

The Changing Basis of English Agricultural Prosperity, 1853-73¹

By E. L. JONES

MOST historians are familiar with the essential topography of English agricultural prosperity—or adversity—during the nineteenth century. This comprises a peak during the Napoleonic wars, a deep trough for twenty years thereafter, another peak rising steeply from 1837, after which the line dips once or twice during the 'forties, sags at mid-century, rises in a booming curve through the 'fifties and 'sixties, until it crashes down some time in the 'seventies. To the more sophisticated the line begins to rise again, a little, from 1894.

This stark outline, treating agriculture more or less as a single entity, owes most to the work of Lord Ernle, which for years was slavishly followed.² A renewal of interest in nineteenth-century agriculture is now evident, and, as Marc Bloch would have put it, we are again keeping faith with Ernle by striving to modify his findings. The single line, firm but very generalized, with which Ernle drew the depression of the last quarter of the nineteenth century, has already been split into two divergent paths, representing the fortunes of cereal growers and livestock producers, by Mr T. W. Fletcher.³ Similarly, two or three regional studies have suggested that the depths of the depression after 1815, which Ernle described so vividly, were plumbed only in restricted localities and for only two or three short spells. The topography of this depression is likely to be re-shaped at the hands of the next serious student to treat it as a whole.

The most conspicuous hump in the line is formed by the period from the early 1850's to the early 1870's. These years are usually passed over lightly as a time of prosperity, and in marked contrast to the succeeding period as one of prosperity for the grain grower. My intention is not to try to invert this period into one of depression, for although the accounts of prosperity could be made much more precise than they are at present, its general character is

¹ I am indebted to J. R. Bellerby and J. W. Y. Higgs for commenting on a draft of this paper, which was read at the December 1961 conference of the British Agricultural History Society.

² Most notably *English Farming Past and Present*, 1912.

³ T. W. Fletcher, 'Lancashire Livestock Farming during the Great Depression', *Agric. Hist. Rev.* IX, 1961, pp. 17-42, and 'The Great Depression of English Agriculture 1873-1896', *Econ. Hist. Rev.*, 2 ser., XIII, 1961, pp. 417-32.

plain. Mr J. R. Bellerby's figures of farmers' incentive income, obtained by deducting estimates for net rent, wages, and interest on occupier-capital from an estimate of the total factor income of agriculture, and therefore showing the reward for management and risk, are:

in 1851	£21·4 million
in 1870-3 on average	£43·9 million

Incentive income per man-week per farmer:

in 1851	£0·514
in 1870-3	£1·038

Incentive income relative to that for industrial occupations:

in 1851	49·5 per cent
in 1870-3	77·3 per cent ¹

These statistics cannot be used to show the differing experience of various groups of producers, although the different trends might be elucidated by a study of contemporary farm accounts.

My intention here is to examine the agricultural basis of this overall rise in the prosperity of the farmer. Ernle, I think, tended to overemphasize the rôle and prosperity of the cereal grower during the years in question, although he did recognize the growing importance of livestock. Not every subsequent writer has remembered this caveat, and some have depicted the period primarily as one of prosperity for the specialist grain producer. I think it fair to say that the 'fifties to the 'seventies form a sort of base period in the minds of agricultural historians and agricultural economists, as the persistence of the term 'Golden Age' would suggest, when the wind was set fair for arable England. A heartening number of writers do mention that there were far-reaching changes in the pattern of agricultural production at this time—"down corn, up horn," as Ernle said²—but this movement is overshadowed by the swing towards livestock production during the Great Depression, and its implications have not been much explored.

¹ J. R. Bellerby, 'National and Agricultural Income 1851', *Economic Journal*, LXIX, 1959, p. 103.

