing wheat-eaters, which, one against the other, determined the national trend in wheat consumption per head. Contemporary opinion was unanimous in the view that wheat consumption per head was rising over the third quarter of the nineteenth century, which was attributed partly, at least, to the advance in "the quantity of wheaten bread displacing lower qualities of food."<sup>1</sup> Gilbert and Lawes calculated that in the United Kingdom wheat consumption per head increased from 5.1 bushels in the 1850's to 5.5 bushels in the 1860's.<sup>2</sup>

Conversely, Mrs Fairlie has recently suggested that in England and Wales average wheat consumption may have fallen between 1841 and 1871 from 8.72 to 7.60 bushels per head.<sup>3</sup> This is, however, unlikely, because it assumes, first, that during this period domestic wheat output declined by almost one-third, and second, and more pertinently, that as late as 1870 wheat consumption in Scotland and Ireland was "still probably negligible." She implies that virtually all home production and imports were consumed in England and Wales and ignores the effects of cereal-switching in northern and western Britain and Ireland. By the same measure, and with possible implications for the "cost of living debate," a disproportionate share of the increase in wheat production during the first half of the nineteenth century was probably absorbed by "converts", so that, while overall consumption per head may have been rising, *per capita* consumption among existing wheat-eaters, who formed the majority of the population, may have been falling.<sup>4</sup>

These are speculations which can be tested by further research. We have been concerned here with the more qualitative aspects of dietary change. I hope to have demonstrated that in 1800 a significant proportion of people in England and Wales, and a large minority in Great Britain, subsisted on the coarser grains, rye, barley, oats, and pulse, and that a century or more was to elapse before wheat could properly be called the "staff of life." A similar changeover, from brown to white breads, has occurred in western and northern Europe and in North America since 1750, as well as in Japan, where rice replaced barley during the later Tokugawa and Meiji eras. It may have been that the most significant feature of dietary change in the early stages of industrialization was less a switch from starch to protein foods, as is generally assumed, as of switches within the starches themselves.

<sup>1</sup> For example, J. A. Clarke, 'Practical Agriculture', *J.R.A.S.E.*, 2nd ser., xiv, 1878, p. 472; Evershed, *loc. cit.*, p. 194; Lawes and Gilbert, *loc. cit.*, p. 380.

<sup>2</sup> Lawes and Gilbert, *loc. cit.*, p. 377. Salaman reckoned that wheat availability per head increased from 0.62 lb. per day in 1838 to a peak of 0.9 lb. in 1871, and that numbers of wheat-eaters in Ireland grew from one-third of the population in 1847-70 to two-thirds in 1900-21.—*Op. cit.*, pp. 613-17. Bellerby *et al.* postulated a continuing increase up to the 1880's, when consumption *per capita* levelled off, to decline only after 1910.—*Op. cit.*, 'Wheat', pp. 1-7.

<sup>3</sup> Fairlie, *loc. cit.*, p. 102 and *passim*.

<sup>4</sup> Hartwell believed (after Drescher) that domestic wheat production kept pace with population growth between 1800 and 1850, thus to imply that in staple terms the standard of living did not deteriorate over this period. Hobsbawm held that there was a lag, and that *per capita* consumption fell from the late eighteenth century until the 1840's and 1850's. This is not the place to discuss either production or consumption in these terms, although this is planned for a future occasion. However, it would certainly appear that a greater increase in domestic output than that suggested by Drescher, or alternatively a negative price and income elasticity of demand for wheat, is necessary to substantiate Hartwell's thesis.—R. M. Hartwell, 'The Rising Standard of Living in England, 1800-1850', *Econ. Hist. Rev.*, 2nd ser. xiii, 1961; Hobsbawm, *loc. cit.*

# A Nineteenth-Century Estate Sale: Wetherby 1824

By R. W. UNWIN

BY the second decade of the nineteenth century, nine-tenths of the 1,448 acres that constituted the Yorkshire manor and township of Wetherby was in the possession of the sixth Duke of Devonshire, whose family had gradually extended their landholding from the seventeenth century onwards. The sale of this estate in 1824—over 1,300 acres, the manorial rights, and more than two hundred business and domestic premises—aroused interest over a wide area. Numerous printed sale catalogues were distributed, and newspapers throughout the county included a complete account of the auction details, being confident that it provided “a fair criterion of the value of landed property in this part of the kingdom.”<sup>1</sup>

This article looks at the possible reasons for the sale, while the voluminous conveyancy material necessitated by such a turnover of property provides an opportunity for reconstruction and analysis for which there can be few parallels in the period. By collating the information in the sale catalogue, land tax returns, commercial directories, newspapers, and documents of title, it is possible to establish fairly accurately the socio-economic structure of Wetherby on the eve of the auction. An attempt is also made to analyse the pattern of ownership and the occupational structure of Wetherby in the late 1820's.

## I

During the French and Napoleonic Wars, agriculture in England was, in general, prosperous with the inflation of farmers' profits and landlords' rents. In the decade after the ending of the war, there were a number of economic crises, the mild recovery in prices during 1816–18 not being sustained. Towards the end of 1819 cereal prices began to fall and continued to do so until they reached their nadir in 1822, exacerbated in the short run by the resumption of gold payments. The worst fears of depression were realized, and petitions of distress poured into the House of Commons from all over the country. The *Reports* of the Select Committees on Agricultural Distress in 1820–2 leave no doubt about the widespread distress among farmers and the difficulties of estate stewards during the period of adjustment following the wars. Worst hit were those tenants with leases contracted before 1812, who could continue to farm their lands only by piling up arrears of rent or eating into reserves. On the other hand, tenants with annual contracts could receive immediate relief by a reduction in rents which might placate the farmers or keep them in occupation. With falling corn prices and a crisis among dairy- and stock-farmers,

<sup>1</sup> *Leeds Intelligencer*, 21 Oct. 1824. This article is based partly on work carried out by members of the Wetherby Tutorial Class—organized jointly by the W.E.A. and the Department of Adult Education of Leeds University—to whom the author, as tutor, acknowledges his appreciation. Professor B. Jennings offered helpful criticism in the early stages of the research.

the early 1820's were an extraordinarily difficult period, and some landlords were obliged to make considerable permanent reductions in rentals.<sup>1</sup>

It is not possible to assess exactly the effects of such adverse conditions on the numerous market-towns up and down the country, but concerned as they were in the supply of goods to agricultural hinterlands where purchasing power was depleted, and marketing produce at falling prices, it would not be difficult to understand why there could be considerable distress. It is not inconceivable that it was distress in the Wetherby district, coupled with the knowledge that rents had been abated in many places by up to 30 per cent, which prompted the inhabitants of the township to petition the Duke of Devonshire in 1823 for a reduction and more equitable distribution of an annual rental which had been fixed in 1806. At the time of the sale the story of the petition appeared in many Yorkshire newspapers, and it was widely rumoured that the sixth Duke had been so incensed by the action of his tenants that it had been decided to sell the estate.<sup>2</sup>

Whether the Duke of Devonshire and his agent were motivated solely by the petition from the inhabitants of Wetherby cannot be readily substantiated, since the first-hand opinions of the *dramatis personae* have not so far come to light. One Yorkshire newspaper ascribed the decision to sell Wetherby to another factor, namely that the sixth Duke hoped to consolidate his Derbyshire estates by the purchase of the Marquis of Ormonde's property which was put under the hammer at about the same time.<sup>3</sup> The Devonshire agent certainly attended the sale of the Ormonde estate less than a month after the sale of Wetherby, but it seems just as likely that the proceeds from the Yorkshire estate would have been used to help pay for the improvements which the architect Wyattville was carrying out at Chatsworth—the Lodges and Entrance Gates, the Drive, and the North Wing, dominated by the Theatre Tower.<sup>4</sup> However, it is also clear that, if it was necessary to put real estate on the market, the need was not sufficiently acute that other West Riding property had to be sold—a search through the Registry of Deeds revealed that other Devonshire lands were not sold at the same time as Wetherby.

The motives behind the sale are open for discussion; what is certain is that its timing could scarcely have been more opportune. On 21 October 1824, the *Leeds Intelligencer* reported:

It is a well known fact, that the whole of this valuable property was offered to a distinguished landholder in this county for the sum of £121,000. A few days prior to the sale taking place, a gentleman of the neighbourhood of Wetherby offered £150,000 for it, but at that time the Duke's solicitor thought proper to decline taking it. From the result of the whole, it is shown that, if a few enterpris-

<sup>1</sup> H. G. Hunt, 'Agricultural Rent in South East England 1788-1825', *Agric. Hist. Rev.*, vii, pt 2, p. 103.

<sup>2</sup> *Leeds Intelligencer*, 14 Oct. 1824; *Leeds Mercury*, 16 Oct. 1824; *York Courant*, 19 Oct. 1824; *York Herald*, 16 Oct. 1824.

<sup>3</sup> *York Chronicle*, 21 Oct. 1824.

<sup>4</sup> *The Gentleman's Magazine*, xciv, 1824, p. 637. "The agent of the Duke of Devonshire was the bidder at £215,000... (for the Ormonde estate) purchased by Mr Arkwright."

ing gentlemen had purchased this property on the liberal terms first held out, what an amazing sum might have been realised.

The circumstances which led to the refusal of an offer 25 per cent above the original asking price, and the final realization of over £168,000, clearly require explanation.

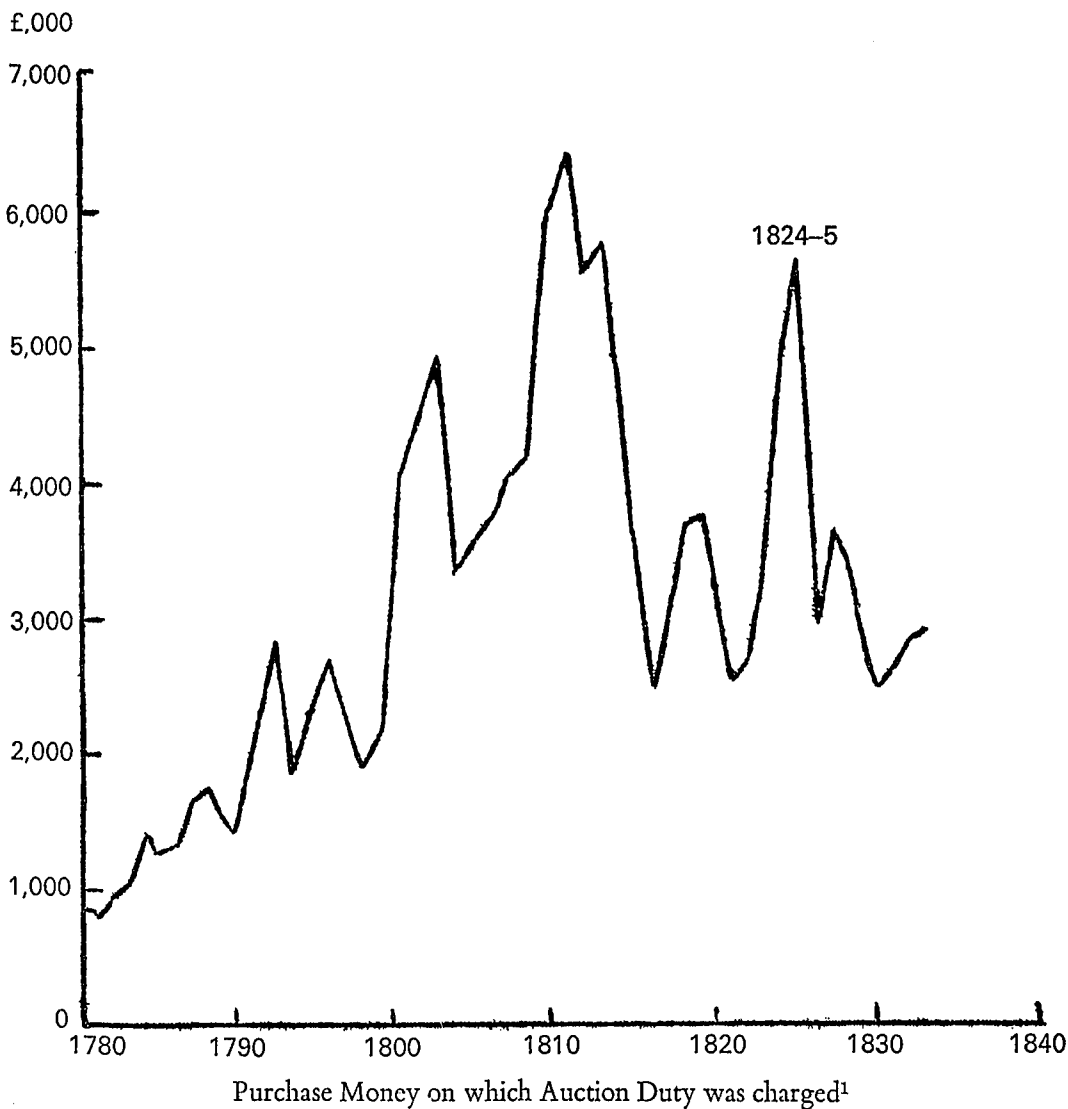
In the absence of a national land-market, how could the agents and solicitors acting on behalf of a large landowner decide on the most favourable time to sell an estate? Reports in local or county newspapers on commodity or stock-prices were commonplace by the early nineteenth century, but could never produce the ruling price of land—it did not exist. The value of land depends partly on a variety of local qualities—geology, situation, climate, and accessibility among others—and partly on the variety of tastes and interests of prospective purchasers. Nevertheless, general influences could produce effects on the level of land transfers, and such influences certainly figured in the press. By consulting the details of sale auctions the relation between the figures of purchase money and the actual quantities of property sold could be calculated. The upward movement in the number of years' purchase during the period 1792–1811 was clearly discernible in a table produced by Arthur Young. Other sources also indicate a higher rate than usual during the Napoleonic Wars, of up to thirty-five years' purchase of existing rents at a time when rents were expected to go on rising.<sup>1</sup> At times of uncertainty demand-determined prices for land tend to fall, for example in the years which immediately followed the Napoleonic Wars. Although the depression was beginning to lift in manufacturing circles by 1820, and merchants were predicting a period of prosperity, agriculture and the land-market remained in the doldrums until at least 1823. Was it such conditions which meant that the original asking price for the Wetherby estate of £121,000 could not be obtained?

The refusal of an offer of £150,000 a few months later is more easily explained. Some economic historians consider the years 1824–5 to have witnessed the first truly modern cyclical boom, the culmination of the upswing which had been taking place in some branches of the economy after 1821. The features are well known: a stock-market boom; a peak of industrial activity; a wave of speculation; and a burst of real-estate investment and domestic building. As early as February 1824 the *Yorkshire Gazette* cautioned that speculation was likely to raise the value of land to an artificially high level, "a state, we conceive, equally remote from the high prices of former years, and the depression of the last years." The continued advance in land prices no doubt weighed heavily with those who advised that the offer of £150,000 for the Wetherby estate should not be accepted, but that preparations should continue for the public auction. Probably the most effective way to find out the market value of an estate was to sell it publicly, but with a reserve price based on a more or less accepted idea of the value. If necessary, it could then be bought in at a price just above the final bid, and then sold by private contract.<sup>2</sup>

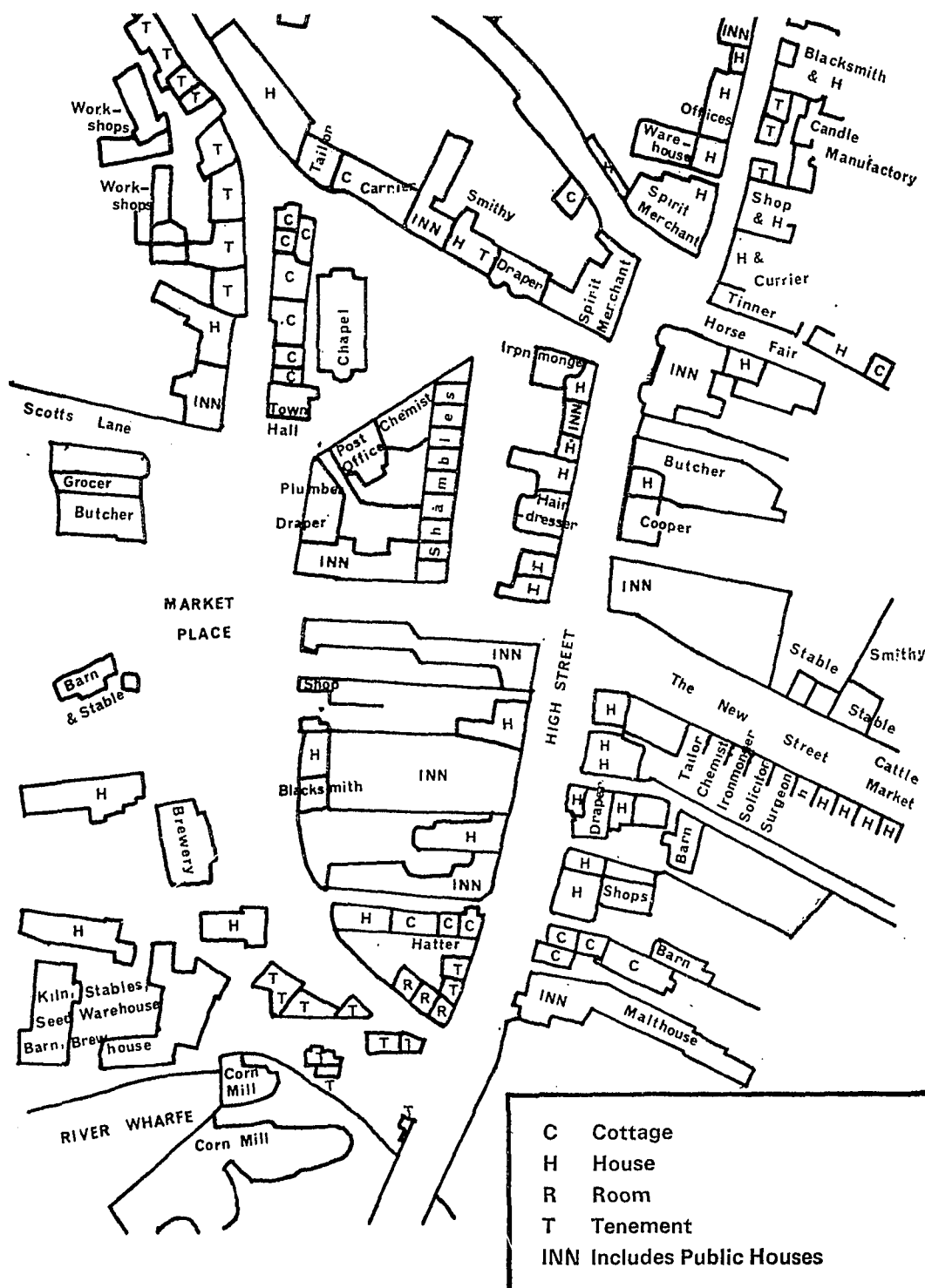
<sup>1</sup> F. M. L. Thompson, 'The Land Market in the Nineteenth Century', *Oxford Economic Papers*, ix, 1957, pp. 285–300. Reprinted in *Essays in Agrarian History*, II, 1968, p. 36.

<sup>2</sup> *Ibid.*, p. 37.

As there was no official compulsory registration of all land sales in this period, it is only by examining the yield figures from the auction duty that we can obtain a rough guide to the purchase-money laid out on land and property. From the figures produced by the Excise Inquiry of 1835 it is clear that the sale of Wetherby occurred in a peak year. Although property other than land was included, it seems highly probable that at least 90 per cent of the yield figures represented sales of real estate. It must be emphasized that the figures do not provide a guide to the acreage of land which had been put under the hammer, although they do indicate the fluctuations in activity in one section of the real-estate market. The timing of the sale of Wetherby and its successful outcome for the vendor tend to support the argument that it



<sup>1</sup>*Ibid.*, p. 34.



Reconstruction of the market and posting town of Wetherby, 1824

was demand which called the tune, and that demand fluctuated broadly with economic conditions and expectations.

## II

Since the investment propensity of prospective purchasers was determined partly by the general level of activity, and partly by the opportunities likely to accrue from the ownership of property in a particular locality, it is pertinent to ask what Wetherby seemed to offer in the 1820's. The printed specifications for the sale of the Devonshire estate naturally gave prominence to the favourable position and site of Wetherby as a market, coaching, and posting town on the Great North Road, and emphasized the improvements which had been effected or were contemplated in the local turnpike roads to Leeds and York, and for the widening of the stone bridge over the river Wharfe.<sup>1</sup>

Small country towns tended to grow in importance in the late eighteenth and early nineteenth centuries, as the reliance upon fairs or itinerant pack-men waned. Those towns which had survived from the numerous market centres of earlier times were presented with opportunities to consolidate their position as major service-centres for agricultural hinterlands. Standing in the midst of a great area of fertile land, Wetherby was a natural centre for the marketing of agricultural produce. The cattle-market was situated at the top of New Street, but animals brought into the town for the Thursday market were penned up in the adjacent streets and lanes. In addition, at certain times of the year an important quantity of droving traffic passed through the town using the two river crossings—the bridge in Wetherby, and St Helen's ford a little below the town.

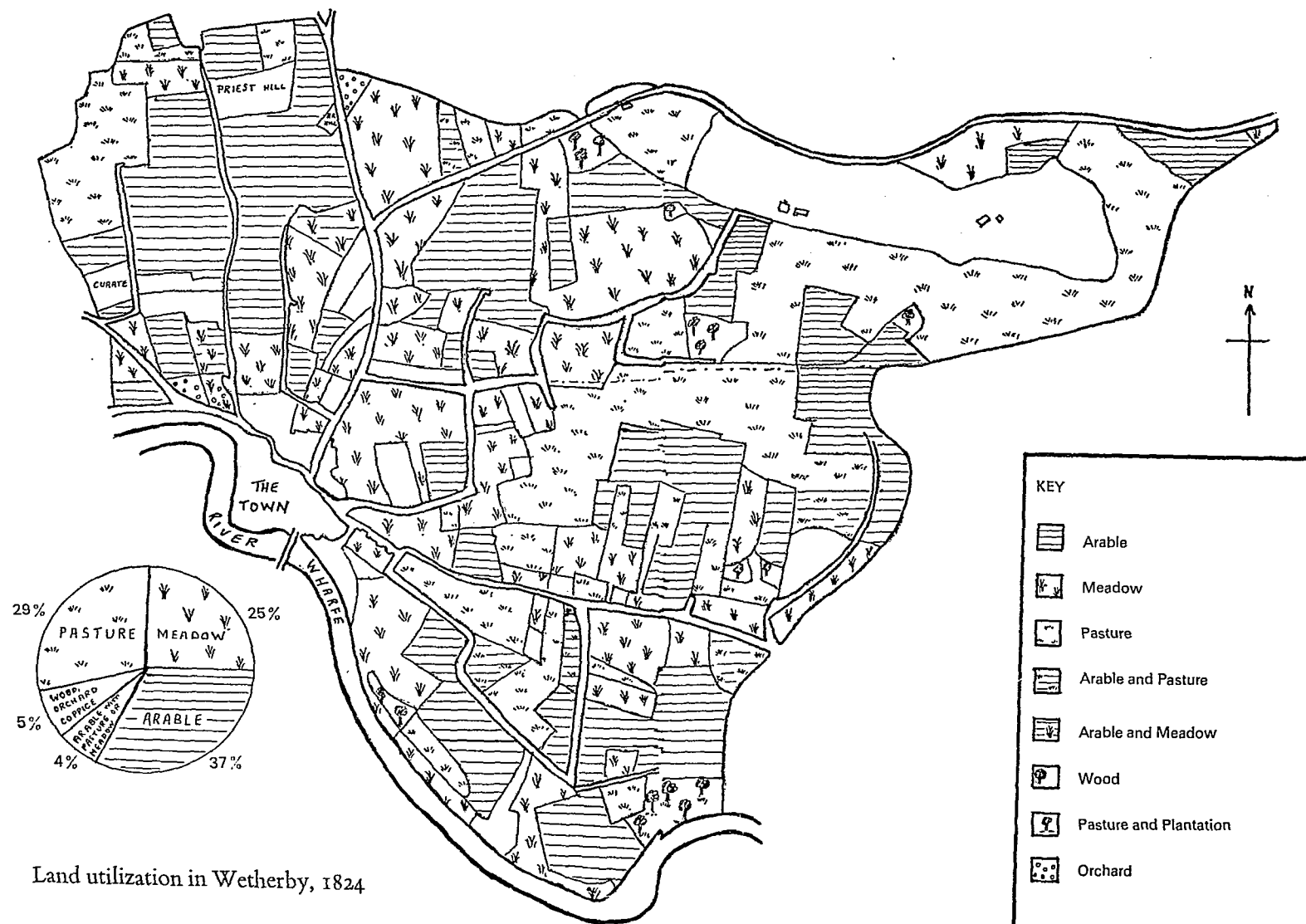
Unfortunately, few written impressions seem to have been left by those passing through the town, attending its Thursday market and two annual fairs, or presiding—or presided over—at the Quarter Sessions which were held at Wetherby until the 1830's. Topographers and travellers usually commented unfavourably on the town itself, but were more impressed by its natural environs in lower Wharfedale. At the time of the sale, the *Leeds Intelligencer* emphasized the absence of visible signs of progress at a well-frequented market and posting town:

The inhabitants of Wetherby, judging from the dilapidated state of their houses, a stranger would conclude, had been excluded from the rest of the world for the last fifty years, or that a law had been past [*sic*] to prohibit both the carpenter and the bricklayer from coming amongst them, so little of their handy work is in this place visible, if we except the new street lately erected by his Grace the Duke of Devonshire.<sup>2</sup>

The sale catalogue and contemporary commercial directories tended to stress the improvements upon which the ducal proprietor had embarked after 1811. Ten new

<sup>1</sup> *Yorkshire The Whole Town of Wetherby . . . Specifications*. Subsequently referred to as *Specifications*.

<sup>2</sup> *Leeds Intelligencer*, 14 Oct. 1824.



shambles or shops had been erected to the east of the market place; a terrace of twenty-five smaller stone houses had been built in New Street on the site of old buildings which had been demolished; and five sites in the town had been let on building leases at ground rents.<sup>1</sup>

By 1824 the Duke of Devonshire had acquired every piece of land in the town itself, with the exception of the property of a farmer in New Street and an innkeeper in Back Lane. In listing the existing property for sale in Wetherby, the two post houses, three inns, and seven public houses understandably figured prominently, as did the brewery and corn-mills. We have to look at the terminology of the sale catalogue for clues as to the type and condition of the various properties. Only seven houses—rented by the more prosperous tradesmen—merited the description “capital”; for the rest there was an assortment of eighty houses, forty cottages, and about thirty tenements. In addition, there were approximately forty shops and workshops, usually attached to the living accommodation. Within the town area there was a variety of barns and outbuildings—the *Plan of the Town of Wetherby* printed for the 1824 sale shows seventy stables, twenty cowhouses, eight pigsties, and one poultry house adjoining the properties in the High Street and the Market Place alone. The physical proximity of the human and animal populations of Wetherby meant that constant efforts had to be made to impose some restriction on the location of pigsties, pigeon-cotes, and dunghills, the entries in the court-leet records providing a testimony to these recurrent problems<sup>2</sup> The rights of the manor, which was co-extensive with the township, were included in the sale: the courts baron and leet; the tolls of the fairs; the stallage and piccage of the markets; and the rents and profits of the ten shambles.<sup>3</sup>

Although a few acres on the outskirts of the town had not been acquired by the Devonshire family, more than 1,300 acres of land were also put under the hammer. Eastward of the Pennines the characteristic scenery is that of a rich agricultural land in a belt of magnesian limestone extending in the West Riding from Conisborough to Wetherby, the escarpment becoming less marked to the north, and sloping eastwards into the wider plain of the Vale of York. In general, the soils in the township of Wetherby, being derived from a mixture of magnesian limestone, marl, and boulder clay, are fertile and easily worked. If any distinction must be made it would be between the western parts of the township, which included the limestone quarries whence the inhabitants obtained their principal building material, and the eastern parts of the township with its greater concentration of alluvium.<sup>4</sup> In the early nineteenth century the fields to the west of the Great North Road—West Field and Barley Field—extended from the Kirk Deighton boundary in the north to Town End Close in the south, and included a higher proportion of arable land than other parts of the manor. Hall Field on the east of the Great North Road extended from the old York Road in the north to a line parallel with the southern boundary of the Cemetery in the south, and had almost equal proportions of arable

<sup>1</sup> *Specifications*.

<sup>2</sup> Leeds Central Library Archives. Manor of Wetherby Records, DB 98/2.

<sup>3</sup> *Specifications*.

<sup>4</sup> P. Kendall & H. Wroot, *Geology of Yorkshire*, III, 1924, p. 883.

and meadow. Further east in Swinnow the proportion of pasture increased, while Hurthwaite in the southern part of the manor had roughly equal proportions of arable and grass. The land use of the Devonshire estate in 1824 can be classified under a number of categories:

| <i>Land use</i> | <i>Acreage</i> | <i>Percentage of Estate<sup>1</sup></i> |
|-----------------|----------------|-----------------------------------------|
| Arable          | 486            | 40                                      |
| Meadow          | 336            | 27                                      |
| Pasture         | 348            | 28                                      |
| Rough pasture   | 23             | 2                                       |
| Woodland        | 22             | 2                                       |
| Orchard         | 15             | 1                                       |
|                 | 1,230          | 100                                     |

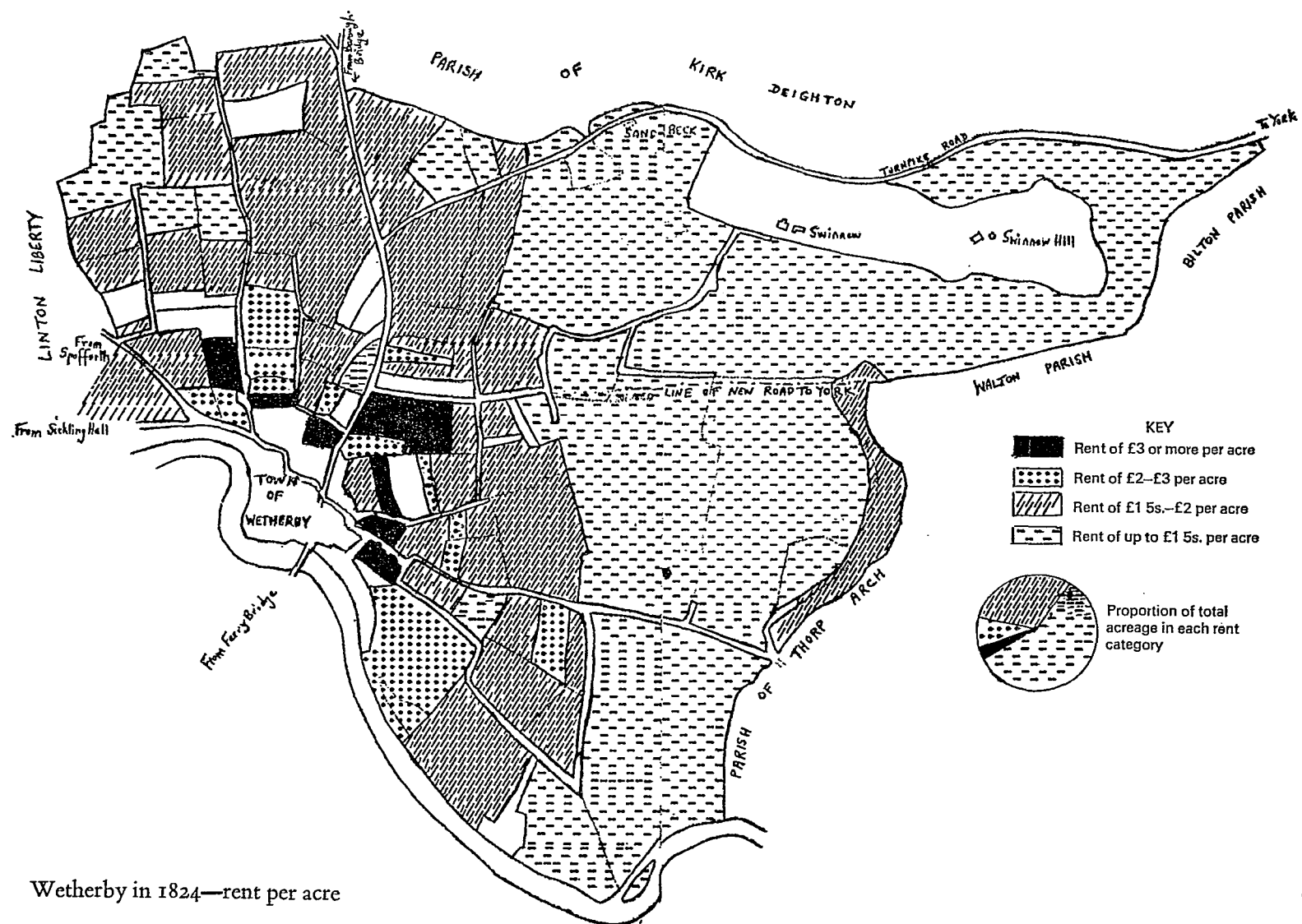
The estimated value of the whole estate was £5,000 per annum, and for the purpose of the 1824 sale it was divided up into 170 lots. All the lots, with the exception of the five on building leases at ground rent, were to have vacant possession at Lady Day 1825, the yearly tenants receiving notice to quit by that date. When the tenants petitioned the Duke of Devonshire in 1823, the equalization of rents seems to have been as much their objective as a general reduction.<sup>2</sup> It is difficult to analyse the rents of the town properties accurately from the sale specifications, since a number of dwellings, inns, trading premises, and outbuildings might be included in one sale lot for which a total rental was stated. In the fields of the township the rents per acre varied from over £6 to as low as 6s. Eleven sale lots had rents per acre in excess of £2 10s.: all were small plots, not more than 7 acres each, in close proximity to the town. In general, proximity to the town appears to have been a major determinant in the level of rents, decreasing with distance from the centre of Wetherby, although there were a few exceptions. Over half the land on the Devonshire estate was rented at 25s. or less per acre, including much of the eastern part of the township; one-third was rented at rates between 26s. and £2 per acre; about one-twelfth at levels between £2 and £3; and about one-fortieth of the land was valued at over £3 or more per acre.<sup>3</sup> It seems that the land holdings were not compact, an estate memorandum recording that "the property has always been let in scattered lots all over the manor and not in compact Farms as is usually the case."<sup>4</sup>

### III

The essential profile and occupational structure of a coaching and posting town—which also served as a market and supply centre for an agricultural hinterland—may be discerned by the use of contemporary commercial directories; and by collating such information with the details of the sale catalogue and the land-tax

<sup>1</sup> Specifications.    <sup>2</sup> *Leeds Intelligencer*, 14 Oct. 1824.    <sup>3</sup> Specifications.

<sup>4</sup> Chatsworth MSS. L/45/106. Abstracts of title and copies of opinions.



returns of 1824-5, it is possible to analyse the socio-economic make-up of Wetherby.<sup>1</sup> Provision had been made in 1798 for landowners to redeem their annual land

| Occupation                                 | No. in group | Land tax | Land tax | Acreage (tenants) |    |    |
|--------------------------------------------|--------------|----------|----------|-------------------|----|----|
|                                            |              | —owners  | —tenants | a.                | r. | p. |
|                                            |              | £ s. d.  | £ s. d.  |                   |    |    |
| Innkeepers                                 | 12           | 14 2     | 33 0 10  | 634               | 3  | 7  |
| Brewers                                    | 1            | 1 18 8   | 3 14 5   | 71                | 1  | 16 |
| Corn millers                               | 2            |          | 8 5 10   | 61                | 3  | 12 |
| Provision dealers                          | 13           | 1 17 5   | 16 7 4   | 187               | 1  | 3  |
| Landholders/Farmers                        | 10           | 4 7 0    | 11 8 0   | 257               | 2  | 6  |
| Craftsmen                                  | 20           |          | 8 15 2   | 75                | 3  | 28 |
| Dealers (non-provision)                    | 8            |          | 1 15 1   |                   |    |    |
| Services                                   | 8            |          | 3 11 10  | 35                | 0  | 27 |
| Professions                                | 8            | 12 9     | 2 12 8   | 13                | 2  | 23 |
| No stated occupation<br>(land-tax paid)    | 28           | 19 6     | 6 6 5    | 15                | 0  | 39 |
| No stated occupation<br>(no land-tax paid) | 87           |          |          |                   |    |    |
|                                            | 197          | £10 9 6  | £95 17 7 | 1,352             | 3  | 1  |

tax with a lump sum of fifteen years' purchase, and to make an accurate analysis of the different occupational groups, the redeemed or "exonerated" sums have been included. Of the £9 18s. land-tax assessment outstanding in the total assessment of £116 5s. 1d. for the township of Wetherby, the sum of £8 can be accounted for by the officer of the Excise. Included in the total of 1,352 acres 3 roods 1 perch are the 80 acres which made up the tenant farms at Swinnow, which were owned by Richard Fountayne Wilson of Melton on the Hill and Ingmanthorpe. Of the "missing" 96 acres which would give a township and manor total of 1,448 acres, it is possible to account for 22 acres in hand at the time of the sale; the area of the town; and the few acres owned by other proprietors.

Of the township's total land-tax assessment the innkeepers as a group accounted for almost 30 per cent; while they were tenants of four-tenths of the total acreage. With the exception of the Fox, all the inns in Wetherby belonged to the Devonshire estate, and only the Devonshire Arms, "a substantial New Stone-built House" was in hand at the time of the 1824 sale. A distinction between the two posting houses, the Swan and Talbot and the Angel, "a large brick-built house" on the one hand, and the remaining tenant innkeepers on the other, seems justified: between them the two posting house tenants rented 462 acres 4 perches, and were

<sup>1</sup> E. Baines, *History, Directory and Gazetteer of the County of York*, Leeds, 1822; West Yorkshire Record Office, Wakefield. Land Tax Duplicate Returns, Claro Wapentake.



assessed in land-tax for £21 3s. 10d. There were extensive facilities attached to the inns, obviously associated with their particular positions and functions. Altogether the property of the innkeeper tenants included ten granaries, seven haylofts, seven cowhouses, three pigsties, and one dovecote, while there was a dairy at the Red Lion. There was individual stabling for approximately 170 horses together with "open" and other stabling—about 80 per cent of the town's total—but only the Devonshire Arms and the two posting houses had specifically assigned accommodation for carriages. In only one instance, at the Angel, was there a smithy and shoeing shop. Six of the inns had a "soldiers' room", and on the first floor of the Devonshire Arms there was an assembly room. Only two inns, the Blue Boar and Crown, included a brewhouse, and at the latter a malthouse was specifically listed.<sup>1</sup>

Providing for the needs of many of the town's inns in the early nineteenth century was the brewery in the Market Place, of which Gregory Rhodes was the tenant. As a common brewer he brewed only for sale to publicans and private customers away from his brewery. As tenant of the Duke of Devonshire at the time of the sale, Rhodes occupied "all that newly erected capital Dwelling House and Brewery" at an annual ground rent of £26 10s., a malthouse behind the George and Dragon, and over 70 acres of land. In addition, as owner-occupiers the Rhodes family were assessed at £1 18s. 8d. per annum in land-tax, principally for their property at Priest Hill. Apart from brewing, the main industry in Wetherby was the milling of corn. The property rented by John Greenwood and David Farrer for £200 per annum included two water-mills, dressing-machines, a seed warehouse, barn, cowhouse, and brewhouse. The dwelling-house which went with the property was substantial, including three parlours and six bedchambers. In addition, the partners rented over 60 acres. Taken together the brewers and corn-millers in Wetherby paid over 10 per cent of the township's land-tax assessment and were the occupiers of about one-tenth of the acreage in 1824.

The thirteen provision dealers—five grocers, four butchers, two spirit merchants, one baker and one tallow chandler—were men of some substance in Wetherby: altogether they were assessed for about 15 per cent of the land-tax of the township, and they rented about one-eighth of the acreage. Within this category, the butchers were assessed at £8 os. 4d. in land-tax and rented over 100 acres. William Hill, the only owner-occupier among the butchers, rented a shop and slaughter-house, as did William Powell, who was also described as a ham factor. The grocers paid £2 14s. in land-tax, but only two of them rented land—about 21 acres. The most substantial grocer rented a "capital house and shop" in the Market Place, besides being the owner of property at Hill Top which was leased out as an "academy." The spirit merchants, who were assessed at £4 1s. 10d. in land-tax, each rented a shop, warehouse and dwelling-house in the High Street. The tallow chandler also rented a house in the High Street, together with a shop, candle manufactory, barn, cowhouse, pigsty, and granary. In addition to 36 acres, the baker rented a small house in New Street, and a barn and stable in the Market Place. The "non-pro-

<sup>1</sup> *Specifications.*

vision" dealers were of less substance than the provision dealers. This group, three drapers, two tailors, two ironmongers, and one hatter, rented no land, and were assessed for land-tax at only £1 15s. 1d., or about 1.5 per cent of the township's total. The property they rented included nine houses, two shops, two warehouses, two stables, one barn, one workshop, one cowhouse, and one pigsty.

The twenty craftsmen—four saddlers, four carpenters, three blacksmiths, two shoemakers, together with a plumber, cooper, skinner, currier, house painter, tinner, and clockmaker—were all tenants on the Devonshire estate. Altogether they were assessed at £8 15s. 2d. in land-tax, about 7 per cent of the township's total, and rented 75 acres 3 roods 28 perches of land, or about one-twentieth of the acreage. The property they rented also included fifteen houses, two cottages, two tenements, eight workshops, six cowhouses, six stables, four shops, three smithies, three barns, together with one each of the following: granary, tanpit, timber loft, warehouse, drying shed, dovecote, apiary, and pigsty. The blacksmiths, shoemakers, tinner, and clockmaker rented no land, and these seven craftsmen were assessed at only £1 3s. 10d. for land-tax. The most substantial individual craftsmen seem to have been a carpenter and a plumber.

About 3 per cent of the township's land-tax was assessed on those concerned with the provision of services, and they rented about one-fortieth of the land. In this category is included the Post Office, which was described in the sale catalogue as being "in excellent repair." The professions also accounted for about 3 per cent of the land-tax, but the total acreage held by this group, which was made up of two "academies," two surgeons, three solicitors, and the excise officer, amounted to only some 13 acres.<sup>1</sup>

From the foregoing analysis it is clear that a number of difficulties may arise from the nature of occupations in the eighteenth and early nineteenth centuries: many innkeepers, tradesmen, and small manufacturers were also farmers or smallholders, and the distinction between a craft occupation and agriculture was not always sharply delineated. There are also possible pitfalls in a study of the socio-economic structure of a single community on the basis of land-tax and property records: it would be most unusual if the interests of all occupational groups were confined within the boundaries of one parish or township. Such difficulties are apparent in the case of those whose livelihood was largely derived from the land. Owners and tenants sometimes had land in more than one parish, and it is therefore unwise to draw very firm lines between the different categories since a small man in one district might have been a large one in another. Similarly, an owner in one parish may appear as a tenant in another—or even in the same parish—and it is not always easy to determine how large a proportion of both owners and tenants were paying in more than one parish.<sup>2</sup>

<sup>1</sup> *Ibid.*

<sup>2</sup> For problems in using the Land Tax returns see G. E. Mingay, 'The Land Tax Assessments and the Small Landowner', *Econ. Hist. Rev.*, 2nd ser., xvii, 1964, pp. 381-8; J. Martin, 'Landownership and the Land Tax Returns', *Agric. Hist. Rev.*, xiv, pt 2, 1966, pp. 96-103.

A notable omission from contemporary commercial directories was specific reference to the farming community in Wetherby, although the number of "pure" farmers was very small indeed. For the purpose of our analysis of the 1820's the group of landholders and farmers is made up of those who owned or rented land, whose property seems indicative of farming interests, and who were not otherwise classified either in commercial directories, the sale catalogue, or in other records, for example conveyancy documents. Of the ten occupiers included in this group, Richard Fountayne Wilson of Melton on the Hill and Ingmanthorpe was the most substantial. As an owner he was assessed for land-tax at £4 7s., principally for the farms at Swinnow, which were then in hand. In addition, he rented 23 acres on the Devonshire estate for which land-tax was assessed at 18s. 6d. The other owner-occupier in this group was William Grafton, who paid 4s. 11d. land-tax for his property near the cattle-market in New Street. He also rented 48 acres, for which land-tax was assessed at £2, and included a barn, cowhouse, stable, and farmyard. Although the latter term was used only once, each of the tenants in this group rented cowhouses and stables, besides a total of 105 acres. Pigsties and poultry houses were each listed once, and one holding included a calf house, paddock, and "a bath and dressing-room" near the river Wharfe.<sup>1</sup>

Of the remaining inhabitants of Wetherby who were assessed for land-tax in 1824 it seems that twenty-eight were tenants on the Devonshire estate. The total rented property included eighteen houses, three cottages, four stables, one paddock, one granary, and one pigsty. Although land was rented in three instances, there was no indication of associated farming, craft, or other activity. Nine of the inhabitants in this group were either spinsters or widows.

At the lower end of the social ladder there are likely to be fewer misrepresentations in a single township or parish study, since the activities of the poor are more likely to be confined to one district. A reconstruction of a community based on commercial directories or land-tax returns alone is open to criticism on the grounds that the poorer inhabitants will scarcely figure, although numerically they may well constitute the majority. The use of other records can do much to redress the balance. Scattered through the various lots listed in the sale catalogue for Wetherby in 1824 were a number of properties which were almost certainly inhabited by the poorer sections of the township's community. Altogether eighty-seven tenants were named whose holdings were not assessed for land-tax: their dwellings included thirty-nine tenements, of which one was thatched; twenty-nine cottages, of which four were thatched; eleven small houses; seven "low rooms," and one shop. Many of these properties were situated on Chapel Hill, in Back Lane, West Gate, and in Horse Fair; and immediately north of the bridge at the southern entrance into the Market Place. Of these inhabitants, twenty-two were women, no doubt many of them widows. Not one of the eighty-seven tenants rented land, although four small gardens were listed. The outbuildings of these properties were few in total: three workshops, two barns, two pigsties, and one cowhouse. The properties on the

<sup>1</sup> *Specifications.*

Devonshire estate in the hands of the overseers of the poor included the poor house in West Gate, together with six tenements and four cottages.<sup>1</sup>

Descriptions of the inhabitants of Wetherby at the time of the sale used several terms: "landholders of every description"; "the Respectable Tenants in the town"; "Wetherby gentlemen"; "the poorer and middling part of the people"; "the lower orders of the inhabitants."<sup>2</sup> Clearly, in attempting to interpret such terms it is essential to cut across the occupational classifications we have so far considered—there were rich and poor innkeepers as well as craftsmen or provision dealers. The collation of a variety of records permits a tentative reconstruction of the "pecking order" in Wetherby in the 1820's:

| Name                        | Occupation       | Land Tax        |          | Land  |    |    |
|-----------------------------|------------------|-----------------|----------|-------|----|----|
|                             |                  | Owner           | Tenant   | a.    | r. | p. |
|                             |                  | £ s. d.         | £ s. d.  |       |    |    |
| R. F. Wilson                | Landowner        | 4 2 1           | 18 6     | 103   | 3  | 34 |
| G. & Q. Rhodes              | Brewers          | 1 18 8          | 3 14 5   | 71    | 1  | 16 |
| W. Hill                     | Butcher          | 1 4 6           | 1 6 7    | 13    | 3  | 5  |
| J. Pullein                  | Grocer           | 12 11           | 1 8 6    | 9     | 1  | 24 |
|                             |                  | (non-occupying) |          |       |    |    |
| Ann Hargreaves              | Innkeeper        | 6 10            | 4 3 4    | 76    | 0  | 38 |
| Jane Tiplady                | Innkeeper        | 4 11            | 2 7 6    | 32    | 3  | 23 |
| W. Grafton                  | Farmer           | 4 11            | 2 0 0    | 48    | 1  | 22 |
| J. Clemishaw                | Innkeeper        |                 | 12 0 10  | 260   | 2  | 25 |
| W. Hind                     | Innkeeper        |                 | 9 3 0    | 201   | 1  | 19 |
| J. Greenwood &<br>D. Farrer | Corn millers     |                 | 8 5 10   | 61    | 3  | 12 |
| W. Powell                   | Butcher          |                 | 3 18 0   | 60    | 0  | 20 |
| Clemishaw & Son             | Spirit merchants |                 | 2 8 2    |       |    |    |
| D. Wiggins                  | Baker            |                 | 1 19 8   | 36    | 2  | 36 |
| S. Slater                   | Farmer           |                 | 1 15 6   | 22    | 1  | 30 |
| S. Wiggins                  | Farmer           |                 | 1 12 2   | 22    | 1  | 9  |
| J. Britain                  | Spirit merchant  |                 | 1 13 8   | 14    | 0  | 9  |
|                             |                  | £8 14 10        | £58 15 8 | 1,035 | 2  | 2  |

Of the township's total land-tax assessment, the eighteen proprietors named above were assessed for almost 60 per cent; of the total acreage they were tenants or owners of over seven-tenths. The essential profile of Wetherby as a market, posting, and coaching town on the Great North Road is clearly revealed. The property of Richard Fountayne Wilson and the Rhodes family in Wetherby represented only part of their total activities and sources of income, and it would seem possible that a careful scrutiny among documents of title relating to neighbouring townships would show that others among "the top of the town" had extra-township interests.

<sup>1</sup> *Ibid.*

<sup>2</sup> *Leeds Intelligencer*, 14 Oct. 1824.

It might also become necessary to include others among the leading proprietors if any consideration is to be given to the purchasing propensity of Wetherby's inhabitants, undoubtedly an important factor when the town was put under the hammer.<sup>1</sup>

## IV

On 8 October 1824, the London auctioneer arrived in Wetherby, and anxiety mounted among the inhabitants as numerous strangers appeared in the town. Rumours that the sale was to be a "select" meeting with admission by ticket only can have done little to calm the charged atmosphere, although in the event such fears proved to be groundless. The Town Hall, a comparatively small building in the Market Place, was full when the auctioneer and the Duke's solicitor arrived at twelve o'clock on 11 October.

From the tribune, the auctioneer opened with some remarks concerning the cost of conveyancy, to the effect that the Duke's solicitor, in order to facilitate the purchase of the smaller lots, had agreed to charge only 15 guineas for the legal work necessary for the respective vendees.<sup>2</sup> The auctioneer then proceeded to read the conditions of the sale: if disputes arose as to the highest bidder, the lot in question was to be resold; all purchasers were to pay a deposit of £20 in every £100 at the time of the sale and the remainder by Lady Day 1825, after which the vendor would receive 5 per cent interest on all outstanding sums; that the purchasers should pay the auction duty of 7d. in the pound; that boundary disputes after the sale would be referred to a referee; and that failure to comply with the sale conditions would mean the forfeiture of the deposit money and subsequent resale of the lots in question. The purchasers were to take over responsibility for the land-tax apportioned to the respective property, and, on the question of tithe, attempts had been made to establish which parcels of land were liable to a modus or annual payment "in lieu of Tythe Hay on the old Inclosures." Other tithe would also continue to be paid, to which all land in the township was subject, "with the Occasional exception of the Lands called Swinnow Farm when the same are in the Occupation of the owner." The timber and underwood on the estate was to be taken at a valuation, also to be completed before Lady Day 1825.<sup>3</sup> In the case of Wetherby, the motives of the purchasers seem to have been largely of an economic nature, but it is important that other possible considerations should not be entirely overlooked, particularly where non-residents were concerned. Certainly it is clear that competition at the 1824 sale was exceptionally keen, not one lot remaining unsold, and only one being knocked down at the first bidding.<sup>4</sup>

The sale catalogues which have survived from the Wetherby sale invariably include details written in at the time of the purchasers of the 170 lots and the prices paid, information which also appeared in the principal county newspapers. The true position in regard to the purchasers is partly obscured by the private agreements which were obviously made at the time, while in one or two cases the added

<sup>1</sup> R. D. Murphy, 'The Wilsons of Leeds', *National Register of Archives Bulletin*, IV, 1961 (typescript, Leeds).