² R. E. Prothero (Lord Ernle), *The Pioneers and Progress of English Farming*, 1888, p. 106. See also J. H. Clapham, *An Economic History of Modern Britain*, II, p. 278; J. R. T. Hughes, *Fluctuations in Trade, Industry, and Finance*, 1960, p. 224; William Ashworth, *An Economic History of England: 1870-1939*, 1960, pp. 47-8. On the other hand O. R. McGregor has recently asserted that rotations were "unalterable" and "majestically though profitably insensitive to shifting market demands."—Introduction, Part II, p. cxviii, to Lord Ernle, *English Farming Past and Present*, sixth edition, 1961.

I

The expression commonly used for the agriculture of the mid-nineteenth century is 'high farming'. The economic and technical connotations of this term have often been confused. I prefer to restrict high farming to the economic sense in which it was used, loosely, by Caird and those who agreed with him, that is, the increase of inputs to farming in supposed attempts to offset falling prices by an increased output. In the technical sense, which is perhaps the commoner and with which we are concerned here, high farming is an extension of mixed farming, that is of any system which interlocks the growing of cereals and the keeping of either or both sheep and cattle. This was epitomized by the Norfolk four-course system, with its close-knit cycle of fodder and grain crops, its arable flock, and its yard-fed bullocks. What high farming adds—and here I prefer to use Philip Pusey's alternative term 'high feeding'¹—is intensity of operation, the feeding of purchased oilcake to the livestock on a lavish scale, to produce both meat and dung; the latter, with purchased artificial fertilizers, in turn lavished on the arable land to promote high yields of grain, and of fodder crops for the stock. The greater the scale of feeding farm-grown and bought-in fodder and the heavier the applications of farm-produced and purchased fertilizer, the more the saleable produce and the more manure for the next round of cropping, that is, the higher the farming. This was the 'expanding circle' which Mechi advocated.²

Dr A. H. John has drawn attention to William Ellis's description of East Anglian farming in the early 1740's as having shown "many elements of what was subsequently called 'high farming'."³ Turnips were sown before barley and fed to fattening cattle, which returned so much dung that the yields of barley were on the increase. Mixed farming of this type will undoubtedly be found to have been a development of the seventeenth century, when the requisite root-break and hay from rotation grasses became available. An increased yield of grain was usually held to be the *raison d'être* of such systems. This was the case in the 1840's, when Pusey stated that the practice of fattening cattle on arable farms was continued "not from a view to profit in the sale of meat, but for the production of dung, and the consequent increase of the corn crop."⁴ To Pusey the liberal feeding of oilcake to stock for the sake of extra manure for the land under cereals was the "great distinction of English agriculture, and constitutes what is called high farming" and what he

¹ Philip Pusey, 'On the Progress of Agricultural Knowledge during the last Four Years', *JRASE*, III, 1842, p. 205.

² J. A. S. Watson and M. E. Hobbs, *Great Farmers*, 1951, p. 90.

³ A. H. John, 'The Course of Agricultural Change, 1660-1760', in L. S. Pressnell (ed.), *Studies in the Industrial Revolution*, 1960, p. 146, n. 1.

⁴ Pusey, *loc. cit.*, p. 205.

called alternatively high feeding. The principle was worked out in different ways, typically in the eastern counties by the winter-feeding of oxen bought-in at the autumn fairs, but in the southern counties, where a feeding-house of cattle was a rarity, by giving supplementary oilcake to sheep hurdled on turnips.

On soils derived from chalk, limestone, or sands, high feeding possessed great advantages for the cereal grower. Such soils tend to be very deficient in potash, and although easy to cultivate are 'puffy' and need to be consolidated. Before, and indeed long after, adequate supplies of imported potash became available (from the Stassfurt mines in 1861) and while the only consolidating implement was a light roller, these needs were met by a hurdled flock. Potash was transferred from the subsoil to the topsoil in the dung of sheep fed with turnips, the roots of which had tapped the subsoil supplies of potash. Moisture was retained in the soil in dry seasons in the crumb structure built up by the treading of the sheep in the fold. Sheep and bullock dung acted as the nitrogenous fertilizer and provided humus, which the one course of 'seeds' did not fully supply, for the course of wheat in the Norfolk-type rotations which predominated on these soils.¹ Clearly, the richer the feeding of livestock, the better the dung and the heavier the crops of grain which might be expected.