<sup>2</sup> *Yorkshire Gazette*, 14 Oct. 1824.

<sup>3</sup> *Specifications*.

<sup>4</sup> *Leeds Intelligencer*, 21 Oct. 1824.

entries of purchasers vary from catalogue to catalogue. Nevertheless, when used with care, the catalogues provide a rough guide, which can be collated with documents of title, land-tax returns, and commercial directories. The four days of the sale did not pass without moments of excitement or personal drama. Many of the town's inhabitants belonged to families whose associations with Wetherby stretched back across the generations, and there was some anxiety, which in the event was dispelled by the auctioneer, about the various fixtures in the dwelling-houses and other properties. For the most part, the inhabitants seem to have been particularly eager to purchase the inns, mills, shops, or domestic premises which they had previously rented.

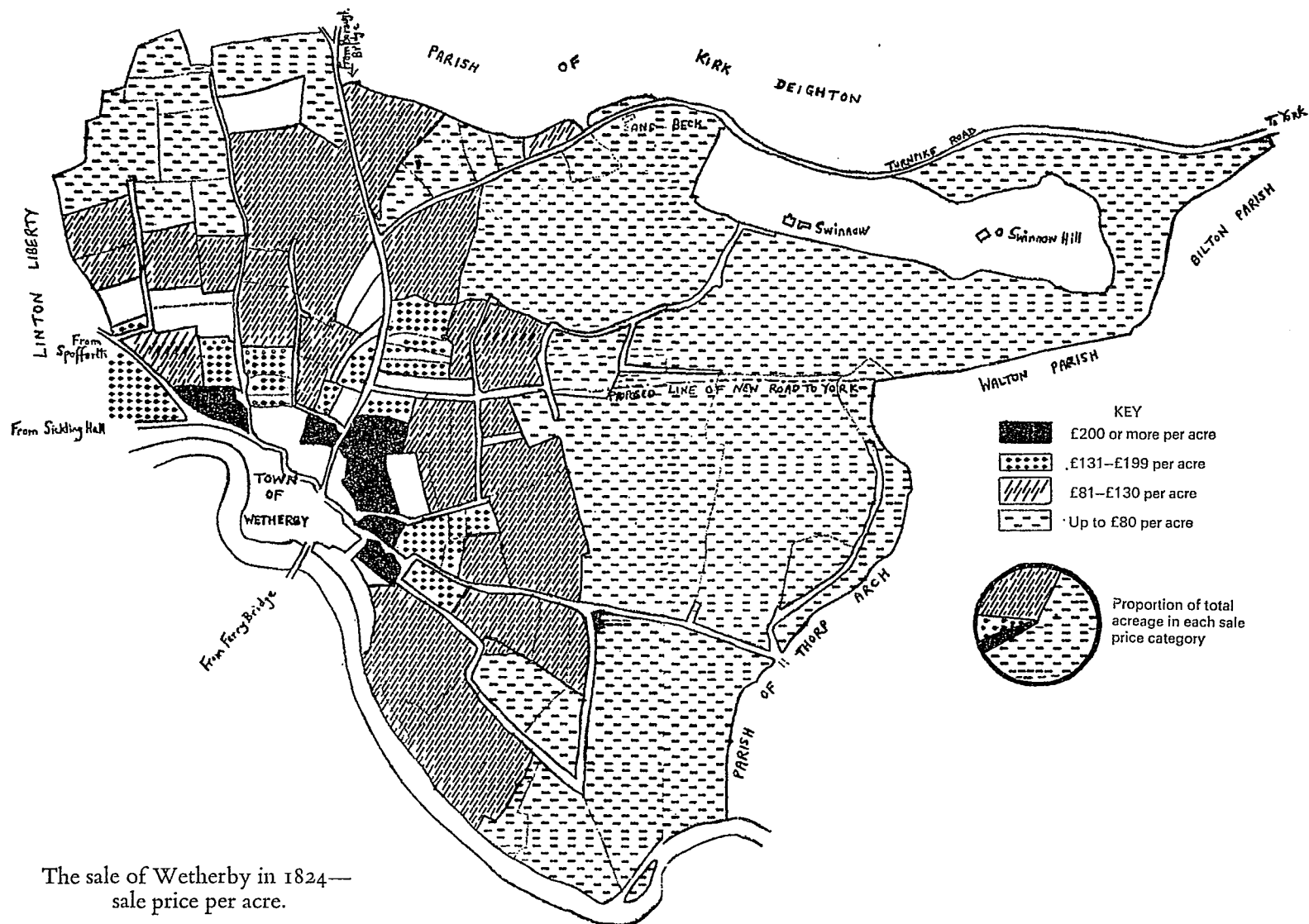
Of the twelve inns sold in 1824, three realized more than £1,500, four were sold for £1,000–£1,500, and five yielded between £500 and £1,000.<sup>1</sup> As a result of the sale the coaching and posting traffic seems to have been more completely monopolized, in the short run at least, by the Clemishaw family: they purchased the Swan and Talbot and continued as tenants of the Angel, which was bought by John Greenwood of Keighley for £2,016, the highest price for an inn. Greenwood, a Keighley cotton manufacturer, was by far the most substantial of the "outside" purchasers. It seems probable that the interest which he took in Wetherby was designed to provide an inheritance for his second son, Edwin. Besides the Angel, he purchased a variety of property in the town and more than 250 acres.

Perhaps most interesting in connection with the inns was the extent to which the Wetherby brewer, Gregory Rhodes, was able to establish tied houses. At the sale Rhodes took the opportunity to purchase five of the inns, together with the house and brewery in the Market Place of which he was already lessee. These inns and the brewery constituted part of the growing interests of the Rhodes family. The will of Gregory Rhodes in 1829 included details of six inns in Wetherby—he purchased the Blue Anchor after the sale—together with three in York, three in Tadcaster, two in Otley, and one each in Langthorpe, Marston, Knaresborough, and Kirk Deighton.<sup>2</sup> In 1824, another common brewer, Thomas Jackson of Green Hammerton also purchased one of the inns in Wetherby, the Red Lion.<sup>3</sup>

The outstanding price paid for property in Wetherby was £8,100 for the two corn-mills, purchased by the occupying tenants, which according to the *York Herald and General Advertiser* was a highly popular outcome: "When the mills were knocked down to Messrs Greenwood and Farrer, the hall resounded with plaudits, and as soon as it was communicated to the populous (*sic*) without doors, it was continued through the streets in a manner highly expressive of the great esteem in which those gentlemen are held."<sup>4</sup> Purchasers among the provision dealers included the two butchers, William Powell and William Hill; the grocer John Pullein; the tallow chandler; and the two spirit merchants. Amongst the group of craftsmen, two saddlers and a family firm of carpenters became owner-occupiers as a result of the sale. Of the professional group, it seems that James Beaumont a sur-

<sup>1</sup> *Ibid.* <sup>2</sup> West Yorkshire Record Office. KK.164. Will of Gregory Rhodes, 11 Nov. 1829.

<sup>3</sup> *Leeds Intelligencer*, 21 Oct. 1824. <sup>4</sup> *York Herald*, *op. cit.*



geon, and Edward Richardson a solicitor, made the most considerable purchases of property.

As far as the properties in the town itself were concerned, the average for the High Street sale lots accorded most closely to the number of years' purchase for the whole town. Altogether, the ninety-two town lots yielded £55,666, which represented thirty-seven years' purchase on the annual rental of £1,500. The development potential of land and property adjacent to the river Wharfe, which had been emphasized in the sale catalogue, may well have been indicated by a much higher figure of number of years' purchase—over sixty years—but there is always the possibility that these lots were under-rented at the time of the sale.<sup>1</sup>

In the case of land it is possible to use two criteria for evaluation, namely the number of years' purchase and the sale price per acre. In all, the seventy-seven sale lots of land around the town produced £107,885, or the exceptionally high figure of fifty-five years' purchase on the annual rental of £1,800. The land adjoining the Great North Road or in close proximity to the town—and hence the most likely to be developed—was sold at a high number of years' purchase. The *York Chronicle and General Advertiser* reported on the differences in sale prices in various parts of the township: "Some lots of land contiguous to the Town, sold as high as from £300 to £500 per acre, some at £200, a good deal at about £100, and one large lot of excellent land containing 306 acres was bought . . . for less than £17,000."<sup>2</sup> An analysis of the sale price per acre shows a more clearly defined pattern of land value than the rent per acre distribution, decreasing according to the distance from the town. The average price for some 1,300 acres was £83, an exceptionally high figure: approximately six-tenths of the land was sold at £80 per acre or less; about one-third at rates between £81 and £130; about one-fifteenth at £131-£199 per acre; and about one-fortieth yielded more than £200 per acre at the sale.<sup>3</sup>

The development possibilities of Mather's Garth on the eastern outskirts of the town were clearly demonstrated by the speed of the bidding to the final sale price of £2,010—for a small lot of less than 4 acres. The established traders of the town were clearly apprehensive that the purchaser of the manor, which included the market rights, might remove its location away from the Market Place to Mather's Garth. Before the sale of the lordship on the last day a discussion took place between a number of the inhabitants of Wetherby and Joseph Green of Bradford on the subject of the removal of the market, since the latter had now secured a favourable site. It was even suggested that a committee might be formed to take over the lordship on behalf of the inhabitants, a proposal which the auctioneer was unwilling to countenance. After a heated contest Green purchased the manor for £5,010, but resold it almost immediately to Richard Fountayne Wilson.<sup>4</sup> The inhabitants presented a vote of thanks to their new lord of the manor, but it is difficult to tell whether the Yorkshire M.P. anticipated reciprocal support from the increased number of freeholders in Wetherby.

<sup>1</sup> *Leeds Mercury*, 16 Oct. 1824.

<sup>2</sup> *York Chronicle*, 21 Oct. 1824.

<sup>3</sup> *Specifications*.

<sup>4</sup> *York Herald*, 16 Oct. 1824.

A detailed study shows that most of the land in the township was bought by non-residents, who also laid out more than one-quarter of all the money raised from the sale of the town properties. Landed families with estates adjoining Wetherby or in neighbouring parishes and townships figure prominently among the non-resident purchasers: these included Paul Beilby Thompson, later Lord Wenlock of Escrick, who also owned Wetherby Grange; Lieutenant-Colonel Randall Gossip of Thorp Arch; Peter Middleton of Stockeld Park; and G. Barlow of Ribston.

The sale of the Wetherby estate in 1824 realized £168,561, exclusive of the timber, which it was estimated would yield an additional £5,000. The auction duty on the sale amounted to almost £2,000, and in addition the conveyancing of the property was subject to stamp and *ad valorem* duty. The purchasers received massive abstracts of title commencing in 1678, when the estates had been resettled by the Earl of Devonshire. After 1824, the conveyancy of property in Wetherby always started by referring to the sale plans and catalogue.

All the contemporary newspapers commended the auctioneer for the manner in which the sale was conducted. The fair play of the auctioneer and the generosity of the bidders would no doubt be remembered by those who attended the sale in one instance above all. Included in one of the lots was a garden at Eel Mires rented by James Horner. When the lot was announced Horner stood up and addressed the auctioneer, claiming that he had transformed the land from an infertile bog by his own efforts, that he had, in effect, purchased it by the sweat of his brow. When the auctioneer asked for a bid, Horner proposed the sum of £400, and apparently his unassuming speech had had such an effect that no other bids were made. The auctioneer expeditiously brought down his hammer to the loud applause of all.<sup>1</sup> Later on the same day when all the lots had been sold, it was announced that the Duke of Devonshire had offered the Town Hall for the use of the inhabitants. The solicitor had also assured them that a liberal subscription would be forthcoming from the Duke for a new workhouse in Wetherby, provided the townsmen were unanimous in the choice of an eligible site.

At the time there must have seemed every reason for generosity and goodwill on all sides: the purchasers were confident that their investments would yield a satisfactory return; while the Devonshire estate had realized far more than could have been hoped for even a few months before. If pecuniary motives were paramount, the results of the sale clearly indicated that it had taken place under highly favourable circumstances. Yet it is pertinent to ask whether the success which attended the sale of Wetherby could have been even greater? Had the estate been put under the hammer when the prices for land and property had reached their ceiling? The *Leeds Intelligencer* certainly had no reservations about the advantages of putting land on the market in the autumn of 1824:

We have no doubt that the example of the noble Duke, and the success attending it, will induce other land proprietors in the neighbourhood to avail themselves

<sup>1</sup> *York Herald*, 16 Oct. 1824.

of the present rage for purchasing, by bringing their property into the market at a season so admirably calculated to refund ample interest for their capital.<sup>1</sup>

In the following weeks, reports were made on the continued rise of confidence and property prices in Wetherby, no doubt boosted by rumoured modifications in the Post Office mail routes.<sup>2</sup> Other sales of Yorkshire property also produced high yields. An estate of Walter Fawkes of Farnley Hall near Otley, which was sold in November 1824, realized over £73 per acre or forty years' purchase; while a small estate on the outskirts of Huddersfield was sold in December at no less than 133 years' purchase. No wonder, then, that the *Yorkshire Chronicle and General Advertiser* could end the year on a confident note: "The columns of our paper serve every week to convey an idea of the very extensive transference of property, which is taking place in this county, particularly in the West Riding." Purchases were undoubtedly made at exceptionally high prices at this time,<sup>3</sup> but, within eighteen months the bottom had dropped out of the land and property market.

It is fortunate that the land-tax returns for the township of Wetherby after 1825 include full details of the rental value for all the property and land, together with the respective owners and occupiers.<sup>4</sup> Although the 1826 return is damaged, it is clear that the total rental of those assessed for land-tax was in excess of £5,000 per annum. For all subsequent years between 1827 and 1832 the total was little more than £3,500, a clear indication of the depth of the depression which affected property values with the collapse of the boom in 1826. One of the more obvious results of the sale of the Wetherby estate was the increase in the number of owner-occupiers in the township from nine to over forty, amongst whom nineteen were also tenants. On the other hand, the turnover of property seems to have done little to alter the occupational profile of the town.

Under the conditions set out for the sale it was stipulated that a number of lots would be sold subject to the proviso that the whole or parts of the properties would be demolished to give a "new look" to the town. In particular, access to the Market Place from the bridge, and from the Spofforth and Linton directions, was to be improved by the removal of a number of small tenements, and a row of small cottages behind the old Town Hall was to be demolished. Though these improvements were made, in other respects there were few positive signs of progress in the years which followed the sale. Population growth in the township was small, rising from 1,217 in 1821 to 1,494 in 1851. A study of commercial directories reveals little of a more sophisticated occupational structure, and there were no major developments in public buildings until the 1840's. Descriptions of the town before the mid-nineteenth century refer to the improvements which the Duke of Devonshire had undertaken in the years before the 1824 sale, but make few, if any, references to subsequent development. Yet it might have been expected that the division of the

<sup>1</sup> *Leeds Intelligencer*, 21 Oct. 1824.    <sup>2</sup> *Yorkshire Gazette*, 23 Oct. 1824.

<sup>3</sup> *The Gentleman's Magazine*, xciv, 1824, p. 637. For example, the Ormonde properties in aggregate realized £482,432 at an average of over forty years' purchase upon rack rents.

<sup>4</sup> Land Tax Duplicate Returns, Claro Wapentake. West Yorkshire Record Office, Wakefield.

estate and the sale of lots in perpetuity would have encouraged the erection of new residences. Certainly capital was forthcoming at the time of the auction, but how far was it readily available in the years after 1824? Almost a century later, in 1912, the *Wetherby News Almanac* provided an interesting explanation:

Many old families ruined themselves by buying their holdings. They had been at cheap rents, and they bid against each other for the property, and borrowed money which they were never able to pay off, and the interest threw them into debt and to beggary. It is remarkable that at that day of dear money and cheap rents they gave as much for many of the lots as they are realising today.

## Notes and Comments

### ANNUAL CONFERENCE AND AGM

The Annual Conference of the Society was held at Harper Adams College, Newport, Salop, on 7 to 9 April 1975. The Conference included papers by the President, John Higgs (Agricultural development: an historical perspective); H. E. Hallam (Aspects of agrarian history before the Black Death); David Hey (The agriculture of north Shropshire, 1640-1750), F. V. Emery (Innovation in pre-industrial Wales: the cultivation of clover), J. R. Walton (The diffusion of the improved short-horn breed of cattle in Britain 1770-1870) and A. R. H. Baker (Co-operation and change in French agriculture in the nineteenth century with particular reference to the role of agricultural syndicates in Loir-et-Cher, 1880-1914); there was also an excursion to South Shropshire led by David Hey.

The Society's twenty-third AGM was held on 8 April 1975. Mr C. A. Jewell and Mr M. A. Havinden were re-elected Treasurer and Secretary respectively and the four vacancies on the Executive Committee were filled by the re-elected retiring members, Professor A. M. Everitt, Mr G. Ordish, and Dr W. J. Rowe, and by Dr J. Chartres.

In her Chairman's report Dr Thirsk noted that the membership of the Society was now

787 or 13 more than in 1974. A one-day conference has been organized for 6 December at University College, London, on the theme of the diffusion of agricultural innovations. It was proposed to hold the next annual conference near Cambridge, on 12 to 14 April 1976, details of which will be announced in the New Year. It was also reported that the Clarendon Press had been approached with a view to publishing the translation of Wilhelm Abel's *Agrarkrisen und Agrarkonjunktur* which the Society had financed. The Executive was also investigating the possibility of republishing Sir E. John Russell, *A History of agricultural science in Great Britain* (1966). The Treasurer reported a satisfactory balance of over £4,000 on current account but warned against a large increase in printing and postage costs which might necessitate the raising of the annual subscription in the autumn or the New Year. The Editor reported a steady flow of articles with the emphasis, as before, on the nineteenth century.

An appreciation of the late Professor H. P. R. Finberg, a former President of the Society and first Editor of the *Review*, was given by the President, Mr J. W. Y. Higgs, on the first evening of the Conference.

(continued on page 186)

# The Investment Behaviour of Irish Landlords 1850-75: Some Preliminary Findings

By CORMAC Ó GRÁDA

To have "an opinion about Ireland," one must begin by getting the truth; and where is it to be had in the country? Or, rather, there are two truths, the Catholic truth and the Protestant truth, the two parties do not see things with the same eyes. . . Ask about an estate, you may be sure almost that people will make mistatements, or will volunteer them if not asked. . . In the midst of all these sacred truths, attested with "I give ye my sacred honour and word," which is the stranger to select?"—*William M. Thackeray*

THE famous meeting that took place at Irishtown, County Mayo, on 19 April 1879, marked the real beginning of the Irish Land War. Though the main purpose of the meeting was the airing of some local grievances, the national press quickly took note and several speakers covered much more than the local situation in their contributions. The most radical speech was made by Thomas Brennan, an ex-Fenian, soon to be made secretary of the Land League; its key point, often raised during the following struggle, and also echoed somewhat later by James Connolly in an urban context, was the following:

This is no mere sentimental question. . . You may get a federal parliament, perhaps Repeal of the Union—nay, more, you may establish an Irish republic, but as long as the tillers of the soil are forced to support *a useless and indolent aristocracy*, your federal parliament would be but a bauble and your Irish republic but a fraud. . .<sup>1</sup>

Of all "the wild and foolish ideas" floating around the Irish countryside during the 1880's, this, that the landlords were a parasitical class, had perhaps the greatest revolutionary potential. The landed interest did its utmost to defend itself. On the purely ideological front, arguments concerning property rights were avoided as a rule, but there was an insistence that landlords, as a group, did not rack-rent and did not evict at will, as was commonly alleged. More important, it was vehemently maintained that they were responsible for substantial productive investment in the land. However, peasant proprietorship was the result of the Land War, and the impression of relative inactivity on the part of landlords has largely prevailed. Only very recently has this come under attack again, this time from what has been called the "revisionist" school of Irish historians. The revisionists, who have questioned a wide variety of received ideas on the Irish past, see the traditional accounts as re-

<sup>1</sup> Quoted by Michael Davitt in *The Fall of Feudalism in Ireland*, 1904, p. 149. Connolly's famous statement that "if you remove the English army tomorrow and hoist the green flag over Dublin Castle, unless you set about the organisation of the Socialist Republic your efforts would be in vain," first appeared in the *Shan Van Vocht*, Jan. 1897.

flections of old-style Home Rule nationalism, and credit the landlords with a more enlightened role.<sup>1</sup>

The present paper tries to introduce a new dimension into the discussion by looking at investment behaviour of landlords in quantitative terms. The study deals mainly with the post-Famine period, the Indian summer of Irish landlordism, though some comments are offered on other periods too. The information presented, while tentative, should be of use not only in assessing landlord and tenant claims retrospectively but also in examining the political economy of the Land War itself. Obviously, nearly all revolutions involve costs due to dislocational and expectational considerations: to the extent that the achievement of owner-occupancy meant investment foregone, this is certainly a factor to be taken into account. However, the long-run aspects are usually far more important. To pose the question at hand in counterfactual terms, would the retention of the old system have meant a stronger performance by Irish agriculture?

The paper is divided into three sections. Section I refers to some contemporary impressionistic evidence, and suggests an estimate of improvement expenditure, based entirely on such evidence and on aggregate statistical sources. Section II deals with some information from a selection of the available estate accounts, and Section III rounds off the paper with some tentative conclusions and interpretations.

# I

For the post-Famine period there is broad agreement in the literature that landlords were not substantial investors in the land in the pre-Famine years. The weight of evidence presented to the Devon Commissioners in 1844 seems to support their conclusion on the subject:

It is admitted on all hands, that according to the general practice in Ireland, the landlord builds neither dwelling-houses nor farm-offices, nor puts fences, gates, etc. into good order, before he lets his land to a tenant. The cases in which a landlord does any of those things are the exceptions. The system, however, of giving aid in these matters is becoming increasingly prevalent.<sup>2</sup>

Different reasons have been adduced for such a state of affairs. Contemporary critics often put the blame on absenteeism, or on the short-sighted mercenary attitude of the typical proprietor. Such views were repeated by classical economists like Ricardo, who wrote of the landlords that they "will, for the sake of a little present rent, divide and subdivide their farms, until they receive from each tenant

<sup>1</sup> Strictly speaking, of course, there is no revisionist school, since the revisionists themselves disagree on certain fundamental issues. An early example of the new approach is P. Lynch and J. Vaizey, *Guinness's Brewery in the Irish Economy 1759-1876*, Cambridge, 1960, pp. 9-36, 161-76. L. M. Cullen, the most prolific of the new writers, has summarized many of his conclusions in *An Economic History of Ireland since 1660*, 1972. Barbara Solow, whose work on *The Irish Land Question and the Irish Economy 1870-1903*, Cambridge, Mass., 1971, is referred to below, also rejects the older interpretations. On landlord behaviour see Cullen, pp. 139-40; Lynch and Vaizey, p. 168; Solow, pp. 77-85.

<sup>2</sup> Report from H.M. Commissioners of Inquiry into the State of the Law and Practice in Respect to the Occupation of Land in Ireland (the Devon Report), B.P.P. 1845 (605), XIX, p. 16.

the merest trifle of rent."<sup>1</sup> However, a better generalization might be that a substantial majority of the tenants benefited in no way from any improvement that went on. In the 1840's, just before the Famine, two-thirds of all Irish landholders held less than 15 statute acres; it was these tenants, many of whom perished when the potato failed, who constituted the real problem in Ireland, and it was to their condition that a voluminous literature, as well as the Devon and Poor Inquiry Reports,<sup>2</sup> were addressed. Few landlords were likely to have drained, or built houses, or introduced new crops or rotations, for these people. Indeed, even when there was a will, there was little scope. The landlords, by facilitating subdivision and subletting earlier in the century, were probably the main contributors to the existing state of affairs; however, "improvement" could have meant little to the small tenant on the eve of the Famine, and the landlord was unlikely to be a gainer by it either. The absence of landlord investment in the smaller holdings was a reflection of the intractability of the rural crisis, and, at the same time, another reminder that the cottier economy was doomed. It is certain, though, that some landlords, particularly proprietors of larger estates, did support their more substantial tenants during those years. The middle tenant or farmer, scarcely affected by the Famine, was relatively secure in his tenure throughout the century, and, given a modicum of ambition and good fortune, could persuade his landlord to contribute to a variety of improvement expenses. To say this is not to take from the useful generalization of the Devon Commissioners: it is just to recognize the rather complex web of social relationships existing in rural Ireland at the time. We would still argue that most of the improvement that went on in the pre-Famine period was the tenants' own work: this consisted largely of the reclamation of previously extra-marginal land during the post-Waterloo decades. Perhaps over a million acres were put into use in this way, to feed the rapidly increasing population.<sup>3</sup> However, such "improvement" was not permanent; most of the land fell back into its uncultivated state after the Famine, and was used afterwards for grazing purposes only, or not at all. In terms of subsistence for several hundred thousand people for twenty or thirty years, the value of such improvement, no matter how temporary, was enormous, nevertheless.

It seems safe to say that there was more landlord investment in the 1850's and 1860's than in preceding decades. Assessment of the qualitative evidence is not easy, though. Both landlord and tenant used a series of royal inquiries as platforms on which to argue their cases, and there were scores of publications. Disinterested comment was less frequent, and more difficult. Curiously enough, relatively little was written about land improvements until the late 1860's, and it was only when Gladstone decided to act on the Irish question that the claims and the counter-claims became really vocal. In the next few paragraphs, I present some seemingly

<sup>1</sup> Ricardo to Trower, 24 July 1823: Piero Sraffa (ed), *Works*, ix, Cambridge, 1952, p. 314.

<sup>2</sup> *Report from H.M. Commissioners for Inquiry into the Condition of the Poorer Classes in Ireland* (the Poor Inquiry), B.P.P. 1835 (369), xxxii.

<sup>3</sup> The population of Ireland increased by about three million between 1800 and 1841; we merely assume that the extra mouths required a million extra acres of tillage for subsistence.

objective contemporary assessments, which I have disentangled from the mass of more partisan statements.

A few passages from the minutes of the Select Committee of Tenure and Improvement of Law Act (Ireland), dating from 1865, will serve as a useful starting-point. One of the most important witnesses to appear before this body was Mountfort Longfield, for a long time professor of political economy at Trinity College, and later chief executive of the Encumbered Estates Court and its successor, the Landed Estates Court. The Encumbered Estates Court was created after the Famine to ease the transfer of insolvent properties. Longfield was questioned at length, but only a few of his replies need be given here:<sup>1</sup>

56. In Ireland what is the custom as a rule?—As a rule the tenant takes the land in any condition in which it happens to be in, and makes the most he can of it, and a few landlords give help towards buildings, and sometimes, though more rarely, they give some help towards drainage.

57. But as a rule, it is the tenants who improve the land, is it not?—As a rule, it is the tenants who improve the land.

58. Whatever improvements are made?—Yes.

258. I want to define what you understand by the word improvement; in the first place, it means buildings?—Yes.

259. In the second place drainage?—Yes, drainage chiefly.

260. Fencing?—Fencing is sometimes the reverse of an improvement; taking down a fence is as often an improvement as making one.

393. We are getting rapidly beyond “only a few estates are well kept-up in Ireland?”—If I said “only a few,” I should have said “in proportion to the number of badly-kept estates”; one man may say that twenty is few, and another may say the same of fifty.

Longfield also spoke of the landlords who had purchased encumbered estates through his court. There has been some controversy among historians about these, who they were, how they compared with their predecessors, and so on. The traditional view, which has not so far been successfully countered, is that many of the purchasers were of native Irish stock, former *gombeen-men* (usurers), and professional men with some idle capital. In all, well over £20 million was spent through these courts on up to a sixth or a seventh of the lettable land of the country. Neither Longfield nor anybody else has ever argued that the native owners were great improvers: the only query is as to their number. Longfield's own opinion of the new landlords was that “they were more intelligent men generally, and had something more than the capital which they had made themselves; but on the other hand, I think they were too harsh on the tenants; they were men who had not the old traditions of negligence and indulgence combined.”<sup>2</sup>

<sup>1</sup> *Select Committee on the Tenure and Improvement of Land (Ireland) Act*, B.P.P. 1865 (402), XI. In 393 the questioner was Sir Robert Peel, who seemed afraid that Longfield might be taken to show the landlords in an unfavourable light.

<sup>2</sup> *Ibid.*, Q. 28.

Two landlord witnesses to this committee made several seemingly impartial statements about improvements, and their contributions may be mentioned very briefly. McCarthy Downing, a County Cork landlord, stated that he was unaware of any improvements made in Ireland "except by those landlords who had borrowed money for the purpose of drainage."<sup>1</sup> Lord Devon's Limerick agent, one Edward Curling, was content to go along with the old pre-Famine generalization, that in England all improvements were the proprietors', but that in Ireland it was "entirely opposite."<sup>2</sup>

One of the best-known surveyors of Irish agriculture in the 1880's was James Caird, the chief ideologue of "high farming" in Britain. Caird was not over-impressed with what he saw. He had been to Ireland previously, at the time of the Famine, when his friend, Sir Robert Peel, had sought his advice, and he published a pamphlet at the time. His second visit also resulted in a publication, and we quote his conclusions on the subject of improvement:

After an interval of twenty years I cannot say that . . . agriculture presented much evidence of general improvement. The people are better clothed, better housed and better fed, not because the produce of the ground has been materially increased, but because it has become of more value, and is divided among two-thirds of the numbers who shared it then. . . Most of the wet land is still undrained, except in Ulster and the eastern seaboard of the country, there is little appearance of any investment of capital in cultivation. To this general rule there are many exceptions. But the exceptions only bring into darker contrast the common rule.<sup>3</sup>

Caird does not attempt quantification, but his judgement cannot be treated lightly. As a general assessment, it is in line with Longfield's.

Another valuable contemporary source is the reports of the Irish Poor Law Inspectors on landlord-tenant relations, prepared in 1870 on request from London.<sup>4</sup> Barbara Solow, who has written an excellent book on the Irish land question,<sup>5</sup> relies heavily on these for her discussion of landlord investment behaviour. In my opinion, her treatment of the material, while challenging, is not entirely satisfactory, though here again it is a question of balance. She relies on the reports of Samuel Horsley and Dr Brodie, two inspectors who stated that all important improvements, at least on the larger estates, were the joint creation of both landlord and tenant. As against this, one might quote Mr Robinson, inspector for much of Leinster, who wrote: "it appears . . . that the dwelling houses, offices, fences and other works existing on the farms in this district, have been mainly created at the cost of the present tenants and their predecessors." Another inspector, Mr Hamilton, who worked in the north, wrote as follows:

<sup>1</sup> *Ibid.*, Q. 2880.    <sup>2</sup> *Ibid.*, Q. 3983.

<sup>3</sup> James Caird, *The Irish Land Question*, 1869, p. 19. Caird's earlier pamphlet was *Ireland and The Plantation Scheme; or, The West of Ireland as a Field for Investment*, Edinburgh, 1850.

<sup>4</sup> *Reports from Poor Law Inspectors in Ireland to the Existing Relations between Landlord and Tenant in Respect of Improvement on Farms*, B.P.P. 1870 (31), xiv.

<sup>5</sup> Solow, *op. cit.*

On the whole, after carefully going through all the papers and answers submitted to me, and from the inquiries I have made, I have come to the conclusion that throughout my district the great bulk of the improvements (excepting the re-arrangement of the holdings on the estates in mountain districts) has been executed by the present and former tenants themselves, entirely at their own cost, without guarantee of any kind, and that this is, and long has been, the custom of the country.

Mr Bourke, inspector for an area stretching from Laois to Kerry, could sum up:

Upon the general subject of land improvement, it may be observed that it remains in much the same position as 1845 when the report was issued of Lord Devon's Commission. A large portion of the country continues in an unimproved state; and though some advance has been made in cultivation, yet there has been no adequate capital expended in permanently beneficial works, either by landlord or by tenant. Of whatever has been done, the chief part is undoubtedly due to the tenant.

Thus, evidence is by no means as clearcut as might seem from a reading of the Horsley or Brodie reports alone. A cautious and moderate assessment of all twelve reports might be that landlords were responsible for most of the permanent drainage that went on, that on the larger estates they sometimes contributed to buildings and outhouses, but that on the whole, the amount of improvement going on was rather small and insufficient.

Regarding the larger estates, on which landlords are reputed to have often been more liberal, in the 1870's there were only 300 properties of over 10,000 acres in Ireland, but these accounted for a third of the country's total area. These figures imply that landownership in Ireland was even more concentrated than in Britain.<sup>1</sup>

What of the evidence presented to the Royal Commissions? Literally scores of witnesses to the Bessborough Commission, the most ambitious undertaking of its kind since the Devon Commission, dwelt on improvement; each side made emotive claims, and replied at length to the points of their class adversaries. Much of the evidence is probably of limited value to the economic historian, but there are still some passages by recognized authorities, which are worth repeating here. One of Ireland's leading experts on agriculture, Professor Baldwin of Glasnevin, made the following statement to the Commissioners:

It is important, I think that the Commission would have clear, convincing proof on that point (improvement), because I see there has been a good deal of discussion about it. . . If you take the Down Survey, you can see, for instance, at the time of that survey, what state Ireland was in. Take the ordnance survey maps,

<sup>1</sup> See the return in B.P.P. 1876 (1492), LXXX, 61, and J. H. Clapham, *An Economic History of Modern Britain*, II (Cambridge, 1938), p. 253, and the sources listed by him.

as I have done. I contend that the bulk of that improvement has been done by the tenants, and I value it at upwards of a hundred millions of money. Wherever you go there is the clearest evidence who made the improvements. There are improvements on a large scale by some landlords, but it is a mere drop in the ocean compared with what the people themselves have done.<sup>1</sup>

While Baldwin was far from being an advocate of the Land League or of peasant proprietorship, he clearly saw the landlords' part in improvements as a subsidiary one, and was concerned to have it seen in its right perspective. Other witnesses saw the matter in the same way, in response to questions asked.

95. As a rule, according to your experience in Kilkenny, who makes the improvements in the land when they are made—is it the tenant or the landlord?—The tenant, except on particular estates—those of the larger proprietors.

96. But isn't it the practice that the tenant makes the improvements?—Yes; and especially where land is reclaimed.

315. As a general rule, who makes the improvements in your district, the landlord or the tenant?—The invariable rule throughout Ireland is that the improvements are made by the tenant. In some cases advances are made by good landlords, to assist improvements, but improvements are seldom made wholly at the expense of the landlord.

9042. All the improvements are made by the tenants?—Yes; I am not aware of any by landlords in that neighbourhood.

9043. What do the improvements generally consist of?—I remember for twenty-five or thirty years, and during that period draining and subsoiling to a considerable extent and at a heavy expense, were effected. The fields were much smaller than they are now. Threshing machines have come into operation, and they are building a better class of farms and houses generally.

The reader may find these impressions repeated by several other relatively disinterested witnesses. But it is now time to be more concrete.

While it is clear that landlords, in some parts of the country, were in the habit of providing tenants with timber and slates when a house was being built, or iron gates when a field was being refenced or enclosed, such gifts can hardly have absorbed much of their money. The number of new houses with slate roofs built in the 1850's and 1860's was not large, and thatched houses were still common at the end of the period in rural Ireland. At any rate, landowners rarely boasted about being seriously out of pocket as a result of expenditure under this heading. Dr Knox, one of the poor-law inspectors reporting in 1870, has left two different estimates on the proportion of total expenditure on dwellings and outhouses incurred by the landlords. The first figure is only 2 per cent of the total, the second still only a moderately impressive 25 per cent. And these came from an area where such landlord help was

<sup>1</sup> *Report of the Commission of Inquiry into the Working of the Landlord and Tenant (Ireland) Act, 1870, and the Amending Acts* (Bessborough Commission), B.P.P. 1881 (2779), xviii, xix.

supposedly most common. However, the general information on housing and out-offices is extremely sketchy.<sup>1</sup>

We can be more precise when it comes to drainage. When post-Famine landlords referred to improvements they usually meant drainage. This was also the case in England. Indeed, as some of the passages, which are now quoted, indicate, some landlords seem to have regarded thorough drainage as *synonymous* with improvement. Fortunately for our purposes, it is possible to make a good guess at the amounts of money involved in drainage schemes. This is so because most of the drainage was carried out with the help of money which the landlords borrowed from the Board of Works. It is quite obvious from a number of replies to the Bessborough Commissioners that this was the case: rarely, it seems, did a landlord supplement a loan obtained with substantial funds of his own:

4484. Is the landlord improving?—The land is improving at the tenant's expense. Landlords seldom spend anything. Lord Templeton has drained largely, but he has done it with money borrowed from the Board of Public Works, and he charges the expense to the tenant in the rent. If he builds a house he does the same.

7040. As to improvements in your district, are they made generally by the landlords?—What I call estate improvement, such as arterial drainage or reclamation of bog, I borrow money from the Board of Works, and I proportion the amount to each tenant.

23017. Has much been done in the way of reclamation and permanent improvement of late years in your neighbourhood?—Very much.

23018. By the landlord or by the tenant?—Generally speaking, by the landlord, for the Board of Works would not lend to a tenant having a lease only for lives.

37748. When we were starting the drainage works . . . I got the inspector of the Board of Works to go with Lord Landsdowne and visit fields that would be suitable for drainage. . . .<sup>2</sup>

The loans made by the Board of Works were quite generous, at 3½ per cent, and repayable in twenty-two years. But the readers impressed by landlord claims will probably be surprised when they examine the actual sums involved. These are given in the annual reports of the Commissioners of Public Works, published in the Parliamentary Papers, and as seen from Tables I and II the amounts involved are really rather small. Between 1847 and the close of the 1868/9 financial year only about £1·3 million had been spent on thorough drainage under the Land Improvement Acts, about 235,000 acres at an average of somewhat over £5 per acre.<sup>3</sup> By

<sup>1</sup> We do know, however, that the number of first-class and second-class houses increased by about 150 between 1851 and 1871. See A. Schrier, *Ireland and the American Emigration 1850-1900*, Minneapolis, 1958, p. 167. Also, *Reports from Poor Law Inspectors*, p. 138.

<sup>2</sup> Bessborough Commission, *op. cit.* See also QQ. 23693, 22186.

<sup>3</sup> *Third Annual Report of the Commission of Public Works (Ireland)*, B.P.P. 1868/9 (4174), xvii.

1880 about 270,000 acres had been drained at an average cost of £7 an acre. Money was also handed out for other purposes, mainly towards dwellings and labourers' cottages. In all, loans of £3.1 million were granted between 1847 and 1880, but of this, over £2 million was given during 1847-51 on improvements which were, in effect, closer to being relief schemes. Requests for drainage money fell off after the late 'sixties, but loans for farm buildings and cottages increased after then.

A Treasury Committee on the Board of Works in 1878 frankly emphasized that the level of improvements left much to be desired. The report deals in turn with different categories under the Board's responsibility. As regards the Land Improvement Loans, it says:

From the return in Appendix D [see Table III] it will be seen that, though the loans under these Acts have of late years increased in the aggregate, yet the amounts sanctioned for advances towards *drainage* have been sensibly falling off. The high rate of wages and the scarcity of labour in recent years, as compared with twenty or twenty-five years ago, have, no doubt, in great measure caused

TABLE I  
APPLICATIONS AND AMOUNTS ISSUED IN EACH YEAR SINCE THE COMMENCEMENT  
OF OPERATIONS UNDER THE LAND IMPROVEMENT ACT, 1847  
TO THE CLOSE OF THE FINANCIAL YEAR ENDING 31 MARCH 1880

| Year  | No. of applications | Amounts issued | Year    | No. of applications | Amounts issued |
|-------|---------------------|----------------|---------|---------------------|----------------|
|       |                     | £              |         |                     | £              |
| 1847* | 1,354               | 72,790         | 1864    | 132                 | 58,439         |
| 1848  | 571                 | 356,160        | 1865    | 90                  | 46,215         |
| 1849  | 643                 | 379,836        | 1866    | 98                  | 26,295         |
| 1850  | 436                 | 250,324        | 1867    | 145                 | 39,180         |
| 1851  | 280                 | 145,653        | 1868/9  | 179                 | 64,973         |
| 1852  | 164                 | 88,542         | 1869/70 | 166                 | 83,775         |
| 1853  | 154                 | 55,454         | 1870/1  | 159                 | 77,980         |
| 1854  | 123                 | 49,293         | 1871/2  | 160                 | 82,555         |
| 1855  | 98                  | 35,180         | 1872/3  | 223                 | 76,290         |
| 1856  | 108                 | 32,510         | 1873/4  | 224                 | 99,572         |
| 1857  | 114                 | 31,674         | 1874/5  | 245                 | 102,005        |
| 1858  | 112                 | 35,524         | 1875/6  | 265                 | 98,730         |
| 1859  | 111                 | 29,334         | 1876/7  | 218                 | 121,405        |
| 1860  | 135                 | 26,902         | 1877/8  | 278                 | 121,345        |
| 1861  | 154                 | 36,656         | 1878/9  | 319                 | 125,370        |
| 1862  | 184                 | 61,375         | 1879/80 | 463                 | 147,035        |
| 1863  | 138                 | 58,830         |         |                     |                |

\*June to September (inclusive)

Source: P.P. 1880 (xix), c. 2646

TABLE II  
SCHEDULE OF LOANS AND SUMS ISSUED IN THE SEVERAL COUNTIES IN IRELAND  
UP TO 31 MARCH 1880

| Name of county | No. of loans | Amount issued | Name of county | No. of loans | Amount issued |
|----------------|--------------|---------------|----------------|--------------|---------------|
|                |              | £             |                |              | £             |
| Antrim         | 159          | 111,813       | Wicklow        | 186          | 98,226        |
| Derry          | 108          | 53,513        | Carlow         | 158          | 84,359        |
| Donegal        | 175          | 121,901       | Kilkenny       | 140          | 52,976        |
| Fermanagh      | 107          | 66,570        | Wexford        | 216          | 101,800       |
| Tyrone         | 237          | 114,785       | Kildare        | 201          | 101,260       |
| Armagh         | 51           | 15,498        | Sligo          | 143          | 73,502        |
| Down           | 92           | 60,924        | Leitrim        | 111          | 49,995        |
| Cavan          | 101          | 36,291        | Mayo           | 325          | 144,704       |
| Monaghan       | 78           | 38,589        | Roscommon      | 295          | 126,043       |
| Longford       | 169          | 78,601        | Galway         | 540          | 207,697       |
| Louth          | 65           | 25,555        | Clare          | 197          | 78,246        |
| Meath          | 258          | 150,025       | Limerick       | 510          | 227,861       |
| Westmeath      | 163          | 65,458        | Tipperary      | 357          | 130,652       |
| Dublin         | 155          | 57,087        | Waterford      | 103          | 45,035        |
| Offaly         | 121          | 35,528        | Cork           | 639          | 200,270       |
| Laois          | 256          | 128,235       | Kerry          | 430          | 233,188       |
|                |              |               | Total          | 6,844        | 3,117,187     |

Source: as Table I

proprietors to decline proceeding with improvements which will not yield them so quick a return as formerly. It is not impossible too, that since the passing of Vict. 26 and 27c. 88, proprietors have been turning their attention to arterial drainage; while the operation of the Landlord and Tenant Act (33 & 34 Vict., c. 46) may possibly have given a temporary check to land thorough drainage. But whatever the cause may be, it does not alter the fact that large extents of land are still in want of the application of the Land Improvement Acts.<sup>1</sup>

This discreet passage could hardly be taken to imply feverish activity on the part of landlords. However, the Board of Works had even greater problems in getting landlords interested in arterial drainage. Since the More O'Ferrall Act of 1831, which permitted the landlords to form joint-stock companies for the purpose, the British Parliament had been seeking ways of promoting arterial drainage. This piece of legislation was a dead letter, and so was subsequent legislation by Peel—until the Great Famine struck. As the crisis worsened in 1846 and 1847, there were demands for public works to alleviate the distress. The Government's choice fell on

<sup>1</sup> Report of the Select Committee on the Board of Works, B.P.P. 1878 (2060), xxiv.

TABLE III

SCHEDULE SHOWING THE NUMBER OF LOANS GRANTED UNDER THE LAND IMPROVEMENT ACTS, WITH THE AMOUNTS  
SANCTIONED AND THE DESCRIPTION OF WORK, FROM 31 MARCH 1860 TO 15 NOVEMBER 1877

| Years   | Drainage and<br>other land works |             | Farm<br>buildings |             | Labourers'<br>cottages |             | Scutch<br>mills |             | Totals          |             |
|---------|----------------------------------|-------------|-------------------|-------------|------------------------|-------------|-----------------|-------------|-----------------|-------------|
|         | No. of<br>loans                  | Amount<br>£ | No. of<br>loans   | Amount<br>£ | No. of<br>loans        | Amount<br>£ | No. of<br>loans | Amount<br>£ | No. of<br>loans | Amount<br>£ |
| 1860-1  | 72                               | 42,100      | 13                | 4,450       | —                      | —           | —               | —           | 85              | 46,550      |
| 1861-2  | 98                               | 70,350      | 20                | 7,050       | 12                     | 7,150       | —               | —           | 130             | 84,550      |
| 1862-3  | 136                              | 82,300      | 12                | 4,500       | 15                     | 7,200       | —               | —           | 163             | 94,000      |
| 1863-4  | 107                              | 66,300      | 11                | 3,650       | 6                      | 2,100       | 1               | 250         | 125             | 72,300      |
| 1864-5  | 72                               | 61,685      | 16                | 6,380       | 10                     | 3,160       | 2               | 520         | 100             | 71,745      |
| 1865-6  | 57                               | 43,430      | 18                | 5,400       | 6                      | 2,600       | 2               | 340         | 83              | 51,770      |
| 1866-7  | 37                               | 24,050      | 15                | 9,180       | 11                     | 7,160       | 1               | 100         | 64              | 40,490      |
| 1867-8  | 78                               | 67,690      | 35                | 13,545      | 14                     | 7,900       | 1               | 400         | 128             | 89,535      |
| 1868-9  | 93                               | 86,905      | 42                | 19,010      | 30                     | 13,970      | 1               | 350         | 166             | 120,235     |
| 1869-70 | 76                               | 48,850      | 60                | 38,245      | 15                     | 15,065      | —               | —           | 151             | 102,160     |
| 1870-1  | 50                               | 38,485      | 58                | 29,980      | 15                     | 14,150      | 2               | 775         | 125             | 83,390      |
| 1871-2  | 41                               | 28,260      | 76                | 45,140      | 33                     | 13,380      | 1               | 1,320       | 151             | 88,100      |
| 1872-3  | 62                               | 41,955      | 69                | 34,810      | 39                     | 19,985      | —               | —           | 170             | 96,750      |
| 1873-4  | 80                               | 60,110      | 86                | 58,290      | 35                     | 20,970      | —               | —           | 201             | 139,370     |
| 1874-5  | 80                               | 48,260      | 104               | 52,930      | 31                     | 9,520       | —               | —           | 215             | 110,710     |
| 1875-6  | 70                               | 43,060      | 113               | 59,865      | 34                     | 22,675      | —               | —           | 217             | 125,600     |
| 1876-7  | 61                               | 45,770      | 84                | 51,435      | 44                     | 32,105      | —               | —           | 189             | 129,310     |
| 1877-8  | 52                               | 38,625      | 67                | 51,960      | 25                     | 13,250      | —               | —           | 144             | 103,835     |
| Totals  | 1,322                            | 938,185     | 899               | 495,820     | 375                    | 212,340     | 11              | 4,055       | 2,607           | 1,650,398   |

IRISH LANDLORDS

Source: Report of the Committee appointed by the Treasury to inquire . . . the Board of Works in Ireland (P.P. 1878, c. 2060, p. 259).

arterial drainage, and close on £2 million was spent by the Board of Works on a long list of schemes during those awful years. Of course, in line with the ideology of the times, it was hoped that this work would be "productive," but as soon as the worst was over the Government panicked at the amounts spent, and ordered that every effort be made to close the works. There were immediate complaints from proprietors that much land was still flooded because of unfinished work, and, more generally, that uneconomic schemes had been forced on them during the crisis. As a result of these complaints, over £1 million was remitted to the landlords by a sympathetic administration, a gift which implied much about the true "productivity" of the Famine drainage works. Even at that, there was a widespread feeling among landlords that this sum was not enough. Arterial drainage came to a standstill again in the 1850's, and was still at a low level in the 1860's:

If more effectual measures are to be taken for the prosecution of arterial drainage in Ireland (and we think the requirements of the country demand them), we are of opinion that such measures must have as their basis the Act of 1863. . . Partly owing to the number of absentee landlords and partly owing to a want of interest in drainage displayed by some of the resident proprietors, difficulties as well as delays are at times experienced in obtaining the required assent of the owners of two-thirds of the land of a district. . . New works were practically suspended after the Famine time. This was to be ascribed partly to the comparative difficulty of procuring labour, and partly to the apathy of proprietors after the great exertions they made during the crisis. For some years in fact, the duties of the Board in connexion with arterial drainage seem to have been practically confined to completing the works already commenced, to making the final awards, and to giving information and advice to trustees, to whom the works were gradually being handed over. In 1862 the importance of providing further means of prosecuting arterial drainage forced itself on the government. . . There have been fifty applications made under the Act of 1863, for the formation of drainage districts. Eight of these have fallen through at the instance of the promoters; and for one the Board refused a Provisional Order, because it was a scheme that clearly would not pay. The sum advanced by the Government between 1863 and the 31st March 1877 was £262,426 4s. 1d. In twenty-four districts the work has been completed. The number of acres improved in those districts is estimated at 32,833, at a cost of £5 3s. 1½d. per acre. . . No considerable advance, it will be observed, has been made under the present system towards extending the benefits of arterial drainage to the country. . .<sup>1</sup>

The Treasury Commission put the blame squarely on the landlords and not on the 1863 legislation, to which it recommended only trifling amendments.

In all, then, what kind of figure do the aggregate sources suggest for landlord investments for the period between the end of the Famine and the late 1870's?

<sup>1</sup> *Loc. cit.*, pp. xxiv ff.

Adding together the sums spent under the Land Improvement Acts and, say, £500,000 for arterial drainage, one obtains a total of about £3.5 million. Assuming, very generously, that the proprietors spent an equivalent amount on other improvements, we would guess that they were responsible for £7-8 million worth of improvements at the outside. In proposing this order of magnitude, no deduction has been made from the Land Improvement Acts loans for schemes associated with the Famine times, though as has been mentioned such a deduction is probably warranted.

Elsewhere, I have calculated that agricultural rents in Ireland increased from less than £9 million in the early 1850's to over £12 million in the late 1870's.<sup>1</sup> Much of the increase took place in the 1850's, so that landlords' gross receipts from tenants between 1850 and 1875 must have been well over £260 million. This figure implies that landlords invested only 3 or 4 per cent of their income from the land on improvements.