II

For a score of years after the Crimean war the price of wheat, apart from short-term fluctuations, showed no tendency to rise. There was now a large import every year. On the other hand the general level of prices and the prices of livestock products in particular rose with little pause.² This rise in the value of livestock products compared with the value of wheat became marked from 1857 and could not but affect the working of high feeding systems in which livestock and cereal enterprises were nicely combined. The proportions of cost to be ascribed to, and of profit accruing to, the meat- and grain-producing enterprises are the subjects of contemporary assertions which are not easy to evaluate, the more so because the nature of high feeding varied according to locality and changed as the balance between the prices for grain and livestock products shifted. Nevertheless an arrangement in chronological order of the statements as to the profitable end of high feeding

¹ Viscount Astor and B. Seeborn Rowntree, *Mixed Farming and Muddled Thinking*, n.d., pp. 55, 58.

² W. T. Layton and G. Crowther, *An Introduction to the Study of Prices*, 1938, p. 75, n. 1. I am indebted to Dr A. H. John for a copy of his graph of wheat, barley, and beef prices from 1816 to 1870.

sheds some light on the changing relation between grain and livestock production.

Until the 1850's it was held that the cost of stall-feeding oxen through the winter was not recovered from the sale of fat-stock in the spring, but only by charging the grain enterprise for the dung which had accumulated from the beasts. This, and the fact that wheat was stall-fed on a wide scale only when it was exceptionally cheap, as in 1835-6, suggests that before the Corn Laws were repealed wheat production was not so unprofitable as many of the producers claimed. It is probable that fatstock prices were inadequate to cover the purchase of store beasts and oilcake, and leave a profit, and that stall-feeding in many areas was only practised because in addition the price of wheat was high enough for it to pay, in effect, a good sum for the rich bullock dung. The differential of 1d. per lb. more for meat in spring than in autumn, of the days when the supply of beasts fattened on summer grass was much in excess of those winter-fed, had disappeared. The meat and hides of stall-fed oxen were directly profitable only when farm-grown fodder was used as a substitute for expensive purchased feed.

In the Welsh Marches it was worth while to winter stores on turnips and straw "chiefly for their manure," although this was not common practice. It was usual in eastern England. Lincolnshire farmers were prepared to winter other men's beasts on straw free of charge, although the stock-owner had to provide the oilcake, simply in order to acquire the dung. On thin, arable soils in Norfolk and on Lincoln Heath the dung was needed to turn the straw crop into good manure, and as C. S. Read added, "on the poor chalk hills, the hungry greensands, and the thin stonebrash, high farming is as necessary as in West Norfolk."¹ According to Clarke's essay on Lincolnshire farming in 1851, "*the Grounds of the present practice of consuming the Straw with Oilcake given to Beasts on light Arable Farms . . . are . . . simply the natural infertility of the land and the expectation of bountiful crops from the ample investment of capital in manures.*"²

Equally, the dung seems to have been the justification for feeding extra oilcake or grain to sheep hurdled on turnips on the chalk uplands, where according to Pusey the effect was "distinctly seen along the line where the hurdles had stood in the following crop of barley, marking the efficacy of high feeding," while in east Berkshire one farmer would give another his turnip crop if the latter would put his sheep in to consume it in the field.³ The heavy demand for manure for hop-growing alone justified the generous feeding of

¹ C. S. Read, 'Farming of Oxfordshire', *JRASE*, xv, 1854, p. 258.

² J. A. Clarke, 'Farming of Lincolnshire', *JRASE*, xii, 1851, pp. 398-9.

³ Pusey, *loc. cit.*, p. 206; James Caird, *English Agriculture in 1850-51*, 1852, p. 100.

cattle in parts of Kent.¹ The conversion of their straw into manure kept up the practice among Nottinghamshire farmers even when meat prices were low: "they calculate," wrote Corringham in 1846, "how they shall use the greatest amount of cake, which they regard as an indispensable in good farming—at the least possible loss; for as prices both of beef and mutton have of late been, they must necessarily incur a loss if they expect their remuneration from the livestock, instead of from the land," and he repeated Pusey's aphorism that as in Lincolnshire cattle were "machines whereby to make manure."²

In Cumberland, by way of contrast, the farmer who fed cattle "reckons it an unprofitable season if any part of his profit requires to be charged to the dung-heap,"³ but the basis of the Cumberland feeding system was the swede and not costly oilcake. In more easterly arable areas, where a farmer might buy several hundred pounds' worth of oilcake each winter but sell his bullocks in spring for £1 or £2 per head less than they had cost the previous autumn, stall-feeding was only practised as an adjunct to cereal production.⁴ In 1851 the four principal farmers of Borough Fen, Northamptonshire, who were lavish feeders of oilcake, agreed that two-thirds of its cost were returned by the manure from cattle and only one-third from the sale of beef, one-third by the manure from sheep, and two-thirds from the mutton.⁵ It was this sort of ratio which led Pusey to regard the production of plenty of rich manure as "the whole object of all feeding."⁶ While Protection lasted, the price of cereals covered losses on meat production by stall-feeding; afterwards they did not, yet mixed farming as a whole continued to be profitable.⁷

In 1851–52, 1858, and the mid-sixties wheat was cheap enough to be fed to bullocks and pigs on a large scale, in the hope of a compensating return from fatstock. The prices for fatstock were high when the price of wheat was low. In this situation, the receipts from grain and livestock products helped to balance one another, and in 1864 when grain prices were low and prices for stock and wool high a correspondent in the *Farmer's Magazine* observed that in consequence the farmer's "business position would be about an

¹ G. Buckland, 'Farming of Kent', *JRASE*, VI, 1846, p. 273.

² R. W. Corringham, 'Agriculture of Nottinghamshire', *JRASE*, VI, 1846, pp. 20–1.

³ W. Dickinson, 'On the Farming of Cumberland', *JRASE*, XIII, 1852, pp. 256–7.

⁴ Philip Pusey, 'Some Introductory Remarks on the present State of Agriculture as a Science in England', *JRASE*, I, 1840, p. 18; A. Huxtable, *The 'Present Prices'*, 1850, p. 13.

⁵ W. Bearn, 'On the Farming of Northamptonshire', *JRASE*, XIII, 1852, p. 71 (dated 23.2.1851).

⁶ Pusey, 1842, *loc. cit.*, p. 207.

⁷ This was stated categorically by T. J. Eliot, *The Land Question . . . as illustrated by twenty-three years' experience on the Wilton House Home Farm*, n.d. [1884], especially p. 37.

average one."¹ The complementary nature of the two groups of enterprises is revealed by the unusually frank account of a farmer as to the effects of the bad harvests of 1856 and '57 in Scotland. Sprouted grain was fed to the stock and potatoes were sold for seed instead of human consumption, so that on balance profits were almost if not quite what they might have been had the harvests been good.² The inverse movement of the prices and profitability of grain and sheep is further borne out by C. S. Read's comments on the relative fortunes of sheep farmers on the Norfolk heaths and grain growers on the dearer-rented Norfolk soils. It was held at the time a distinct advantage of mixed farming that when grain prices were poor, the crop or some part of it could be fed to the fattening stock.³