Before proceeding to the records of a number of individual estates, we cannot let pass by a piece of evidence given great publicity in 1880-1, and most recently used by Barbara Solow.<sup>2</sup> In those years a group of Irish landlords, fearful of what recommendations the Bessborough and Richmond Commissions might make, formed the so-called Irish Land Committee for the purpose of collecting and disseminating information favourable to the landlord interest. They issued a questionnaire, and claimed to have received replies covering almost 1,300 estates (out of a total of perhaps six to eight thousand). The answers suggested that these landlords alone had spent £3.5 million on improvement since 1840. Supposing for a moment that they were representative of the generality of landlords—the Irish Land Committee were at pains to stress that they were—a total expenditure of £15-20 million is implied. However, the Irish Land Committee witnesses to the Bessborough Commission admitted, when pressed, that most of the money came from the Board of Works:

40149. First of all, give the names of the owners who are included in the total, and if you could give as many as possible of the different amounts represented by each name.

40150. You have not separated the moneys borrowed from the Board of Works, and the money expended on the landlords' own—have they made that distinction?

*Colonel Tottenham*—Probably most of the money put down there is money that has been borrowed. The greater part of the landlords have kept no record of the money spent out of their own pockets.

40151. We may take it that most of the money is borrowed money?—Yes.

Since we have already pointed out that the Board of Works loaned out less than £4 million in all over this period, we can say that the Land Committee's evidence is a distortion. Reliance on it weakens Barbara Solow's argument.

<sup>1</sup> 'Pre-Famine and Post-Famine Rents', *Economic and Social Review*, vii, April 1974.

<sup>2</sup> Solow, *op. cit.*, p. 78.

TABLE IV

| <i>Estate</i>                      | <i>Period</i> | <i>Percentage of<br/>rents received<br/>spent on<br/>improvement</i> | <i>Rents received<br/>(annual average<br/>in £1,000s)</i> |
|------------------------------------|---------------|----------------------------------------------------------------------|-----------------------------------------------------------|
| 1. Monteagle <sup>1</sup>          | 1862-70       | 12                                                                   | 9                                                         |
| 2. Devon <sup>2</sup>              | 1850-75       | 15.8                                                                 | 40                                                        |
| 3. Lord Ashtown <sup>3</sup>       | 1872-74       | 5-6                                                                  | 13.5                                                      |
| 4. Fowler <sup>4</sup>             | 1853-67       | 1                                                                    | 7.5                                                       |
| 5. Boulick <sup>5</sup>            | 1863-71       | 1.6                                                                  | 1                                                         |
| 6. Crofton <sup>6</sup>            | 1862-80       | 5.5                                                                  | 6                                                         |
| 7. Ashtown <sup>7</sup>            | 1852-73       | 14.1                                                                 | 10                                                        |
| 8. St George <sup>8</sup>          | 1850-70       | 8.3                                                                  | 6                                                         |
| 9. Cloncurry <sup>9</sup>          | 1860-80       | 4-5                                                                  | 12                                                        |
| 10. Devonshire <sup>10</sup>       | 1848-66       | 5                                                                    | 60                                                        |
| 11. London Companies <sup>11</sup> | 1850-70       | 20                                                                   | 30                                                        |
| 12. W. Bence-Jones <sup>12</sup>   | 1850-80       | 10                                                                   | 8                                                         |
| 13. Muckcross <sup>13</sup>        | 1853-79       | 8-9                                                                  | 13                                                        |
| 14. Powerscourt <sup>14</sup>      | 1861-63       | 8-9                                                                  | 20                                                        |
| 15. Robert French <sup>15</sup>    | 1860-80       | 5                                                                    | 4                                                         |

## II

Our treatment of estate accounts is partial and tentative, but probably sufficient for the purpose in hand. A definitive assessment must await the detailed study of all records still available. Table IV is based on examination of a number of accounts and on some other relevant data, reproduced from previous work. The figures are

<sup>1</sup> National Library of Ireland, MSS. 581, 583. These accounts deal, in effect, with four different estates belonging to the Spring-Rice family. Much of the money was spent on the two estates around Foynes; the others, at Castlemaine and Cahirmoyle, were less cared for. Lord Monteagle managed an insurance club and presented annual prizes at Mount Trenchard. I have assumed that aggregate expenditure on drainage and major building works averaged £500 a year during the period in question; an exact figure is impossible to work out, given the partial and overlapping nature of the records.

<sup>2</sup> NLI, MSS. 6929, 6978-89. Devonshire's Irish properties were situated in Counties Waterford and Cork.

<sup>3</sup> NLI, MSS. 5826-7. County Limerick. <sup>4</sup> NLI, MS. 11414. County Meath.

<sup>5</sup> NLI, MS. 5916. County Tipperary. <sup>6</sup> NLI, MSS. 4074-4100. County Roscommon.

<sup>7</sup> NLI, MSS. 1765-8. Counties Offaly, Tipperary, and Galway.

<sup>8</sup> NLI, MSS. 4001-22. Counties Dublin, Cavan, Leitrim, and Roscommon.

<sup>9</sup> NLI, MSS. 12818-909. Counties Kildare and Limerick. In this case also the percentage is rather approximate: I have assumed, on examination of the work books, that £500 was spent annually on improvements, besides other specified charges.

<sup>10</sup> W. A. Maguire, *The Downshire Estates in Ireland 1801-1845*, Oxford, 1972, pp. 76-7.

<sup>11</sup> O. Robinson, 'The London Companies as Progressive Landlords in Nineteenth Century Ireland', *Econ. Hist. Rev.*, 2nd ser. xv, 1962-3.

<sup>12</sup> W. Bence Jones, *A Life's Work in Ireland by a Landlord who Tried to do His Duty*, 1880, p. 113. We assume that Jones's property yielded him £2 per acre.

<sup>13</sup> Evidence of H. Herbert to the Bessborough Commission, *op. cit.*, QQ. 25448-50.

<sup>14</sup> NLI, MSS. 4889, 4893.

<sup>15</sup> Evidence of owner's brother to the Bessborough Commission.

based on a working definition of landlord investment which includes drainage expenditure, as well as money spent on housing, fences, afforestation, roads, agricultural societies, and the like; expenditures on luxury items, and donations to religious and charitable bodies, are left out. Such a categorization is indispensable, but ambiguities remain in the treatment of individual items. Thus, for instance, the contributions of Mrs St George, a south Donegal proprietor, towards the construction of a market-house in the town of Carrick-on-Shannon in 1868, has been counted as an investment, but the costs of beautifying her family's pleasure gardens have not. Similarly, the enormous sums spent on the reconstruction of Lismore Castle by the Duke of Devonshire in the 1850's, and the less substantial sums spent on the manorial gardens at Powerscourt in Wicklow, have been omitted. Such expenses are considered to have been *faux frais* of the Irish landlord-tenant system.<sup>1</sup>

A weighted average of the results implies that about 10 per cent of rents received on these estates was spent on capital formation, and a simple arithmetic average implies 8 per cent. These figures must be treated with extreme caution though. Inevitably, most available accounts belonged to exceptionally active landlords and their agents: the vast majority of proprietors did not keep more than a rent toll, and many probably relied on agents with a good memory for figures. Remembering Longfield's and Caird's conjectures about the relatively small number of improvers, and previous remarks about the size distribution of estates, we would suggest that about a third of the land was managed by proprietors who spent 8 or 10 per cent of rents received, another third by those who spent nothing, and the remainder by owners who occupied an intermediate position. Such a conjectural breakdown implies an average proportion of 4 or 5 per cent of the rental being devoted to capital formation; a rough guess, certainly, but one indicative of the order of magnitude involved. While examination of other sources should remove some uncertainties, I cannot see how the role of inferences like this can be substantially reduced.<sup>2</sup>

### III

Both approaches towards an estimate of landlord investment indicate answers of the same order: proprietors seem to have ploughed back from 3 to 5 per cent of their rental incomes in improvements related to agriculture. Such a figure belies

<sup>1</sup> Between 1851 and 1858, about £40,000 was spent on the renovation of the Devonshire Castle at Lismore. For this and other information, see the accounts listed in footnotes to Table IV.

<sup>2</sup> The difficulty with reliance on estate material has been frankly explained by B. A. Holderness in 'Landlords' Capital Formation in East Anglia 1750-1870', *Econ. Hist. Rev.*, 2nd ser. xxv, Aug. 1972. Regarding the landlords who invested little or nothing, there are quite a few who, rather surprisingly, admitted as much before the Bessborough Commission of 1881. See, for example, M. O'Flaherty of Tuam (Q. 19414), Robert Reeves of Killimer, Clare (Q. 23332), Thomas Lambert of Galway (QQ. 19522-4), Martin Hart of Clifden (QQ. 19922-5), and Joshua Jackson, Lord Arran's superintendent (QQ. 14875-6). The latter pointed out that "Lord Arran did lay out something in draining and subsoiling in 1847 and 1848," but that "the tenants do all on their farms." Another agent, W. U. Townsend, who looked after twenty estates worth £40,000 a year in total, suggested that landlord investment on those properties amounted "formerly to £1200 a year"; this suggests a proportion of 3 per cent or less (see QQ. 22183-5). Charles O'Hara of Collooney, Sligo, was spending 3-4 per cent of his rental income of £6,000-£8,000 on improvements (mostly one drainage scheme) in 1879-81 (NLI, not catalogued).

more extreme generalizations such as that of the Duke of Newcastle, that "in England and Scotland the landlords let farms; in Ireland they let only land." Nevertheless, the proportion is very low when compared to estimates for Britain during the decades of "high farming," though probably better than the pre-Famine performance.<sup>1</sup>

Our analysis suggests some parallels with the British experience, however. The more substantial landlords' behaviour was not too different from that of their counterparts across the Irish Sea; they invested most when there was a danger that the tenants might not make the rent. Thus, they spent more heavily in the late 1840's, and again in the early 1860's, periods of crisis in Irish agriculture. In Britain, Thompson informs us, "typically, the landowners' outlays were expended at times of depression in an effort to ward off or mitigate rent reductions."<sup>2</sup> Indeed, the very buoyancy of Irish rents in the post-Famine period may explain in part why so many landlords felt no compulsion to invest more impressively.

Though agricultural output fell somewhat, total rent payments rose by almost a third between the early 'fifties and 'seventies.<sup>3</sup> The important increases in agricultural prices, particularly livestock prices, were responsible for this. With rents being paid up promptly, landlords preferred to invest in railway and government stocks than in the land, and they may have been wise in this: the English experience seems to suggest that investments in "high farming" rarely paid.<sup>4</sup>

An examination of some of the estate accounts mentioned suggests that certain landlords invested as much proportionally in the immediate pre-Famine years as they did in the 1850's and 1860's. Mrs St George spent 8.2 per cent of her receipts on improvement in 1842-6, expenditure on the Devonshire estates was not far short of 15 per cent, and both the Downshire and London Companies' estates saw about as much improvement in the early 'forties as they did in the later period. More significantly, however, neither estate accounts nor the Board of Works statistics support the common claim that landlord investment reached a standstill after Gladstone's Land Act of 1870. Landlords predictably argued that line, but the figures contradict Barbara Solow's claim that this piece of legislation "put an abrupt stop to landlord improvements."<sup>5</sup> Only an undue reliance on secondary sources can explain this conclusion.

Thus, the suggestion that the tenants were cutting themselves off from a valuable source of potential funds by rejecting the old system of social relations remains to be proven. It is suspect for a number of reasons. Firstly, it assumes that landlords invested substantially in the post-Famine period—but we have shown above that this is not the case. It also assumes that all such investment suddenly ceased after

<sup>1</sup> For a summary of such estimates see Holderness, *loc. cit.*, p. 439.

<sup>2</sup> F. M. L. Thompson, *English Landed Society in the Nineteenth Century*, 1963, p. 247. On the Irish data see the sources listed in Table IV.

<sup>3</sup> C. Ó Gráda, 'Irish Agricultural Output in 1840/5, 1852/4, and 1869/71' (unpublished). On price movements, Thomas Barrington, 'A Review of Irish Agricultural Prices', *Journal of the Statistical and Social Inquiry Society of Ireland*, 1927, pp. 249-80.

<sup>4</sup> J. D. Chambers and G. E. Mingay, *The Agricultural Revolution 1750-1880*, 1966, pp. 167-8.

<sup>5</sup> Solow, *op. cit.*, p. 86.

1870: again this is not so, though a fall-off is likely to have occurred during the 1880's. Thirdly, it assumes that Irish agriculture suffered from a capital famine after the Land War, whereas, in fact, after the bad years of the 1880's, bank deposits throughout Ireland increased markedly, and there was relative prosperity on the land.<sup>1</sup>

While proper estimates are still unavailable, it is admitted on all sides that Irish agricultural output stagnated in the late nineteenth century. Acreages under the main crops fell, and there was little increase in either livestock numbers or crop yields. These developments are unrelated to the question of landlord investments; another factor—this time directly related to the Land War—may have been the dominance of older farmers, produced by the decline of a market in land.<sup>2</sup> But the larger issue of the economics of the Land War deserves comprehensive treatment elsewhere.

<sup>1</sup> Bank deposits rose from £33 million in 1890 to £60 million in 1913. The enormous increase in the number of creameries, both private and cooperative, during this period, testifies to the ability of tenants and former tenants to generate capital without the help of the landlord. Between 1893 and 1902 the number of co-operative creameries rose from 30 to 236. See J. Lee, *The Modernisation of Irish Society 1848-1918*, Dublin, 1973, pp. 13-14, and L. M. Cullen, *op. cit.*, p. 155.

<sup>2</sup> On the role of price movements, Hans Stachle, 'Statistical Notes on the Economic History of Irish Agriculture, 1847-1913', *Jour. Stat. & Soc. Inq. Soc. of Ireland*, 1950-1, pp. 444-71. The role of the land market was first raised by Raymond D. Crotty in his brilliant *Irish Agricultural Production*, Cork, 1966, ch. iv. Crotty's thesis, that the landlord-tenant system by purging the inefficient made for a more dynamic agriculture, has yet to get the attention it deserves. Personally I have reservations: the average age of landholders began to increase from 1860 on, and the extent of land transfers after the Famine was by no means spectacular. One of the great merits of Barbara Solow's book is her emphasis on landlords' reluctance to evict or to increase rents incessantly in the past-Famine period. See Solow, *op. cit.*, pp. 51-77.

# Obstacles to Government-Assisted Agricultural Development in West Africa: Cotton-Growing Experimentation in Ghana in the Early Twentieth Century<sup>1</sup>

By RAYMOND E. DUMETT

IN agricultural history, as in that of science and industry, the description of spectacular achievements has always been more fashionable than the analysis of projects that ended in stagnation or failure. Whether history or development economics is invariably well served by this "progress-oriented" approach is debatable. In many of the less developed regions of the world it is probable that abortive schemes for agricultural development far outnumber those which have been successful. The record of government-assisted agricultural innovation during the colonial period in West Africa is replete with cases of unsound planning, poorly managed programmes, and projects frustrated by intractable environmental difficulties which deserve more than passing attention if general problems of African agriculture are to be understood. It is not the task here to analyse the overall determinants of agricultural change in the tropics nor to join in the often strident debate over the general effectiveness of colonial agricultural assistance programmes.<sup>2</sup> An historical analysis of the origins of British involvement in cotton-growing in Ghana, of the measures which were taken, and the reasons for their failure may help to cast light on the complex combination of human and environmental constraints which have impeded government-assisted development in West Africa during the colonial period and after.

Untutored westerners are apt to assume that tropical Africa is a homogeneous entity and that problems of agricultural progress in various parts of the continent are open to uniform analysis or easy summary. In fact, the diversities of environment, systems of production, and related social institutions, both within major regions and often within a single country, are wide enough to make any simplified classification of problems hazardous. Major constraints on agricultural development in West Africa which are commonly emphasized include: (1) poor basic resource endowments, including lack of adequate year-round water supply and soils deficient in vital mineral nutrients as a result of leaching and erosion; (2) prevalence of disease parasites and vectors destructive to domesticated animals and plant life and debilitating to human labour; (3) overreliance in many countries on

<sup>1</sup> The writer is grateful to Harold Woodman, Purdue University, Roger Thomas, University of Ghana, and Victor C. Uchendu, University of Illinois, for brief comments.

<sup>2</sup> For some recent harsh criticisms of general colonial agricultural policy and practice in West Africa, see Michael Crowder, *West Africa under Colonial Rule*, Evanston, Ill., 1968, pp. 282-3.

a narrow range of tropical export products which are susceptible to wide price fluctuations; (4) inadequate investment in irrigation, transportation facilities, marketing, and credit agencies, the entire network of infrastructure and services without which commercial agriculture cannot function.<sup>1</sup> General consequences of this situation (which persist in many countries up to the present day) were low levels of farm productivity, both of export crops and food crops, and low real incomes per head increasing at a slow rate with an inadequate proportion of rural incomes devoted to savings and investment. Most introductory surveys concerning barriers to development in West Africa are useful only as bases of departure, and general models of development are open to qualification and criticism when applied to specific areas.

Before analysing cotton-growing projects in the Gold Coast, 1902–20, it is important to recall the limited range of scientific data which was available to early twentieth-century pioneers in African agricultural research. Experience gained from British agriculture was seldom applicable to West African conditions.<sup>2</sup> During the nineteenth century, the staff of the Royal Botanical Gardens at Kew under Sir Joseph Hooker had endeavoured to collect and collate information on the classification and geographical distribution of economic plants in many parts of the tropical world; but taxonomic work on the plant life of Africa was still in the rudimentary stages.<sup>3</sup> In the case of cotton, few of the exotic and non-plantation species had been properly classified or their genetic characteristics identified.<sup>4</sup> The science of soil chemistry was in its infancy; as late as 1923 two pioneer agronomists could write that “the distribution of the great soil belts over the continent of Africa seem to have received hitherto no attention whatever.”<sup>5</sup> The economics of traditional techniques on African small farms were not fully appreciated. Of course, little scientific information in such subsidiary fields as plant pathology, insect and weed control, and irrigation existed to guide extension officers in their earliest efforts. For European agricultural staff posted to British West Africa in this period, introductory instruction in horticulture was available at Kew Gardens; but systematic training of sizeable numbers of government personnel in the rudiments of tropical agriculture came only with the establishment of the Imperial College of Agriculture at Trinidad in 1922.

<sup>1</sup> For useful introductory studies of problems of agricultural development in Africa, see articles in the symposium ‘Agricultural Economics’, published in *The Canadian Journal of African Studies*, vol. 3, no. 1, Winter 1969, pp. 141–200; A. T. Mosher, *Getting Agriculture Moving*, N.Y., 1966; A. M. Kamarck, *The Economics of African Development*, N.Y., 1967; C. K. Eicher, *Research on Agricultural Development in Five English-Speaking Countries in West Africa*, N.Y., 1970; Guy Hunter, *Modernising Peasant Societies*, 1969.

<sup>2</sup> For example, deep ploughing, whether by animal-drawn or mechanized implements, can be harmful under West African soil conditions. It was attempted in a few cases in the colonial period but was invariably abandoned when it was demonstrated that it hastened the disintegration of humus in the extremely thin layer of fertile top soil. The most common tillage instrument in most parts of West Africa is the short hoe.

<sup>3</sup> For a summary, see W. B. Turrill, *The Royal Botanic Gardens, Kew, Past and Present*, 1959, pp. 47–63.

<sup>4</sup> As late as 1926 the world’s leading expert on cotton, Sir George Watt, noted that the genus *Gossypium* had been very largely neglected in taxonomic studies.—Sir George Watt, ‘*Gossypium*’, Kew Gardens, *Bulletin of Miscellaneous Information*, no. 5, 1926, pp. 193–207.

<sup>5</sup> H. L. Shantz and C. F. Marbut, *The Vegetation and Soils of Africa*, N.Y., 1928, p. 131.

## II

Cotton-growing in West Africa can be traced back many centuries, long before the advent of European explorers and traders. Medieval Arabic sources speak of cotton cultivation in the vicinity of the River Niger,<sup>1</sup> and it is possible that seeds were introduced into the Voltaic basin in the north of present-day Ghana prior to the first Portuguese contacts on the Gold Coast. This indigenous cotton grew mainly in interior savannah areas. On the sea coast the Dutch in Apollonia and the Danes in the Accra region experimented with small plots in the eighteenth century, but cotton did not thrive in these districts.<sup>2</sup> During the nineteenth century, British travellers to the interior found indigenous cotton in three main varieties: "Green Seed," "Kidney," and, most important, "Volta River" cotton which provided the best yields. Although it is uncertain from which original African or foreign stock this Ghanaian cotton derived, plants were subsequently classified with the American group of short-staple upland cottons (species *Gossypium punctatum* and *G. hirsutum*) rather than with long-staple Egyptian and American "sea island" (*G. barbadense*) varieties. Many nineteenth-century European observers mistakenly assumed that this was wild cotton.<sup>3</sup> In fact, as two or three perceptive government travelling commissioners noted, cotton was generally cultivated in small quantities, usually in combination with food crops, by the Ewe people in the trans-Volta territories of the south-eastern region and by the Dagomba and other peoples in the Northern Territories.<sup>4</sup> It seems unlikely that much cotton from the Northern Territories was then exported by sea, but yields were sufficient to sustain a local weaving industry. Speaking of the extreme north-west of that region, one officer wrote: "The people . . . are essentially agriculturists, cultivating extensively and intelligently. Flax and cotton are cultivated in small quantities for personal use; while tobacco surrounds each compound and is sold to Moshi and other traders."<sup>5</sup>

During the middle decades of the nineteenth century a number of African as well as British private groups, including the Gold Coast Agricultural Society, the Methodist Church, and the F. and A. Swanzy mercantile firm, tried to stimulate commercial cultivation by small-holders in the coastal districts through instruction at small model plantations.<sup>6</sup> The earliest government-supported attempt was that initiated by Governor W. Brandford Griffith, who also established the colony's

<sup>1</sup> For example, al Bekri, *L'Afrique Septionale*, tr. de Slaney, Paris, 1859, pp. 378-9.

<sup>2</sup> John Beecham, *Ashantee and the Gold Coast*, 1841, p. 139; K. B. Dickson, *An Historical Geography of Ghana*, Cambridge, 1969, pp. 74-5, 94-5.

<sup>3</sup> See, for example, T. E. Bowdich, *Mission from Cape Coast Castle to Ashantee*, 1819, p. 326. R. A. Freeman attempted to draw a clear distinction between cultivable varieties, such as Egyptian cotton, and "African cotton" which was by definition regarded as "wild."—*Travels and Life in Ashanti and Jaman*, N.Y., 1898, p. 543.

<sup>4</sup> Rept. by G. E. Ferguson, 19 Nov. 1892, encl. 1 in Griffith (Secret) to Ripon, 26 Nov. 1892; Colonial Office 96/226. Also, Rept. by Asst. Inspector Lethbridge, 4 March 1889, encl. in Griffith to C.O., C.O. Afr. 354, No. 42, p. 75.

<sup>5</sup> Rept. by Captain O'Kinealy, Northern Territories Boundary Commissioner, encl. in Rodger (conf.) to C.O., 19 Dec. 1904; C.O. 96/421.

<sup>6</sup> Rept. of Methodist Industrial Garden (Gold Coast), 28 Feb. 1852, *Acts. and Papers*, 1852, (1539), xxi. Testimony of A. Swanzy, 15 May 1865, Minutes of Evidence before Parliamentary Select Committee on West Coast of Africa, *Repts. of Committees*, 1865, (412), v.

first Botanic Station at Aburi in 1888.<sup>1</sup> But few of these early experiments lasted more than two or three years; and contemporary reports relate that the plots had returned to bush as a result of sharp climatic variations, slipshod cultivation, and lack of financial resources. There was, in fact, little continuity between these efforts and the government cotton-growing projects of the early twentieth century.

What prompted substantial support for West African cotton experimentation by British governmental and corporate business interests were serious world shortages and sharp price rises for the raw product which afflicted the Lancashire cotton industry around the turn of the century.<sup>2</sup> The causes for this cotton price inflation, first attributed entirely to the unprecedented ravages of the boll weevil in the United States during the 1890's, were in fact more complicated, and grew in part out of the shortage of cheap black labour on southern plantations coupled with the burgeoning demands of the American cloth industry.<sup>3</sup> Supplies of cotton from British India and Egypt were insufficient to remedy the situation; during 1901-4 the desperate straits of the British weaving industry were reflected in falling profits, work stoppages, and widespread unemployment.

It was against this background of the "second world cotton famine" that the British Cotton Growing Association was formed in June 1902 under the leadership of the Liverpool shipping magnate A. L. Jones,<sup>4</sup> with the assistance of prominent Lancashire politicians and civic leaders in the Liverpool, Manchester, and Oldham chambers of commerce. Initially established as a private voluntary body with a guarantee fund of £100,000, the B.C.G.A. was subsequently strengthened by grant of a Royal Charter of incorporation in 1904, which enabled Jones to raise the nominal value of its capital stock to £500,000. The Association's call for large-scale British government support of cotton-growing programmes overseas coincided with the thrust towards expansionist-developmental imperialism led by Joseph Chamberlain, Secretary of State for the Colonies, 1895-1903. Basic to Chamberlain's economic imperialism was a reaction against previous reliance on the doctrine of colonial self-sufficiency in matters of finance and development which, he believed, had left Britain's West African possessions as economically stagnant backwaters. He resolved to inaugurate a new era of state-assisted economic development where the British Imperial government would work in partnership with private enterprise to invest capital in research and to spread knowledge of export crops among peasant cultivators in tropical colonies.