It is noteworthy that in the East Lothians oilcake and grain were fed liberally when grain prices were good in the early 1840's, were sharply curtailed when grain and stock prices were low at mid-century, and fed freely again in the mid-1860's when grain was cheap but stock fetched a good price.⁴ In 1858 oilcake was being fed in Norfolk on a scale which grain prices did not warrant.⁵ In other words, in the 1850's and '60's prices for livestock products were sometimes high enough to induce high feeding regardless of unremunerative prices for grain. Low grain prices of course meant low feed costs. As P. H. Frere noted in 1860, "whereas of old the bread consumer had to pay in part for the supply furnished to the consumer of meat, now, each kind of produce must in the main defray its own cost of production," and at times the production of meat became the mixed farmer's chief aim.⁶ The manure from stall-feeding was thought of as devoted not to the wheat crop, as it had been in the past, but to the roots as further feed for the livestock. There are plenty of signs that this new relationship was widely recognized by the mid-1860's.⁷

This account has been somewhat simplified for the sake of clarity: the

¹ 'The Present Position of the British Farmer', *Farmer's Magazine*, 3 ser., xxv, 1864, p. 207; see also 'The Causes of the Decline in the Price of Corn', *Farmer's Magazine*, 3 ser., xiii, 1858, p. 251.

² A. Simpson, 'High Farming with Profit', *Farmer's Magazine*, 3 ser., xviii, 1860, p. 239.

³ 'The Present State and Prospects of the Farming Interest', *Farmer's Magazine*, 3 ser., xxv, 1864, p. 193; C. S. Read, 'Recent Improvements in Norfolk Farming', *JRASE*, xix, 1858, p. 271.

⁴ R. S. Skirving, 'Ten Years of East Lothian Farming', *JRASE*, 2 ser., i, 1865, pp. 105-6.

⁵ Read, *loc. cit.*, p. 287.

⁶ P. H. Frere, 'On the Feeding of Stock', *JRASE*, xxi, 1860, pp. 233-4.

⁷ See e.g. J. Coleman, 'The Breeding and Feeding of Sheep', *JRASE*, xxiv, 1863, p. 623; 'Oilcake and Grain for Cattle', *Farmer's Magazine*, 3 ser., xxv, 1864, p. 216; H. Evershed, 'On Sheep', *JRASE*, 2 ser., i, 1865, pp. 332-5; 'Are the Present High Prices of Stock Likely to Continue?', *Farmer's Magazine*, 3 ser., xxx, 1866, p. 104. The opposite view taken by J. J. Mechi in 1867 and quoted by T. W. Fletcher, *Econ. Hist. Rev.*, 2 ser., xiii, 1961, p. 422, is exceptional, as Mechi's views tended to be.

proportions of profit due to grain and livestock cannot be learnt in detail since few farmers could make the distinction themselves. A Norfolk farmer told Sir Daniel Hall early this century that "it is impossible to show that any single operation on a farm pays by itself, it is the whole system taken together which succeeds or fails," and in the early days of cost accounting, as Hall agreed, this was not an entirely unreasonable position, because decisions as to how to apportion costs and receipts in the Norfolk system are necessarily very arbitrary.¹ Nevertheless, a general change in the profitable base of high feeding systems from about 1850 does seem to be indicated.

III

The long-term movements of product prices had been foretold by Caird as early as 1849, although he had exaggerated their immediacy.² Caird expected the price of grain (except malting barley, of which the British sorts were superior) to fall as imports increased, while with the growth of population he anticipated that prices for butcher's meat, dairy produce, vegetables, wool, and hides would rise. In consequence, he advocated turning attention to green crops which could be fed to livestock, partly for the saleable products and partly for manure to increase the yields of the grain crops. Caird was by no means the only one to recognize this trend, which became a source of general comment,³ but he was the most constant in stressing the need to adjust the pattern of mixed farming to meet it. He returned to the topic in 1868 and pointed out how accurate his prognosis had been. "Since 1850 the price of bread on the average, has remained the same," he wrote, "while that of meat, dairy produce, and wool has risen fifty per cent. . . This and the steadily advancing barley, to which I then referred, is the true explanation of increasing rents and agricultural prosperity, notwithstanding increasing receipts of foreign corn."⁴ Professor Clapham came to the conclusion from

¹ A. D. Hall, *A Pilgrimage of British Farming 1910-1912*, 1914, pp. 83-4.

² *High Farming, under liberal covenants* . . . 1849, pp. 6-7, 25-6.

³ See e.g. 'On the Peculiarities of the Management of Farms', *Farmer's Magazine*, xxii, 1850, p. 396; 'The Wool Trade and Meat Trade—foreshadowing the change that must be made in our Agricultural System', *Farmer's Magazine*, 3 ser., iii, 1853, pp. 8-9; C. S. Read, 'Farming of Oxfordshire', *JRASE*, xv, 1854, p. 256; 'Shall we cultivate corn or cattle?', *Farmer's Magazine*, 3 ser., xix, 1861, p. 411; H. S. Thompson, 'Agricultural Progress and the Royal Agricultural Society', *JRASE*, xxv, 1864, p. 35: "The breeding and feeding of livestock have thus become such profitable operations that the growth of corn, as a sequence to stock-farming, has also become profitable, even at present prices." A Cumberland Landowner, *A Few Hints to Landowners & Cultivators, Horn or Corn. Which pays best*, 1873, *passim*; T. Farrall, 'A Report on the Agriculture of Cumberland, chiefly with regard to the Production of Meat', *JRASE*, 2 ser., x, 1874, p. 429.

⁴ J. Caird, *Our Daily Food*, 1868, p. 33.

price data in the *Economist* that the rise in wholesale prices for meat and dairy produce was nearer 40 per cent, although it was calculated in the '70's that the price of beef in the Metropolitan market advanced 58 per cent and that of mutton 85 per cent between 1853 and '73.¹ Obviously the lowest of these figures is large enough to have brought about very considerable changes in the structure of agriculture. Caird's analysis in 1878 is probably the best formulation of his oft-repeated views and deserves to be quoted at length. "Thirty years ago," he says, "probably not more than one-third of the people of this country consumed animal food more than once a week. Now, nearly all of them eat it, in meat or cheese or butter, once a day. This has more than doubled the average consumption of animal food in this country. . . The leap which the consumption of meat took in consequence of the general rise of wages in all branches of trade and employment, could not have been met without foreign supplies, and these could not have been secured except by such a rise in price as fully paid the risk and cost of transport. The additional price on the home-produce was all profit to the landed interests of this country."² Before considering further the nature of these changes, it is worth examining how the disturbance in the relative values of farm products has usually been treated.

The accident of the long-delayed date when national agricultural statistics were first collected has imparted a somewhat false sense of discontinuity in agriculture about 1870. Many authorities take 1870 as the first year in which the statistics are reasonably complete and reliable, and many of them start with this date when tracing the development of present-day agriculture. As a result, the early 1870's are often made to appear as the high-water-mark of the 'Golden Age' as regards cereal acreages and production. The increased concern with livestock production from 1873, or '75, or '79 (the utter lack of agreement about the onset of the Great Depression in agriculture itself suggests that the change was not sudden, but part of a cumulative process), has thus been exaggerated at the expense of the more gradual, but fundamental, shift in the pattern of farming from the 1850's. That the alteration in the balance of prices could be and was met by adjustments within mixed farming systems, and only at comparatively late dates by a switch to the grassland production of livestock, has tended to conceal the extent of the transition. The years 1870-73 might more properly be regarded as marked by the final wave, apart from the brief surge in 1878, of high prices for grain and hence big acreages of cereals.

¹ J. H. Clapham, *op. cit.*, II, p. 278; J. A. Clarke, 'Practical Agriculture', *JRASE*, 2 ser., XIV, 1878, p. 476.

² James Caird, 'General View of British Agriculture', *JRASE*, 2 ser., XIV, 1878, p. 289.