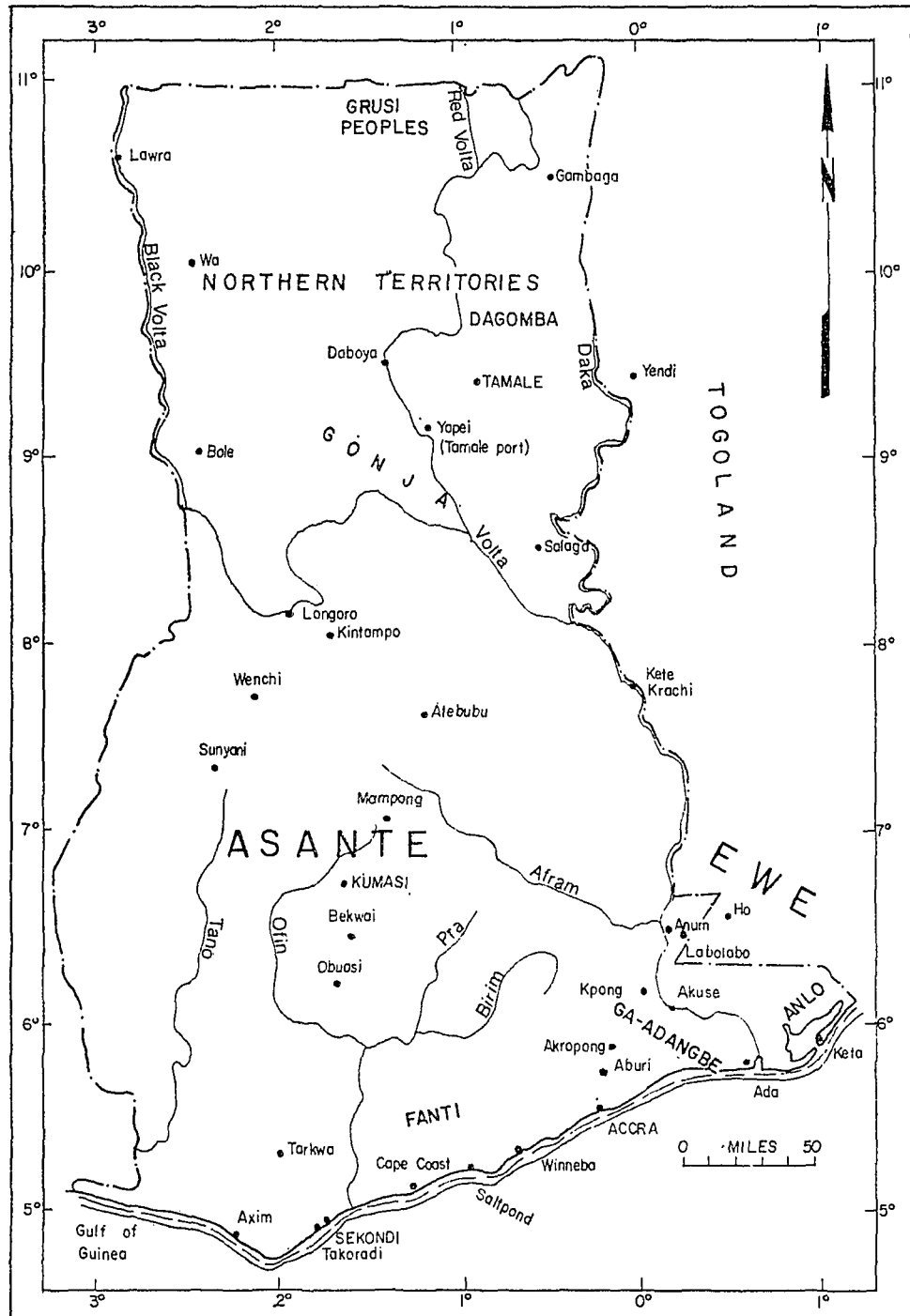
Chamberlain's communications with Jones opened the way for the negotiation of

<sup>1</sup> Griffith to Holland, 21 Feb. 1888, nos. 1 and 3 of 'Visit of Governor of the Gold Coast to the Eastern Districts of the Colony', *Acts and Papers*, 1888, (c. 5249-5), pp. 3-9, 12, LXXII.

<sup>2</sup> It was reckoned that during a period of one year Lancashire manufacturers, spinners, and operatives suffered a total direct loss of £2 million.

<sup>3</sup> Arthur Redford, *Manchester Merchants and Foreign Trade*, II, Manchester, 1956, p. 77. In 1904 the volume of American cotton production fell so far short of world requirements that American speculators were able to corner nearly the whole of the crop.

<sup>4</sup> Jones was Chairman of the Elder Dempster Shipping Lines and President of the Liverpool Chamber of Commerce. The extent of his commercial interests in West Africa was vast. For biographical information, see A. H. Milne, *Sir Alfred Lewis Jones*, Liverpool, 1914.



Sketch map of the Gold Coast, Asante and Northern Territories (c. 1905).

special agreements between the Cotton Growing Association and the five dependencies of The Gambia, Gold Coast, Sierra Leone, Southern Nigeria, and Northern Nigeria for the establishment of cotton-research and demonstration stations.<sup>1</sup> In Colonial Office and B.C.G.A. policy discussions on cotton-growing in West Africa three basic considerations were paramount: (1) to increase the flow of tropical raw materials from Africa to the United Kingdom in order to compensate for shortages from the U.S.A.; (2) to increase the acreage under direct cultivation by clearing new tracts of virgin territory; and (3) to offset the dangers of monoculture through export-crop diversification. In contrast to policies elsewhere in colonial Africa the British Government ruled out European-owned commercial plantations; for practical rather than humanitarian reasons the Government decided that African small-holdings should be the vehicle for agricultural development. In agreements drawn up for the Gold Coast in 1902 and subsequently modified, the Association agreed to pay £1,500 per year towards the promotion of commercial cotton cultivation on condition that the colonial government contribute an equal amount. The Association's expenses included cost of seeds and distribution, agricultural implements, ginning machinery, wages of labourers, and transport of exportable cotton to the coast. In addition the B.C.G.A. agreed to purchase all cotton brought to them for ginning by African growers at guaranteed remunerative prices.<sup>2</sup>

### III

For initial experiments in the Gold Coast, experts from the government and British Cotton Growing Association selected the state of Krepi in the Ewe-speaking region of the River Volta: the area had a long history of indigenous cotton-growing and its proximity to the lower reaches of the Volta provided access to the sea.<sup>3</sup> Located on the northern margins of the Accra-Ho-Keta plain, Krepi lay in a transitional vegetational zone between the coastal savannah and forest zones best described as "tree-savannah." The structure and chemical make-up of the soils, which included a wide range of types of varying fertility—pale yellow loams, tropical blackearths, and grey hardpans—were then unclassified.<sup>4</sup> Sowing commenced first at Anum, a small town in Krepi about five miles from the east bank of the Volta, where 27 acres were cleared in early 1903, and second at Labolabo, about four miles from Anum, where 105 acres were cleared and another 95 held in reserve for future planting.<sup>5</sup> Despite earlier encouragement from the staff at Kew Gardens, efforts to propagate Egyptian cotton failed owing to the unsuitability of local soils and the

<sup>1</sup> For further analysis of the impact of pressure groups on Chamberlain's policies, see R. E. Dumett, 'British Official Attitudes in relation to Economic Development in the Gold Coast, 1874-1905,' unpublished Ph.D. thesis, University of London, 1966.

<sup>2</sup> Colonial Office Memorandum, 'Government Action in Encouragement of Cotton-Growing in Crown Colonies', *Acts. and Papers*, 1910, (Cd. 5215), pp. 4-5, LXVI.

<sup>3</sup> Govr. Nathan (36) to C.O., 25 Jan. 1903; C.O. 96/406. Govr. Rodger (121) to Lyttelton, 14 March 1904; C.O. 96/417.

<sup>4</sup> For detailed analyses of the soils of Ghana see articles by H. Brammer, and P. Nye and D. Stephens in J. B. Wills (ed.) *Agriculture and Land Use in Ghana*, London and Accra, 1962, pp. 88-106, 127-43.

<sup>5</sup> *Gold Coast Annual Report for 1903*, p. 22.

lack of irrigation facilities.<sup>1</sup> Attention was given to the improvement of indigenous varieties of cotton, and the Agricultural Department was particularly hopeful that short staple American Upland cotton from the southern U.S.A. might prove cultivable under West African conditions.

During the first several years' work prospects for success appeared favourable. Close rapport was maintained between the staff of the Gold Coast Department of Agriculture, headed by W. H. Johnson and two assistants, and the local representatives of the Cotton Growing Association, J. W. Chandler and E. Fisher. At a meeting in Manchester with the Governor of the Gold Coast, officers of the Association made it clear that their main objective was to direct "all available funds to the development of a small but really good plantation which would serve as an object lesson to all native planters."<sup>2</sup> Towards this end the local experts reported no problem in recruiting a crew of 150 men and boys to serve as permanent cultivators for the model farms at a wage of 1s. per day. Nor did they experience much difficulty in maintaining the first stand of American Upland cotton, whose growth on the model farm was thought to be fairly good.<sup>3</sup> As expected indigenous cotton grew more vigorously than the American cotton, but the bolls were less numerous.

It would be incorrect to assume that most British colonial projects for the improvement of West African agriculture were unscientific, as some recent critics have suggested.<sup>4</sup> Considering the elementary state of existing knowledge in tropical agriculture, early government researchers deserve credit for their attempts to conduct original field experiments and to collect basic scientific data which would prove valuable in later agricultural projects. The cotton-growing team determined that there were considerable differences in the quality of soils within the same area. Their discovery that soil at Anum was far less suitable for cotton-growing than at Labolabo led to the abandonment of the first plantation. One block of tests was devoted to ascertaining optimal planting and harvesting dates. Cotton planted too early tended to mature during the second rainy season (September–October) with the result that bolls frequently turned black and rotted; seeds planted in August generally escaped the effects of rain and mildew, but were sometimes cut short of a full crop by the early advent of the dry season.<sup>5</sup> Equally important were the tests on crop yields which the team conducted. Thus in 1905 W. H. Johnson recorded the following comparative yields at Labolabo:<sup>6</sup>

| Type of Cotton:                       | Native | American Upland | Afifi |
|---------------------------------------|--------|-----------------|-------|
| Yield of seed cotton (lbs. per acre): | 369    | 450–730         | 215   |

<sup>1</sup> W. H. Johnson to Nathan, 28 Sept. 1903; Nathan Papers, Box 296–7.

<sup>2</sup> Summary statement in Rodger (107) to Lyttelton, 7 March 1904; C.O. 96/416.

<sup>3</sup> Minute by Olivier, 28 Feb. on Rodger (56) to C.O., Feb. 1905; C.O. 96/427.

<sup>4</sup> For a disparaging assessment of British West African agricultural policy, see R. Green and S. Hymer, 'Cocoa in the Gold Coast: A Study in the Relations between African Farmers and Agricultural Experts', *Jour. Econ. Hist.*, xxvi, no. 3, Sept. 1966. With references to the general work of the Gold Coast Agricultural Department, the authors write: "Agriculture was confused with decorative horticulture, and no studies of crops, yields, or techniques of cultivation were attempted."—*Ibid.*, p. 306.

<sup>5</sup> B.C.G.A. Rept. on Cotton Growing at the Experimental Plantations at Anum and Labolabo, encl. in Rodger (56) to C.O., 6 Feb. 1905; C.O. 96/427.

<sup>6</sup> These results were later printed in Johnson's book, *Cotton and its Production*, 1926, p. 307.

It was reported that these tests compared favourably with average yields per acre in the United States at this time, though this comparison means little since the model farm cotton was grown under controlled conditions.<sup>1</sup> Finally, through the assistance of the Imperial Institute in London, further tests evaluated the quality of cotton fibre produced at Labolabo and elsewhere in Ghana. Certain specimens received gradations comparable to those for "middling" cotton from the United States (4½d. to 6d. per pound).<sup>2</sup> But the real question was whether cotton of uniform quality could be produced by growers at a profit on a sustained basis. Unfortunately, the yield of cotton lint per pound of raw unginned cotton tended to be low for most West African varieties. Other studies on cotton produced in the Gold Coast (both American and indigenous varieties) showed considerable irregularity in length, strength, and fineness of fibre.<sup>3</sup>

In addition to planting experiments, the B.C.G.A. and the Gold Coast Department of Agriculture team launched a rudimentary programme of "agricultural extension" by distributing free cotton seeds and providing planting and tillage instructions to farmers in surrounding villages. W. H. Johnson as Director of Agriculture exhibited some of the resourcefulness characteristic of the better self-trained professionals who staffed colonial agricultural departments in this period. During the first years of the Labolabo experiment, Johnson and his staff spent many days in the field and distributed some 5,560 pounds of American Upland cotton seed directly to growers in the south-eastern states of eastern Krobo, Akwamu, and Krepi.<sup>4</sup> Touring peasant farms in 1903-4 he reported that the seeds of American cotton planted on plots in and around Sra, Odumasi, Kpong, and other eastern towns had germinated and seemed to be in a healthy condition. At three of the locations he found that chiefs were trying to induce their people to plant the new seeds and to improve cultivating techniques through instruction on experimental plots. In a number of instances chiefs and village headmen requested more cotton seed after demonstrations had been carried out.<sup>5</sup> Though officials reported that some 2,000 acres of small-holders' land surrounding the model farm was under cotton cultivation partly as a result of the team's instructional activities, the duration and scope of these efforts was limited.

Short-staffing was a perennial problem in the Gold Coast Agricultural Department: frequent invalidings and resignations owing to low pay meant that the full

<sup>1</sup> One estimate found in the Gold Coast documents indicated that typical yields on average land in the southern states of America ran about 250 pounds of clean cotton or 750 pounds of raw cotton per acre. Rodger (35) to C.O., 21 Jan. 1905; C.O. 96/427.

<sup>2</sup> *Gold Coast Annual Report for 1909*, p. 20.

<sup>3</sup> Imperial Institute Report: Parl. Papers (1914-15), XLIII, (Cd. 7622-7), p. 20.

<sup>4</sup> Johnson began his career as chief horticulturalist for the Marquis of Salisbury at Hatfield. Subsequently employed on the staff of Kew Gardens, he acquired a knowledge of tropical economic plants. He was appointed Curator of the Botanical Gardens, Aburi, Gold Coast, in 1898 and was made Director of Agriculture when that department was established in 1904. He served as Director of Agriculture for Southern Nigeria, 1910-19. Johnson received credit from the Gold Coast governor for his scientific knowledge, but his later career was chequered owing to serious personality differences with colleagues.

<sup>5</sup> W. H. Johnson, 'General Remarks on Assistance Necessary to Develop the Cotton Growing Industry', encl. in Nathan (298) to Secretary to B.C.G.A., 2 Oct. 1903; C.O. Afr. Conf. Print 745.

complement of five Europeans was never on duty. In early 1907 the Governor reported that there were three unfilled vacancies in the Department, including Director of Agriculture and two curators.<sup>1</sup> A proposal for the training of a number of African "subordinates in agriculture" was apparently shelved in this period.<sup>2</sup> Furthermore, cotton was only one of a number of forest and agricultural crops which absorbed the attention of the research staff. It is worth noting that Johnson wrote pamphlets on the cultivation and collection of cocoa, rubber, kola nuts, as well as cotton, which were translated into the Ga and Twi languages.<sup>3</sup>

If the work of Johnson and his staff can be viewed as representative, then it may be necessary to qualify to some degree the conventional criticism that British colonial agriculturalists made no effort to improve food-crop cultivation. The Director hoped to augment the regular starchy diet of Africans through more widespread cultivation of legumes and other green vegetables.<sup>4</sup> Encountering difficulty in persuading farmers to turn over separate tracts of land to intensive cotton cultivation, he advised them to interplant cotton with food crops in an improved way. In the traditional method of interplanting fairly high ridges of dirt were built up with the short hoe: cotton seeds were planted on the crest of the ridge, with food crops such as yams, cassava, and maize planted along the sides.<sup>5</sup> Because African growers tended to plant their food crops too thickly (thus shielding young cotton plants from needed sunlight), Johnson and his staff directed farmers to give greater attention to wider spacing between seeds and to more regular weeding and thinning during the growing season.<sup>6</sup> He also urged them to remove the stalks of old plants before reseeding at the commencement of each growing season. One of the interesting side results of the experimental programme was the increase in maize yield per acre from this improved double-cropping method.<sup>7</sup> From the standpoint of labour inputs there is a good deal to be said for mixed farming. For soil rejuvenation, however, it is now recognized that use of maize as a second crop in cotton interplanting is of little value.<sup>8</sup> Today agricultural extension officers specializing in expanded cotton production in Africa stress the importance of parallel improvements in food-crop yields on separate plots in order to release land for cotton cultivation.

In several areas where instruction in systematic cultivation was attempted, notably in Krobo, the apparent indifference of small-holders to cotton can be

<sup>1</sup> Rodger to Elgin, 7 March 1907; ADM 1/2/66; Ghana National Archives.

<sup>2</sup> Rodger (260) to Elgin, 17 June 1907; ADM 1/2/68; G.N.A.

<sup>3</sup> W. H. Johnson, *The Cultivation and Preparation of Cocoa*, first issued Aburi, 1899; also *The Cultivation of Cotton*, 1903. The impact of these pamphlets was probably minimal.

<sup>4</sup> W. H. Johnson, *The Cultivation of European Vegetables in West Africa*, Aburi, 1903.

<sup>5</sup> Rept. by Johnson, encl. in Rodger (107) to Lyttelton, 7 Mar. 1904; C.O. 96/416. See also W. H. Johnson, *Hints on the Cultivation of European Vegetables in West Africa*, Accra Government pamphlet, 1902.

<sup>6</sup> Rept. by Johnson, 1904; *Ibid.*

<sup>7</sup> The maize yield on supervised plantations was said to be good, averaging 50 bushels to the acre.—Rept. on the Labolabo Experimental Cotton Farm, encl. in Bryan (490) to C.O., 15 Sept. 1905; C.O. 96/432.

<sup>8</sup> It took another thirty-five years of research for soil scientists to discover that cowpeas could be successfully interplanted with cotton to rejuvenate soil without substantially reducing yields. For details see B. Christidis and G. Harrison, *Cotton Growing Problems*, N.Y., 1955, p. 161.

traced to the far greater profitability of cocoa per unit of labour.<sup>1</sup> Borne forward by steadily rising world prices, cocoa was beginning its surge to prominence as the dominant cash crop of southern Ghana;<sup>2</sup> and in areas where soil and climatic conditions were right, the incentives for concentration on cocoa were far too strong for farmers to take up simultaneous cultivation of other cash crops, especially cotton, which required heavy labour inputs and yielded meagre and uncertain returns.<sup>3</sup> In general, however, there was never more than a slight possibility of competition between cotton and cocoa in the same districts. Cotton requires plenty of sunlight; and it did not do well under the thick shade canopy in the central parts of the semi-deciduous forest zone where cocoa flourished. It should be stressed that the Department sought to promote cotton mainly in those parts of the trans-Volta triangle (notably Krepí and Akwamu) on the periphery of the forest zone which were less well endowed for cocoa-growing, and which in some cases supported no cash crops at all.<sup>4</sup>

The failure to propagate American cotton in Ghana at this juncture can be traced primarily to the inroads of insect pests, particularly stainers (genus *Dysdercus*), which punctured and discoloured developing bolls early in the season, and several varieties of boll worms (genus *Oxycarenus*) which sucked juices from cotton seeds and rendered them infertile.<sup>5</sup> Diseases such as cotton rust and areolate mildew also afflicted the American cotton plants. Though it was subsequently shown that planting of hybrid varieties between rows of maize might slow the spread of destructive pests, pesticides for coping with the boll worm had not been developed. It was thus extremely difficult for farmers to produce fertile new seeds from the previous year's stock. To have continued growing American Upland seed, the government or the Association would have had to distribute new seeds to growers every year, a task that neither were willing to perform.<sup>6</sup> The American variety known as "Allen's Long Staple" which was extended with considerable success in Northern Nigeria after 1913 did not appear to be adaptable to conditions in the Gold Coast.<sup>7</sup>

Despite the failure of American Upland cotton, systematic commercial production of improved indigenous varieties might have taken hold in certain parts of

<sup>1</sup> See, for example, comment in Actg. Govr. Bryan (222) to C.O., 9 May 1911; ADM 1/2/76.

<sup>2</sup> Ghana's famous "cocoa-growing revolution" has been treated in a number of well-known sources: Polly Hill, *The Migrant Cocoa-farmers of Southern Ghana*, Cambridge, 1963; Margaret J. Field, 'The Agricultural System of the Manya-Krobo of the Gold Coast', *Africa*, 14, no. 2, April 1945, pp. 54-65.

<sup>3</sup> An interesting insight into the attempts of African farmers is found in a comment by Mate Kole, Konor of Eastern Krobo, Record of Discussion with Actg. Govr. L. R. Arthur, 30 Aug. 1902; Nathan Papers, Box 317-19, Rhodes House, Oxford.

<sup>4</sup> Cotton-growing Experts' Rept.: App. 3 to Botanical-Agricultural Dept. Rept. for 1903, encl. in Rodger (107) to Lyttelton, 7 Mar. 1904; C.O. 96/416. Also Rept. by Johnson on Expedition to Krepí and Togoland, encl. in Nathan (375) to C.O., 2 Oct. 1903; C.O. 96/410.

<sup>5</sup> B.C.G.A. Rept. by J. W. Chandler, 4 Jan. 1905, encl. in Rodger (56) to C.O., 6 Feb. 1905; C.O. 96/427, *Gold Coast Annual Report for 1909*, p. 20.

<sup>6</sup> Since 1945 DDT has been used effectively against cotton pests in some parts of Africa. In Northern Ghana, however, control of boll worm remains a barrier to the development of improved varieties of cotton up to the present day.

<sup>7</sup> W. H. Johnson, *Cotton and its Production*, 1926, p. 118.

the eastern Gold Coast had it not been for inept handling of processing and buying operations in the initial stages. Of crucial importance was a mechanized ginning and buying installation that would have enabled the colony to market a sufficiently strong and clean fibre to attract buyers in Europe. Closely related to this was the need for a guaranteed stable price which would serve as a strong economic incentive to potential growers during the opening years of trial operations.<sup>1</sup> Notwithstanding the provisions in their original agreement with the Imperial government, the local agents of the Cotton Growing Association failed to set up any kind of ginning and buying centre during the first crucial years of the Labolabo project. As a temporary expedient the colonial government entered into an agreement with the F. and A. Swanzy mercantile firm, whereby the latter would utilize a small steam gin at their trading factory at Akuse on the western bank of the Volta and purchase all cotton brought to them from the Krepi-Akwamu-Krobo region.<sup>2</sup> The Swanzy agent agreed to stabilize the price of 1d. per pound for all indigenous cotton and 1½d. for all American or exotic varieties brought in.<sup>3</sup> Interviews by officials with chiefs made it clear, however, that the promise of this guaranteed price offered an insufficient recompense to growers for the labour involved in harvesting and transport. In Governor Nathan's words: "The native is not keen on cultivating cotton for which he does not get more than 1d. per lb. in the unginmed state and this price added to the cost of transport, ginning, pressing and baling and to freight charges leaves very little if any profit for the exporter."<sup>4</sup> Furthermore, the small Swanzy ginning facility proved inadequate to the task: substantial quantities of raw cotton (150,000 pounds) were brought in by growers for ginning during the first year's operations, but because neither the government nor the Association had made provision for storage, large stocks spoiled without being exported.<sup>5</sup> By the time the B.C.G.A. had installed its own larger steam-powered ginnery at Labolabo in 1907, disillusionment among growers had set in. In marked contrast to the British, the Germans in Togoland were to establish no less than nine separate interior ginneries and demonstration centres<sup>6</sup> which accelerated the flow of small-holder production and reduced transit costs to the coast (since ginning removes about two-thirds of the raw cotton's surplus weight).

## IV

How far increases in cotton exports from Gold Coast ports after 1903 can be attributed directly to the impetus of British promotional efforts is hard to determine. Although some contemporary official reports stressed that cotton exports from the Colony had multiplied nearly tenfold from 10,443 pounds volume in 1903

<sup>1</sup> Cotton Growing Expert's Rept., App. 3 to Annual Dept. Rep., encl. in Rodger (107) to Lyttelton, 7 March 1904; C.O. 96/416.

<sup>2</sup> Copy of letter from Gov. Nathan to British Growing Association, encl. in Nathan (471) to C.O., 15 Dec., 1903; C.O. 96/411.

<sup>3</sup> Visit to Cotton Plantations at Anum and Labolabo, encl. in Rodger (35) to C.O., 21 Jan. 1905; C.O. 96/427.

<sup>4</sup> Nathan (36) to C.O., 25 Jan. 1903; C.O. 96/406.

<sup>5</sup> Johnson, Rept. on Expedition to Krepi, above.

<sup>6</sup> Robert Cronevin, *Histoire du Togo*, Paris, 1962, p. 186.

to 92,886 pounds in 1906,<sup>1</sup> the attempt to identify this with the impact of the Government-B.C.G.A. project was misleading, since raw-cotton exports from Volta River ports had been nearly as high during several years of the period 1890-5. Such cotton as was sent to Akuse for ginning and export down river was either American cotton grown under controlled conditions at the Labolabo model farm or indigenous varieties cultivated in the traditional way in the heart of the bush. For a brief period there were high hopes that systematic cotton cultivation might be in the process of establishing itself as a major export industry in the British Gold Coast. In 1905 the Director of the Labolabo operation reported: "Almost all day carriers pass the farm with loads of cotton. The agent informs me that most of the cotton comes from the Krepi and Peki districts, while a part of it comes from further up country."<sup>2</sup> In fact, a detailed breakdown available for the year 1906 indicates that 47,837 pounds or about one-half of the cotton exported from the Gold Coast Colony in that year was grown in those Ewe states under German control, transported down the Volta to Swanzy's ginnery at Akuse by canoe, further down river by steam launch, and then exported to Europe from Ada or Accra. Of the remaining 45,049 pounds of cotton grown in British territory in 1906, approximately 25,000 pounds was shipped by the Labolabo station.<sup>3</sup> The establishment of the Gold Coast model cotton-growing farm and ginnery and the offer of a guaranteed price undoubtedly had some effect on increased trade flows from the north-eastern interior in this period. An additional factor was the continued shortage of better-grade American cotton in European markets and maintenance of generally good world prices.<sup>4</sup> The fall-off in Gold Coast cotton exports in 1909-10 can be traced to the completion of the Togoland railway which linked the port of Lome with the Peki cotton-growing district and enabled German merchants to absorb the cotton of British Krepi as well.<sup>5</sup>

## V

The withdrawal of both the colonial government and the British Cotton Growing Association from the project in south-eastern Ghana by 1910 did not mark the end of cotton-growing experimentation. Rather, officials decided to shift their centre of operations to the recently annexed savannah lands of northern Ghana which had not yet been opened to any kind of economic exploitation. Unlike the

<sup>1</sup> Gold Coast Cotton Exports, 1899-1916 (lb.).

| Year | Volume | Year | Volume | Year | Volume |
|------|--------|------|--------|------|--------|
| 1899 | 14,100 | 1905 | 29,100 | 1911 | 9,600  |
| 1900 | 20,900 | 1906 | 92,900 | 1912 | 20,400 |
| 1901 | 2,600  | 1907 | 56,100 | 1913 | 27,600 |
| 1902 | —      | 1908 | 51,500 | 1914 | 23,600 |
| 1903 | 10,400 | 1909 | 31,300 | 1915 | 12,000 |
| 1904 | 57,700 | 1910 | 11,400 | 1916 | 18,000 |

Sources: *Gold Coast Blue Books*; *Gold Coast Agricultural Department Report for 1910*.

<sup>2</sup> Rept. by J. W. Chandler, 4 Jan. 1905; above.

<sup>3</sup> Gold Coast Trade Report for 1906, encl. in Rodger (145) to Elgin, 17 Apr. 1907; ADM 1/2/67; G.N.A.

<sup>4</sup> E. Goulding, *Cotton and Other Vegetable Fibres*, Imperial Inst. Handbook, 1917, p. 74.

<sup>5</sup> Indeed, much of the cotton ginned by the British Swanzy firm was also shipped to Hamburg.—Rodger to C.O., 7 Nov. 1906; ADM 1/2/66; *Gold Coast Customs Dept. Rept. for 1907*, p. 10.

south, the Northern Territories were nearly devoid of valuable forest or mineral resources. Intensive cultivation of the land was, in general, limited to a relatively short rainy season of about three to five months. During the lengthy dry season much of the land lay parched and unused. There was some transit trade in kola nuts (carried mainly by Hausa dealers) and cattle through these territories; but the only significant product collected locally for export to the South was shea butter. Little was then known of the political, economic, and social systems of major ethnic groups of the Northern Territories, including the Dagomba, Gonja, Konkomba, and Tallensi people.<sup>1</sup> Agricultural pursuits centred on production of food crops, chiefly guinea corn and millet, together with yams and rice using the "bush fallow" method of cultivation.

For all this, the Chief Commissioner of the Northern Territories and others were hopeful about the prospects for cotton: it was a traditional crop in the North, and there seemed to be no other product of similar commercial potential.<sup>2</sup> Environmental conditions in the northern savannah, though far from ideal seemed roughly similar to those in Northern Nigeria, where a major cotton-growing project was then under way.<sup>3</sup> There was an abundance of sunlight, perhaps the most crucial factor in cotton-growing. The land of the northern region, though generally less rich than that of the forest zone owing to the lack of organic matter, none the less contained pockets of fertility, including the reddish-brown lateritic soils which experts list as quite suitable for cotton-growing.<sup>4</sup>

As in the south-east earlier, the government entered into both research and demonstration as simultaneous operations. By 1909 colonial agriculturalists and agents of the Cotton Growing Association had cleared a plot of 18 acres at Tamale where cotton-growing and other forms of scientific crop cultivation could be demonstrated for the benefit of local farmers.<sup>5</sup> Contributions in aid of the project totalled £2,000 per year (£1,000 each by the colonial government and the association), not an illiberal amount when it is considered that the general expenditure on agriculture in the Northern Territories (apart from cotton) was only slightly over £200 per annum. The environmental obstacles proved formidable. For example the unpredictability and intensity of rainfall during the single wet season in the north made scheduling of sowing and harvesting difficult. As a first step, therefore, detailed tables on monthly rainfalls were drawn up as an aid to planting.<sup>6</sup> It was discovered, moreover, that much of the acreage in the Tamale area (which had been under virtually continuous cultivation in recent years) was impoverished and would

<sup>1</sup> The first major ethnographic study of the peoples of the Northern Territories was that by R. S. Rattray in 1929, *The Tribes of the Ashanti Hinterland*, 2 vols, 1932. More recent and intensive studies include M. Fortes, *The Dynamics of Clanship Among the Tallensi*, 1945; D. Tait, *The Konkomba of Northern Ghana*, Oxford, 1961.

<sup>2</sup> Rept. by Lt-Col. Morris on the Northern Territories, encl. in Rodger (160) to Lyttelton, 2 Apr. 1904; C.O. 96/417. In recent years considerable success has been achieved with rice production.

<sup>3</sup> For a complete account of the B.C.G.A.'s work in Nigeria, see 'Development of the Cotton-Growing Industry in Nigeria', *The Empire Cotton Growing Review*, vol. XLIII, no. 3, 1966.

<sup>4</sup> For a discussion of soils in the Northern Territories of Ghana, see chapter by P. N. Ahn, in *Background to Agricultural Policy in Ghana*, University of Ghana, Legon, 1969, p. 102.

<sup>5</sup> *Annual Report on the Northern Territories for 1909*, p. 9.

<sup>6</sup> Despatch from H. Bryan (663) to C.O., 5 Oct. 1910; ADM 1/2/75.

not support cotton without the addition of manure. In contrast to the Krepi project greater effort was made to disperse instruction and demonstration in several different districts. Within two years field workers, in co-operation with local chiefs, had set up small model cotton-growing plots in some eighteen villages which became centres for the distribution of seeds.

Profiting to some extent from previous mistakes in the southeast, extension officers at Tamale also devoted greater attention to assisting growers with ginning, pressing, and baling. Shortly after the opening of the project the Cotton Growing Association installed the first of several steam-driven gins and presses at Tamale. Public demonstrations given in the market-place before large crowds were said to have created "something of a sensation."<sup>1</sup> In 1912 additional buildings for housing a gin and press had been constructed at Yapei or Tamale port on the Volta. By raising the guaranteed price to 1½d. per pound for indigenous cotton and 1¼d. for American cotton, the agents hoped to stimulate small-holder planting according to fairly strict guidelines.<sup>2</sup> In 1914 the Cotton Growing Association set up other seed distribution and ginning stations at Wa, the chief town of north-western Ghana, and at Gambaga in the extreme north-east, and small quantities of raw cotton were brought by growers to each of these stations during the next two years.<sup>3</sup> The minor upswing in Gold Coast cotton exports after 1912 can be attributed to the work of the B.C.G.A. team in drawing a limited number of peasant cultivators in the Northern Territories into commercial production.

Viewed in the light of the limited scientific data then available on the genetics of *Gossypium* much of the research carried on at Tamale and at Labolabo seems relatively sophisticated. When plots of American cotton again proved vulnerable to the attacks of cotton stainers and bollworms,<sup>4</sup> government and B.C.G.A. researchers at the model farms experimented with hybridization of indigenous and American varieties. In a number of cases, specimens of native "Green Seed" and "Volta" cotton were selected as female parents and cross bred with various other types, including Peruvian and sub-types of Upland cotton, including "Black Rattler," "Culpepper," and "Richmond."<sup>5</sup> Researchers were gratified when the first-generation hybrids yielded larger quantities of lint per acre than all previous types cultivated, while exhibiting much of the hardiness of their female parents. But the long-term results proved disappointing as the new plants possessed a common weakness of hybrids, progressive decline in the second and third generations. Experiments with cross-breeding and acclimatization of new exotic varieties were never totally abandoned at Tamale, but field workers gradually accepted the fact that the main hope for success rested with the improved cultivation of domestic types. Near the end of the period under review here, demonstrators reported that

<sup>1</sup> *Ann. Rept. on Nor. Terrs. for 1909*, p. 9.      <sup>2</sup> *Annual Report on the Northern Territories for 1911*, p. 8.

<sup>3</sup> *Annual Report on the Northern Territories for 1916*, p. 7.

<sup>4</sup> *Gold Coast Agricultural Dept. Rept. for 1909*, App. E, Tamale Station, p. 26.

<sup>5</sup> A cross of "Volta" × "Black Rattler" was said to have been most promising in terms of yield.—*Gold Coast Annual Report for 1905*, p. 19; G. C. Dudgeon, *The Agricultural and Forest Products of British West Africa*, Imperial Institute Handbook, 1922, pp. 78–9.

indigenous "Dagomba" cotton seeds dressed with cow manure germinated quite rapidly and showed increased yields of over 12 per cent in comparison with those from unmanured land.<sup>1</sup>

## VI

Whereas early twentieth-century British cotton-growing teams had quite a realistic appreciation of the environmental difficulties which confronted them, it is doubtful whether they fully comprehended the economic and human resource implications of their work. There are practically no detailed references to the quantity, quality, or price responsiveness of local labour in contemporary government reports. The nearly complete lack of ethnographic surveys and the undeveloped state of anthropological science in this period meant that most officials in the Northern Territories were ill equipped to relate new cultivation techniques to traditional economic systems and socio-political structures. In contrast to the British experience in Buganda (East Africa) where the colonial government made effective use of a centralized hierarchy of chiefs in inducing African growers to take up cotton production, use of traditional rulers in some of the states of Northern Ghana (notably Dagomba) as seed distributors and buying sub-agents was ineffective and may have actually inhibited growers from taking up the new crop.<sup>2</sup>

It can be argued furthermore that cotton demonstration teams gave inadequate attention to the difficult adjustments in traditional attitudes and work routine which farmers in the Northern Territories would have to make in shifting from what was basically irregular subsistence cotton-growing to production for export. Systematic cotton-cultivation (whether by small-holders or on large plantations) is one of the most demanding forms of crop production in terms of labour inputs because it entails carefully timed planting, sowing of seeds at regular intervals, periodic thinning of cotton plants, constant weeding, and rapid and careful harvesting to avoid spoilage.<sup>3</sup> Uniform quality is a major requirement. Whether adherence to such standards could have been rapidly instilled in occasional visits by the small number of agricultural advisers available in this period is debatable. Today, of course, extension experts are more acutely aware of the problems of transferring technical skills from one culture to another, and social scientists have worked out sophisticated criteria for predicting the rate of diffusion of specific innovations in particular societies, including (1) relative economic advantage, (2) compatibility with old ways, (3) complexity, (4) divisibility (the degree to which the innovation may be tried on a limited basis), and (5) communicability.<sup>4</sup> Contemporary cotton-

<sup>1</sup> *Gold Coast Agricultural Dept. Rept. for 1915*, p. 12.

<sup>2</sup> Details on the optimal conditions which made for success in Buganda can be found in Cecil Erlich, 'Cotton and the Uganda Economy, 1903-19', *Uganda Journal*, Sept. 1957, pp. 162-75. For information on attempts to use chiefs as agents in Dagomba in the late 1920's see Minute by Director of Agriculture, 25 Jan. 1928 in ADM 56/1/404. I am indebted to R. G. Thomas for this reference.

<sup>3</sup> There is substantial agreement on these essentials in both contemporary and recent handbooks. For two examples, see John Percival, *Cultivation and Harvesting of Cotton in Nigeria*, British Cotton Growing Association Pamphlet, Manchester, 1906, pp. 4-12; and *Cotton Production in Africa*, U.S. Foreign Agriculture Report, no. 117, Washington, D.C., 1960, p. 17.

<sup>4</sup> E. Rogers, *The Diffusion of Innovation*, N.Y., 1962, pp. 124-39.

growing experts seem to have banked heavily on compatibility with traditional ways as the key to success. In fact the shift to systematic commercial cultivation of cotton for many small-holders in the Northern Territories entailed a more radical departure than officials imagined.

The extent to which socio-cultural values may act as a constraint on the development and expansion of commercial agriculture in peasant communities is still hotly debated by Africanists, and it is not the task here to examine this aspect of the problem in detail. It may be that in some areas such diverse socio-cultural factors as the relative importance accorded to economic activity in the society, the small size of the traditional group within which production is organized, and attitudes towards land, cattle, or the use of animal fertilizers inhibit innovation or economic change. On the other hand, many recent studies emphasize the adaptability of traditional African social institutions to changes in production. For a significant group of economists and economic anthropologists it is the economic factors which control the adoption of new technology, and in their views most African farmers are quite rational in assessing these factors.<sup>1</sup> That an export-oriented production system had not yet penetrated many parts of the Northern Territories by 1910 certainly did not mean that the people were non-rational about economic matters or unresponsive to price incentives.<sup>2</sup> What expatriate or government advisers consider to be a "good" price, however, may not always be a sufficient incentive to spur widespread acceptance of new production techniques or a new crop. A common but mistaken assumption of the time was that if African peasant farmers possessed land and labour in excess of subsistence needs, then such unused resources could be easily turned to export-crop cultivation. This failed to take account of the relatively weak need to earn and spend cash incomes among many peasant cultivators, and the relatively high preference for leisure once subsistence requirements had been fulfilled.<sup>3</sup> What early twentieth-century colonial officials tended to miss was the extent to which West African farmers were generally motivated in their choice of crops not by yield per acre or total profit over an extended period but by the return per man-hour of labour. Beyond a certain level of labour output, regardless of return, cultivators in the Northern Territories preferred free time for other pursuits.<sup>4</sup> Given the choice between traditional production of food and other crops for local markets plus leisure and heavy labour on an uncertain and unremunerative new export crop, peasant farmers quite naturally chose the former. Even in an efficient cotton-growing region such as Uganda, as recent

<sup>1</sup> See for example Victor C. Uchendu, 'Africa's Small Farms: Parameters for Policy Formation' in R. E. Dumett and L. J. Brainard (eds.) *Problems of Rural Development*, Leiden, E. J. Brill, 1975.

<sup>2</sup> That farmers in western Dagomba expanded food crop production for market upon learning that surpluses could be sold to the increasing numbers of colonial civil servants at Tamale demonstrated a sensitivity to profitable trading opportunities.—*Northern Territories Report for 1911*, p. 8. Later they took up commercial production of groundnuts without government aid.

<sup>3</sup> One has to be wary about misinterpreting this term in the African context. Some critics assume that it is a euphemism for pursuit of pleasure, or mere idleness. This overlooks the fact that much of an adult African's leisure time was devoted to maintenance chores, rearing children, and other family duties.

<sup>4</sup> Typical government reports of the colonial period explained N.T. farmer's attitudes towards commercial agriculture as one of mere "lack of interest."

experience shows, farmers will forgo cotton if some other marketable crop requiring fewer man-hours of labour per unit of return is introduced.<sup>1</sup>

It was perhaps a testament to the patience of the cotton-growing advisers that some research in the Northern Territories was carried on spasmodically for another twenty years despite scant success. For some years optimistic reports continued to be disseminated for the benefit of Members of Parliament and the Colonial Office staff, but there was a wide gulf between the results of experimental plant-breeding at government stations and the diffusion of new growing techniques among the people. A progress report issued in 1915 noted that the maximum average amount of seed cotton grown at the Tamale station had doubled over the previous season from 72.5 to 158.3 pounds per acre.<sup>2</sup> But most of the cotton seed distributed to growers by British advisers seems to have been cultivated by traditional methods with little improvement in yields or quality. Furthermore, the price offered for local cotton at the buying stations was artificial in terms of its value on the international market. The B.C.G.A. had to absorb the prohibitive costs of transport by head portage overland from Tamale to Kintampo and thence down the Volta to the coast.<sup>3</sup> They could scarcely be expected to subsidize local prices indefinitely when comparative advantage on the international market lay with a number of other African countries, in addition to Egypt, India, and the southern United States. New experiments to enhance soil fertility and cotton yields through use of green manure, though promising, proved far too costly for introduction on a large scale. The volume of cotton which peasants in the north brought in for ginning and export appeared significant, but was relatively small. Even the price which the B.C.G.A. offered was insufficient to attract many African growers. During the first half of 1916, for example, some 35,445 pounds of seed cotton and 6,537 pounds of cotton lint were purchased from peasants in the Northern Territories by agents at the three stations of Tamale, Gambaga, and Wa; but the size of these harvests was not commensurate with the amount of seed originally distributed and planted.<sup>4</sup> The unremunerative nature of the operations, and the general economic strictures imposed by the First World War, finally forced the British Cotton Growing Association to withdraw its support from any further cotton-growing and buying experiments in the Gold Coast in 1916, although the colonial government continued to maintain a small experimental plot under cultivation at Tamale until the late 1920's. Today, the government of independent Ghana and various international agencies are still conducting intermittent research in the hope of developing a marketable strain of exotic or hybrid cotton that will survive and attract growers in the Northern Territories.

<sup>1</sup> There has been a shift in parts of Uganda away from cotton towards coffee-growing in recent decades, because cultivation of one acre required only about 80 man days of work per year as compared to 140 for cotton; and an acre of coffee yields returns two or three times as great.

<sup>2</sup> *Gold Coast Agricultural Department Report for 1915*, p. 12.

<sup>3</sup> The cost of transporting a load of ginned cotton from Tamale to the Coast by headload and by canoe was greater than its value. Had cultivation of a marketable grade of cotton proved feasible in the north, transport would have loomed as a major problem. The Chief Commissioner thought that transport costs might be considerably reduced by dredging the upper reaches of the Volta.—Rept. by A. Morris, Commr., Northern Territories, 28 Feb. 1902, encl. in Nathan (162) to C.O., 12 May 1902; C.O. 96/396.

<sup>4</sup> *Annual Report on the Northern Territories for 1916*, p. 7.

# The Customary Acre: an Indeterminate Measure

By ROBERT S. DILLEY

ONE of the types of measurement with which the agricultural historian is most concerned is area; the area of fields and of farms, the area under crops, and the area lying fallow. The traditional measure of area in Britain, for the last several centuries, has been the acre, and most agricultural studies have been based on and expressed in acres. Unfortunately it has not always been realized that the acre used, until relatively recently, was not necessarily the statute acre of 4,840 square yards but often a variable unit known as the customary acre.<sup>1</sup> Some parts of the country continued to use customary acres until the legal enforcement of statute measure in the early nineteenth century, considerably complicating the use of sources from these regions.

One county where these complications may be observed is Cumberland. The statute acre was not generally in use there until the late eighteenth century; before 1700 the customary acre seems to have been employed almost exclusively. There is a widespread belief that the Cumbrian customary acre was the equivalent of 3 statute acres. As far back as 1769 it was claimed that the acres used in the sixteenth-century Percy Survey of Cumberland "are customary acres according to the computation of the country and every such estimated acre often contains near 3 acres of land statute measure and will sometimes exceed that quantity."<sup>2</sup> This multiplier reappears, apparently independently, in a 1909 article on early Cumbrian agriculture,<sup>3</sup> and is used by G. G. Elliott in his recent publications on local field-systems.<sup>4</sup> Its validity is not confirmed by an examination of the evidence. A searching enquiry into the value of the Cumbrian customary acre was carried out at the beginning of this century for use in a court case, the legal argument depending in part upon the measurement of certain lands in early surveys of the manor of Aspatria.<sup>5</sup> Expert witnesses were examined on the subject, though not all were precise: "My recollection is that the customary acre is nearer 2 statute acres than 1," said one; "I have heard old people say that the 'old yacker' was about as 5 is to 7; others have given it as 4 is to 5," reported another. More definite was the President of the local Antiquarian and Archaeological Society, who stated: "The customary acre differed not only in different counties but sometimes in the same county. This difference seems to have been ruled by the number of feet reckoned to the rod or pole. . . Assuming

<sup>1</sup> A customary acre was the measure normally used, or "customary." It could be argued that if use of the statute acre were normal it was the local customary acre. In practice, the term is reserved for non-statute measures.

<sup>2</sup> Brief in Chancery; 12 Oct. 1769. County Record Office, Carlisle (C.R.O.): D/Ben/1276<sup>1</sup>.

<sup>3</sup> F. Grainger, 'Agriculture in Cumberland in Ancient Times', *Trans. Cumberland and Westmorland Antiquarian and Archaeological Society*, n.s., ix, 1909, p. 124.

<sup>4</sup> For specific statement see G. G. Elliott, 'The Enclosure of Aspatria', *ibid.*, lx, 1960, p. 98n.

<sup>5</sup> Lord Leconfield v. C. H. Joliffe: in the High Court of Justice, Chancery Division; 1, 2, and 3 June 1904. Transcript of shorthand notes, C.R.O. D/Lec/315.

the fact, of which there is no doubt, that a rod or perch in length was reckoned at 7 yards, the inference is that the customary acre in Cumberland contained 7,840 yards."<sup>1</sup>

An acre consists of 4 roods of 40 square rods, poles, or perches,<sup>2</sup> so the length of the rod, pole, or perch used determines the size of the acre. The statute acre uses a rod of  $5\frac{1}{2}$  yards, giving an acre of 4,840 square yards. Customary acres, as stated, were based on rods of other lengths;<sup>3</sup> as short as 5 yards in Hampshire, and as long as  $8\frac{1}{2}$  yards in Lancashire.<sup>4</sup> The witness was overconfident, however, in asserting that the 7-yard rod was the only one used in Cumberland. Further evidence was provided giving other lengths: table I is based on these and other figures.<sup>5</sup> Thus the

TABLE I  
THE SIZE OF CUSTOMARY ACRES IN CUMBERLAND

| <i>Length of rod<br/>in yards</i> | <i>Size of acre<br/>in square yards*</i> | <i>Size of acre<br/>in statute acres*</i> |
|-----------------------------------|------------------------------------------|-------------------------------------------|
| 6                                 | 5,760                                    | 1.19                                      |
| $6\frac{2}{3}$                    | 7,111                                    | 1.47                                      |
| 7                                 | 7,840                                    | 1.62                                      |
| $7\frac{1}{9}$                    | 8,091                                    | 1.67                                      |

\*Figures rounded off where necessary.

Cumbrian customary acre was from one-fifth to two-thirds larger than the statute acre, a long way short of being three times the size. This makes a considerable difference to any calculation based on customary measure: for example, the identification of a sixteenth-century common arable field of 345 acres at Wasdale Head

<sup>1</sup> C.R.O. D/Lec/315: evidence of William Little of Penrith, Agent and Steward to Lord Lonsdale; of William Dickinson of Thorncroft, Workington; of Rev. Canon Simpson, D.D., of Kirkby Stephen.

<sup>2</sup> Not invariably: one witness at the Leconfield v. Joliffe trial noted that "In Bedfordshire an acre sometimes consists of 2 roods. . . In Dorsetshire the acre contains sometimes 184 and sometimes 180 perches. . . In Lincolnshire it contains 5 rods. . . In Sussex the customary acre is most variable—acres being found containing 107, 110, 120, 130, and even 212 perches. . . In Worcestershire it is sometimes 134 and sometimes 141 perches."—C.R.O. D/Lec/315: Mr Stewart Moore's report. Acres of 3 and of 5 roods were used in places in the 1801 Crop Returns: see H. C. K. Henderson, 'Agriculture in England and Wales in 1801', *Geographical Journal*, cxviii, 1952, p. 341n.

<sup>3</sup> This paper makes no attempt to examine the *origin* of customary acres. They may well have arisen from local variations in the amount that could be ploughed in a day (see R. A. Butlin, 'Some Terms used in Agrarian History', *Agric. Hist. Rev.*, ix, 1961, pp. 101–2) but were later consciously tied to the length of rod used. For a detailed examination of the origins of this measure see F. Seebohm, *Customary Acres and their Historical Importance*, 1914.

<sup>4</sup> Both from E. H. Smith, 'Lancashire Long Measure', *Trans. Historic Society of Lancashire and Cheshire*, cx, 1958, pp. 5–6. For a variety of others see R. E. Zupko, *A Dictionary of English Weights and Measures*, Madison, 1968, pp. 3–5.

<sup>5</sup> Kirklington Enclosure, 1735, C.R.O. D/Ha/2/18; Plan of Nether Common, Nicholforest, 1761, C.R.O. D/MBS/1/29 (6-yard rod). Plan of Haile Hall Estate, 1739, C.R.O. D/Lec/315; Survey of Wastes at Egremont, 1750, C.R.O. D/Lec (6 $\frac{2}{3}$  yard rod). Enclosure Agreement, Cardew, 1579, C.R.O. D/Lons; Survey of St Bees, Whitehaven and Moresby, 1707, C.R.O. D/Lons; Survey of Part of the Commons in Egremont, undated, C.R.O. D/Lec/315 (7-yard rod). Survey of Part of Drigg, 1756, C.R.O. D/Lec/315; Account of Lands at Gatesgarth, undated, C.R.O. D/Lec/315 ( $7\frac{1}{3}$  yard rod). There may have been other rods in addition to these in use.

was based on finding 115 acres listed in the Percy Survey and multiplying by three.<sup>1</sup> This figure, repeated in a recent regional study of the Lake District,<sup>2</sup> is almost certainly too large: use of the multipliers in table 1 suggests an equivalent of between 137 and 192 statute acres. Extended over a wide area such differences become serious.

A further problem is that the use of the customary acre may not have been invariable, even in early periods. Among those consulted in the 1904 Aspatria court case were the stewards to Lord Carlisle who commented: "We have never heard of a Cumberland Customary Acre, nor can we find any record thereof in the manorial books."<sup>3</sup> This may have been the result of careless searching, but it is possible that the statute acre alone had been used on that estate for centuries. In such a case 100 acres would mean 100 acres; not 119, 147, 162, or 167 acres. Moreover, many surveys were not the result of a careful measurement of the land. Methods were primitive and tedious; to save time and money many acreages were described as being "by estimation" and represented the surveyor's guess at the size of the field. Elsewhere, some areas were given "by repute": the compiler of the survey simply asked each farmer or his neighbours how big a particular field was reckoned to be locally.<sup>4</sup>

There are thus several difficulties involved in using surveys in which the basis for the measurement of the acre is not given. First, even if the most common local rod-lengths are known there is rarely any good reason for choosing one of them in preference to the others.<sup>5</sup> Second, it is not always possible to tell if the land has been measured or if the acreage was the result of guesswork or hearsay. Third, it cannot be assumed that each settlement always used the same acre: in Cumberland, Egremont Waste was surveyed at 6½ and 7 yards to the rod at different times,<sup>6</sup> and similar variations occurred in Lancashire.<sup>7</sup> Fourth, it cannot even be assumed that a single measure was used throughout one survey: a sixteenth-century surveyor of the large Dacre estate used statute measure in Yorkshire but the 7-yard rod in north Lancashire.<sup>8</sup> There is a suggestion that in Westmorland the size of the acre was varied deliberately, using the larger measure for poorer land, "and there was good reason for this, inasmuch that they proportioned the military duty according to the number of acres that a man possessed."<sup>9</sup> In view of these difficulties great care must be taken in using pre-nineteenth century acreages. The average size of fields or

<sup>1</sup> G. G. Elliott, 'The System of Cultivation and Evidence of Enclosure in the Cumberland Open Fields in the 16th century', *Trans. Cumberland and Westmorland Antiquarian and Archaeological Society*, n.s., LIX, 1959, p. 89.

<sup>2</sup> R. Millward and A. Robinson, *The Lake District*, 1970, p. 180.

<sup>3</sup> C.R.O. D/Lec/315: evidence of Messrs Carrick and Lee, Brampton.

<sup>4</sup> Such estimates may not have been based on disinterested accuracy. Of the 1801 Crop Returns a Wiltshire rector commented, "Farmers seem very unwilling to give a true account, being very apprehensive their crops are to be heavily taxed."—Henderson, *op. cit.*, p. 341.

<sup>5</sup> This problem is worse the more rods there are to choose from: Lancashire had rods of 6, 6½, 6¾, 7, 7½, 7¾, 7½, 8, 8½, and 8¾ yards.—Smith, *op. cit.*, pp. 7–10.

<sup>6</sup> C.R.O. D/Lec/315. <sup>7</sup> Smith, *op. cit.*, pp. 9–10.

<sup>8</sup> A. Harris, 'A Note on Common Fields in North Lancashire', *Trans. Historic Society of Lancashire and Cheshire*, CXIX, 1967, pp. 225–6.

<sup>9</sup> G. Atkinson, *Worthies of Westmorland*, I, 1849. Cited in C.R.O. D/Lec/315.

farms in various districts cannot easily be compared as the differences may be lessened or exaggerated by differences in the size of the acres used. Attempts to measure the growth and decline of common arable fields are similarly handicapped. General statements applied to large areas may also be affected: H. L. Gray wrote that in Cumberland "the arable fields were seldom 300 acres in extent, and often not above 50 or 100 acres."<sup>1</sup> Gray, however, treated all acres as statute and thus underestimated the size of fields in Cumberland by as much as 50 per cent.<sup>2</sup>

No simple solution can be offered to this problem: each survey must be examined individually in an attempt to establish the basis of the measurement used. Comparison with maps, where sufficiently early and sufficiently accurate maps exist, is a simple way of checking survey acreages. Where the size of acre cannot be determined this uncertainty must be acknowledged, and any quantitative statements or statistical calculations modified accordingly. Two assumptions can be made to help simplify matters a little. One is that a change of measures is unlikely during any one survey of any one township (though not impossible, as implied by the Westmorland quote, above). Thus the proportional distribution of holdings may be ascertained even if the total area is not precisely known. The other is that the different measures will tend to average out over several surveys of a wide area. In Cumberland, for example, a single field listed as 100 acres may have been anything from 100 to 167 statute acres in extent. A hundred such fields from several surveys would probably have totalled close to 14,000 acres, with a fairly small margin of error.<sup>3</sup>

There is much evidence that the use of customary acres, rather than statute acres, as a basis for land measurement was widespread. It is to be hoped that more studies will be carried out of the various local equivalents of this measure, and of the frequency of occurrence of each. Agricultural historians, especially those wishing to make quantitative statements, should be fully aware of the indeterminate nature of the customary acre.

<sup>1</sup> H. L. Gray. *English Field Systems*, Harvard, 1915, p. 231.

<sup>2</sup> Though aware of Seebohm's work, Gray makes no allowance in any area for possible variations in acre size, save for a brief mention of a Cornish acre (p. 264.)

<sup>3</sup> Such approximations can be made more accurate if something is known of the relative frequency of the use of each measure.

# List of Books and Pamphlets on Agrarian History

1974

Compiled by SARAH CARTER

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## NOTES ON CONTRIBUTORS

Dr E. J. T. Collins is Lecturer in Agricultural Economics and Associate Director of the Institute of Agricultural History in the University of Reading. He has written extensively on nineteenth-century agriculture, mainly on labour and technology, and is at present working on a history of the U.K. food industry since 1880.

Robert S. Dilley is Assistant Professor and Chairman of the Department of Geography at Lakehead University, Thunder Bay, Ontario, Canada. His research interests are divided between agricultural history and rural development, and he is currently working on the application of content analysis to historical geography and also the growth of recreation in north-western Ontario.

Professor Raymond E. Dumett is a member of the History Department of Purdue University, Indiana. His article is a fruit of his years of specialized research into the economic history of West Africa.

Cormac Ó Gráda, a Lecturer in the Department of Political Economy at University College, Dublin, has written on various aspects of nineteenth-century Irish economic history, including emigration statistics, supply responsiveness in Irish agriculture, and the Owenite community at Ralahine, Co. Clare.

Dr R. W. Unwin is Lecturer in Education in the University of Leeds. He is currently researching into aspects of education and society in Yorkshire since 1660.

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## NOTES AND COMMENTS *continued from page 138*

### INTERNATIONAL CONGRESS OF AGRICULTURAL MUSEUMS

The 4th International Congress of Agricultural Museums is to be held at Reading University on 5 to 10 April 1976. The main theme of the Congress will be the impact of industrialization on agriculture and rural life

since 1800. Further details of the arrangements may be obtained from Andrew Jewell, Secretary, International Association of Agricultural Museums, University of Reading, Institute of Agricultural History, Whiteknights, Reading RG6 2AG.

## Book Reviews

JOHAN DAVID, *L'Outillage Manuel de la Ferme. Essai de terminologie*. Centre Belge d'Histoire Rurale, publ. no. 31. Louvain, 1973. 104 pp. 76 illus. (No price stated.)

Every country has a dual language, that of the rustic or other skilled man, who designates his tools by some local name, although in a country like England this man would be sure to know, so to say, the classical or general appellation of his tools. In a country like Belgium which has two (if not three) languages in current use, and where the rural community uses Vlaamse or Waalse, this matter is more important than it might be elsewhere, except for the curious.

As M. David so pertinently remarks, it is essential, more especially perhaps for the historian, to have an exact or precise definition of each of the words (especially as even the dictionaries do not agree); and, for example, to distinguish between *le pioche* and *le houe*, so far as there is any difference between them in actual fact. The variation is possibly more one of pattern than of meaning, but this is only a wild suggestion. When research into the patterns of ploughs used in different places in England was made in the early years of the war a very large number of variations, some perhaps trivial, was discovered, the variations being based in local practice and prejudice. Of hand tools there is a very large variety in Belgium, and most of these have two names, one in each language. M. David has attempted to compare these names, and to distinguish between the wide variety of patterns. It is a work that will be of great value to curators of museums, and to the student of the history of agricultural practice.

G. E. FUSSELL

FRANK TYRER (ed.), *The Great Diurnal of Nicholas Blundell of Little Crosby, Lancashire, Vol. 3, 1720-1728*. Record Society of Lancashire and Cheshire, 1972. xi + 289 pp. 4 plates, 5 figures, and appendices. £5 to non-members.

The first two instalments of Nicholas Blundell's *Diurnal* were published by the Record

Society of Lancashire and Cheshire in 1968 and 1970. The third volume now issued completes the project and takes the diary from 1720 to its final entry in April 1728. The diary ends abruptly, nine years before its writer's death in 1737 at the age of sixty-eight. Precisely why Blundell abandoned his diary, so methodically kept for twenty-six years, must remain a matter for conjecture. Probably his failing eyesight contributed. More important, however, were the facts that from 1728 Blundell's time for writing was filled by another task, the compilation of a new Tenants' Book, while at the same time, having no male heir to succeed him, he became increasingly anxious and preoccupied with the problem of the descent of his estate.

Blundell was a Roman Catholic and part of the interest of his diary derives from its revealing comments on the way in which at local level religious differences could exist without creating social tensions and barriers. (On one occasion, for example, the Catholic diarist is found engaged in friendly disputation with a Quaker (p. 73).) But for readers of this journal Blundell's activities as farmer and landowner will provide the main interest, and as in the two previous volumes this final part of the diary contains much useful information about crops, farming operations such as draining and marling, and about the weather, marketing, wages, rents, and prices.

R. C. RICHARDSON

RUDOLF MAJUT, *Über hippologische Bezeichnungen. Tiernamen und ein gotischer Pflanzenname*. Beiheft zur Zeitschrift für Deutsche Philologie, 2, 1972. 180 pp.

This book is very difficult for an agricultural historian to describe. Suffice it to say that it is an exercise in historical philology confined to the study of what might be called horse words. An example that immediately springs to mind, with memories of a hot summer in the Schwarzwald, is *Pferdefliege*. This is discussed at some length and with considerable learning, an excellent indication of the kind of thing the reader may expect—and indeed enjoy.

The amateur of comparative philology will be greatly intrigued by the fascinating connections made by Herr Majut, between both legendary lore and the practical application of the terminology he discusses so ably. The immediate connection of his labours and those of the farming historian is in a sense remote, but in a less recondite way he presents a wealth of references that will be of sporadic but continuing interest. Its immediate appeal of course, will be to the philologist, the student of words.

Unfortunately the present writer is not qualified to discuss the *Aihvatundi*, being innocent of Gothic.

G. E. FUSSELL

ERIK HELMER PEDERSEN, *The Danish Agricultural Industry, 1910-39*. University of Copenhagen Institute of Economic History, 1973. 45 pp. Privately printed, no price stated.

Erik Helmer Pedersen's paper, issued as a pamphlet by the University of Copenhagen Institute of Economic History, makes a welcome addition to the brief list of works on Danish farming available in English. Its most valuable feature is the large body of statistics which both quantify and illuminate the trends discussed in the text. The scope of the paper, too, is wider than the title suggests, for the author begins with a concise survey of nineteenth-century developments, and concludes with a short epilogue covering changes since 1939.

Technical innovations, marketing, and the shifts in the Danish agrarian structure are considered in turn, each with a wealth of statistical support. Among other aspects of the period, the author touches too on the introduction of new strains of seed, improved breeds of livestock, and greater use of fertilizers, as well as the interest taken by Danish farmers in the marketing of their products, an interest which was associated with the regulation by Danish law of farm product standards.

Agriculture was a dominating and vital element in the Danish economy, employing as late as 1901 almost two-fifths of the population, while in the inter-war years exports of agricultural produce accounted for some three-quarters of the country's total exports.

The Danes' export trade was heavily dependent on the British market, and for an understanding of how the trade was adjusted to the changing conditions in this market during the troubled inter-war years, Mr Pedersen's paper is essential reading. As he concludes, conditions in these years forced Danish farmers to abandon their successful system of converting imported foodstuffs into more valuable dairy and meat products, and to embark instead upon "a totally new marketing policy in which dirigisme replaced the free play of forces."

G. E. MINGAY

EDWARD HYAMS, *Animals in the Service of Man—10,000 years of domestication*. Dent, 1972. 209 pp. £2.95.

Edward Hyams is perhaps best known for his writings on gardens and on wine, but he recently wrote a book on *Plants in the Service of Man*, and this companion volume illustrates a remarkable grasp of zoology as well as of botany. In a few years he has gained an academic and detailed insight into the problems of domestication and the history of domestic animals—not only of livestock but of many tame animals not usually thought of as domesticated—and shows himself familiar with the most recent literature on the subject.

The author begins with dogs, the first animal to be domesticated, and covers cats, horses, and poultry, before returning to the sequence of domestication with sheep and goats, pigs, and cattle. He then continues with reindeer, camels, and elephants, with such mammals as mink and rabbits, before going on to consider insects and fishes.

The historian who studies within the four walls of an Oxbridge college may tend to forget that domestication was a prerequisite of civilization, and the picture on the dust jacket of two shire horses drawing a beer-dray provides unspoken recognition of the unique part played by that animal for over 2000 years.

Although written for the general reader adequate reference is made to a comprehensive bibliography, and the author makes none of the mistakes common amongst archaeological and historical writers. This volume can therefore be confidently recommended to agricultural historians—particularly those trained

in an arts discipline—as an authoritative yet simple and concise introduction to a subject which involves some of the most profound problems of modern biology.

M. L. RYDER

ERIC RICHARDS, *The Leviathan of Wealth*.

Routledge & Kegan Paul, 1973. xx+316 pp. 4 plates. 4 maps. £5.25.

This book, sub-titled 'The Sutherland Fortune in the Industrial Revolution', is an important case study of the role of the aristocracy in the economy in the first half of the nineteenth century.

In 1803, when George Granville Leveson-Gower became second Marquis of Stafford, the family possessed estates in Salop, Stafford, and Yorkshire. By his marriage to Elizabeth Gordon, Countess of Sutherland, they had between 800,000 and one million acres in the Highlands of Scotland. As a result of his father's marriage to the eldest sister of the childless Duke of Bridgewater he received the profits of the Bridgewater Canal, but for his lifetime only. In the early years of the railways the family also made valuable investments in the Liverpool and Manchester Railway. At his death in 1833 (the year he was created Duke of Sutherland) his annual income from all sources was around £200,000.

The book has two main parts. The first (pp. 37–148) is called 'The House of Sutherland and the Coming of Railways'. It deals with the railway and canal rivalries of the 1820's and 1830's in Lancashire and the Midlands. The other main part of the book (pp. 151–279) has the title 'The Highland Clearances'. In fact the scope of this section is wider than the title suggests. It does deal with the events that have gained notoriety with the passage of time—the removal of the people from Strathbrora and Strathnaver and the case concerning the hated Patrick Sellar. But it is also a more general discussion of attempts to divert some of the profits from the railway and canal interests in England towards developing the immensely large and extremely poor estates in Sutherland.

The difference between these two parts of the book is absolute. One deals with the most economically advanced region of Britain at a

time of dynamic change. The other is a study of one of the most backward and poverty-stricken regions on the periphery of the economy. The unifying feature of these two contrasting studies is provided by the management of the estate. This was personified by that king of estate agents in nineteenth-century England, James Loch. As commissioner of the Leveson-Gower properties from 1812 till his death in 1855, this lowland Scot was responsible for the supervision of the entire properties. He was more than a mere paid employee of the family. Educated at Edinburgh University, Loch was a lawyer, financial expert, economist, and a family friend. He, as much as anyone, determined the uses of the family fortune. In this work Dr Richards has provided a comprehensive picture of the decision-making process of a great estate. He also provides far more information than has hitherto been published on James Loch. Indeed, in this study Loch emerges as a far more sharply defined figure than either the second Marquis of Stafford/first Duke of Sutherland before 1833, or his son, the second Duke, after 1833.

*The Leviathan of Wealth* demonstrates how inadequate it is to regard patterns of aristocratic expenditure in the nineteenth century in purely economic terms. Neither Loch nor his masters can be seen as profit-maximizers in this respect. Although Loch realized that the family wealth derived principally from its participation in industrial development, he also accepted that the family's future social standing and resilience rested on its territorial foundations. Unlike most aristocrats the Leveson-Gowers were not merely satisfied with lucrative land sales to the railway companies. Their investment in the Liverpool and Manchester Railway in 1825 was £100,000. But the expenses of a noble household were immense. The family had three country houses, a London house, and a castle in Scotland to maintain. After 1833 the family income ceased to expand at its former rate. But expenditure, especially in Sutherland, was well maintained. In the event, this expenditure represented a loss to the family, no matter what its effects on the Highland economy. Even Loch's constant vigil over the income and expenditure accounts did not prevent a

reduction of the family's resources by 1855, though they were not forced to relinquish any of the territorial foundations before 1900.

The book is not a complete survey of the family's activities. For instance, very little is made of industrial development on their Salop and Staffordshire estates, nor is there any mention of the drainage of the Salop Wealdmoors. Presumably these enterprises also had some effect on the size of the Sutherland fortunes at that time. Nevertheless this is an excellent and well-documented study. Also its appeal should be to a wide readership. There is new material here to interest three groups: industrial historians concerned with the early growth of the railways, Scottish historians, and finally agricultural historians who are interested to know more about the management of the landed estate in the nineteenth century.

R. PERREN

W. E. MINCHINTON (ed.), *Wage Regulation in Pre-Industrial England*. David & Charles, 1972. 263 pp. £4.20.

Remarkably often the products of the booming Devonshire reprint industry are still market leaders in spite of their antiquity. The works of Tawney and Kelsall on wage regulation under the Statute of Artificers, the one nearly fifty, and the other over thirty years old, are no exceptions.

Tawney's major contribution to the debate on wage regulation initiated by Thorold Rogers first appeared in *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte*, XI, in 1913—not, as stated in the acknowledgements, 1914—and really set the pattern for systematic study followed and developed by Professor Kelsall. It remains an article of prime importance, for what Kelsall called Tawney's "masterly analysis" remains undiminished in stature by subsequent research.

Here are also reprinted two more detailed studies by Professor Kelsall: a book, *Wage Regulation under the Statute of Artificers*, of 1938; and an article from the *English Historical Review*, LVII (1942), on wage regulation in Herefordshire, 1666–1762, which is really little more than a transcription of an extensive series of assessments. His work greatly extend-

ed the range of known assessments, and with its more particular and local emphasis revised some of Tawney's broad conclusions. In essence, however, his was the role of the hound, not the fox.

To these "classic" studies, Professor Minchinton has added an invaluable list of all assessments and reassessments known to date, an extensive bibliography, and a useful introduction. Modern students will be grateful for the commendable energy which produced these. When Tawney wrote, ninety assessments were known, and in 1938 Kelsall listed 159: this book gives reference to 1,452, and still more may yet appear as a result of the "further assiduous research in borough and county record offices" urged by Professor Minchinton. But, as his introduction makes clear, the discovery of wage assessments has far outstripped their analysis. The publication of this book shows the need for systematic research on the subject.

The bibliography is not quite comprehensive. Thorold Rogers' views on the subject were revised in a minor way in the *Economic Interpretation of History* of 1888. Dr G. W. Hilton's book, *The Truck System* (Cambridge, 1960), added to the later history of wage assessment, and suggested more rigorous lines of analysis. Neither finds mention here. But the real criticisms of the footnotes and bibliography lie in error and inconsistency, not omission. There is a reference to a book called *Elizabeth Winchester* on page 248, the lady wrongly supplanting the adjective. Elsewhere erroneous dates of publication and omissions serve as minor irritants: the second edition of Cunningham's *Growth of English Industry and Commerce* appeared in 1892, not 1907 as stated on page 86, and on page 57 Tawney's reference to the third edition of 1903 should have made this clear: volume references to the same work are omitted; and on page 90 footnote 107 refers to a printed, not manuscript, source, as one can see from the bibliography (p. 218), and which was clear in the original article. Here is also a new and rather strange convention for authors' names. While it may offer marginal assistance to the researchers of catalogues, names such as 'James W. Francis Hill', 'Richard H.

Tawney', 'Frederick J. Fisher', 'Jonathan D. Chambers', and 'William H. B. Court' are incongruous and are employed inconsistently. These features mar a considerable bibliographical achievement.

The printing of this volume also shows signs of what might be called the "growing pains" of the reprint industry. On a quarter of the pages of the text, proof-reading marks are distractingly visible. On one page (113) correction and error uneasily coexist. Pages 57 and 58 are transposed. This is overall a shoddy example of the printer's art.

Tawney's article and Kelsall's book are essential reading for any student of early modern England. Professor Minchinton has ensured that they are available and can be read critically by producing this volume with its excellent introduction and bibliography. Its publication is therefore most welcome and should stimulate further research. But it is perhaps a comment both on Tawney and on the nature of modern scholarship that his general analysis has endured so well.

J. A. CHARTRES

J. GERAINT JENKINS, *The English Farm Wagon, Origins and Structure*. New edition, David & Charles. Newton Abbot, 1973. 264 pp. 42 half-tones, 16 line illus. £3.50.

Although first published in 1961 by the Oakwood Press for the University of Reading, this book remains the major work in the field. The reprinting testifies to the continuing interest in the subject so it is all the more remarkable that, apart from James Arnold's detailed drawings and descriptions in *The Farm Wagons of England and Wales*, published in a limited edition by John Baker in 1969, and the author's own *Agricultural Transport in Wales*, National Museum of Wales, there have been so few publications extending or rejecting Mr Jenkin's general theories. Around six hundred vehicles were examined by the author but, throughout the 1960's many others must have come to light, some are being preserved in museums and private collections, and a consideration of further examples could perhaps alter the distribution patterns represented in the first part of the book.

The origin of the four-wheeled farm wagon

in Britain is discussed in the first section with specific reference to design and construction, and international parallels are considered. The factors influencing the distribution of the main wagon types, the box and bow wagon, and their later derivatives are discussed briefly under the heading reasons for use: topographical, economic size of holding, field patterns, and cultural. The economic factors could well be considered in greater depth particularly the uses of farm wagons, for example whether for harvest, root crops, or manure. The more substantial second edition, which is well arranged, discusses in detail the design, structure, and construction methods for the main types of wagon with photographs and drawings. This section, together with Appendices II and III, provides an excellent practical guide for cataloguing and evaluation which could usefully be followed by students, museums, and local history groups.

The author, one-time Assistant Keeper at the Museum of English Rural Life, University of Reading, is now Keeper of Material Culture at the Welsh Folk Museum, St Fagans, Cardiff, and the post-1960 additions to the wagon collections of these institutions are included in the new edition (Appendix v). Unfortunately the photographs which add much to the text are poorly produced in this edition.

The book represents a considerable amount of careful research and analysis and it is to be hoped that the new edition will reach a wider audience of interested people who may continue the work.

LAUREL BALL

JANE M. RENFREW, *Palaeoethnobotany: the prehistoric food plants of the Near East and Europe*. Methuen, 1973. xviii+248 pp. £6.50.

Palaeoethnobotany is the study of the remains of plants used or cultivated in ancient times, and this book provides not only a detailed survey of the evidence as it applies to Europe and the Near East but also a sound text and reference book for people wishing to embark on the subject. It deals only with food plants: plants used for other purposes, such as textiles, are omitted.

Chapter 1 provides an introduction covering the development of palaeoethnobotanical research from its beginning in 1826 with the descriptions of desiccated seeds from ancient Egypt, and later of the waterlogged remains from Swiss Neolithic villages, to the useful list of workers currently engaged on different topics in various parts of the world.

The next chapter deals with conditions of survival and techniques of examination; the latter are still mainly based on gross morphology, although a microscopic approach, already in use with animal tissues, is foreshadowed. Chapter 3 covers the very pertinent problems of sampling and interpretation. There follows a discussion of the basis for identifying the species of the temperate cereals: wheat, barley, rye, oats, and the millets, and each is then covered individually in a separate chapter, which discusses genetic history, environmental requirements, and the possible uses by prehistoric man. The pulses—horsebeans, peas, lentils, and vetch—are treated in the same way, after which there is a chapter on flax, which was probably first cultivated for its oil-yielding seeds.

There is a chapter on fruits, and another on nuts. These are mainly concerned with those species cultivated in Europe—apple, pear, fig, olive, and vine. Wild fruits and nuts are considered in less detail. Following these is a

survey of the use of drug plants (poppy and hemp), and a catalogue of the seeds of edible wild plants most commonly found in prehistoric sites. The last two of the twenty-one chapters cover the food values of the plants used, and present conclusions about the origins and development of agriculture.

The chief cultivated crops of temperate Europe (wheat, barley, peas, and lentils) were first domesticated in the Near East, and were introduced into Europe before 5000 B.C. Other crops, such as oats and rye, were probably first domesticated within Europe. The earliest agriculturalists concentrated on the cultivation of annual crops—cereals and pulses—and relied on local wild trees to supplement their diet with fruits and nuts. Orchard husbandry is a long-term undertaking implying mature and secure economic and social systems. The vine and the olive were not cultivated in the Near East before the end of the fourth millennium B.C., and the apple, cherry, pear, and plum in Europe not until the Early Bronze Age, a thousand years later.

There are forty-eight plates (ending with a striking illustration of a loaf of bread from Pompeii), 130 line diagrams, and three maps. There are also an eleven-page bibliography, a five-page glossary, and a good index.

M. L. RYDER

## THE BRITISH AGRICULTURAL HISTORY SOCIETY

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# The Agricultural History Review

EDITOR: G. E. MINGAY

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The Review is published twice yearly by The British Agricultural History Society and issued to all members. Single copies may be purchased from the Treasurer for £3.00. Back numbers to Vol. 20 (1972) are £1.50 per issue, except for the Supplement to Vol. 18 (1970), *Land, Church, and People*, which is £2.00. Articles and letters offered for publication should be sent to 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.