Some recent writers, notably M. Olsen and C. C. Harris in the *Quarterly Journal of Economics* for 1959,¹ deny the growing emphasis on livestock as the profitable end of farming during the 1850's and '60's, and stress the importance of wheat. Their conclusions are based largely on the post-1866 acreage statistics, which cannot of themselves reveal which were the most profitable enterprises in close-knit farming systems, nor even which products were destined for sale and which for farm consumption, nor point to the considerable year-to-year changes in output per acre. The acreage statistics seem to have diverted attention from changes in production which took place without correspondingly large changes in land use. Since there was no clear increase of rotation grass and only a steady, slow expansion of permanent pasture during the '70's, the growing importance of livestock has been minimized.² Yet the value of the gross output of United Kingdom agriculture, as recalculated from E. M. Ojala's figures by T. W. Fletcher, was

	1867-69	1870-76
Arable products	£104.17 million	£94.99 million
Livestock products	£126.76 million	£154.87 million ³

Earlier estimates of cereal acreages collected by Lawes and Gilbert⁴ and Drescher,⁵ and the figures of 'British corn sold' from 1849 to '72 given by Hasbach⁶ show that the peak of arable expansion in the early 1870's was a temporary upswing after a contraction which had begun to set in during the later '50's. The increase in the total cultivated area of England and Wales which is usually said to have occurred between 1851 and '71 is not necessarily inimical to the view that the cereal acreage, especially the wheat acreage, was at its peak in the mid-1850's. In 1868 Lawes and Gilbert referred to "the

¹ 'Free Trade in "Corn"', in LXXIII, pp. 145-6, 165-8. For another account based on the acreage figures and minimizing the importance of livestock before the mid-1870's see J. T. Coppock, 'The Changing Arable in England and Wales 1870-1956', *Tijdschrift voor Economische en Sociale Geografie*, L, 1959, pp. 122-3.

² It was generally agreed in the 1860's that most of the increased production of meat came from turnips, clover, or sainfoin on land where intervening grain crops were taken, and not from grass. See e.g. 'W. W. G.', 'The Outcry about Meat', *Farmer's Magazine*, 3 ser., XXVIII, 1865, p. 134.

³ T. W. Fletcher, *Econ. Hist. Rev.*, 2 ser., XIII, 1961, p. 432.

⁴ J. B. Lawes and J. H. Gilbert, 'On the Home Produce . . . of Wheat, 1852-3 to 1879-80', *JRASE*, 2 ser., XVI, 1880, Table V.

⁵ L. Drescher, 'The Development of Agricultural Production in Great Britain and Ireland from the Early Nineteenth Century', *Manchester School Econ. & Soc. Studies*, XXIII, 1955, Graph 1, p. 155.

⁶ W. Hasbach, *A History of the English Agricultural Labourer*, 1920, p. 255, quoting *Statistical Abstracts Report*, XX, 1858-72.

general opinion . . . that the area under wheat has diminished during the last 15 or 20 years," and agreed that this was the case, especially in Scotland and Ireland.¹ All the signs point to a contraction of the wheat acreage in the less suitable northern and western areas, including parts of England, during those years, while there is additional confirmation that arable clays in England were being laid down to permanent pasture in the mid-1860's, as might be expected from the movement of wheat prices.² Olsen and Harris, taking the opposite view, say that "from the attention lavished on the repeal of the Corn Laws one might assume that all that was important in British agriculture ended in 1846. But it would be more appropriate to say that the downfall of British agriculture began, not in 1846, but in 1873."³ Disregarding the emotive word "downfall," it can be shown that after the Repeal the altered relative value of wheat and livestock products, due to imports which prevented a rise in the price of wheat, the growth of population, and rising real incomes of which an increasing proportion was spent on livestock products, led to considerable modifications in the structure of farming.

IV

Greater production of livestock was attained primarily by increasing output from arable farms. In the 1850's and '60's stall-feeding and yard-feeding of cattle was intensified in mixed farming regions, and spread into districts such as the dairying parts of Cheshire and Gloucestershire, where it was hitherto unknown, on to chalk and limestone uplands where until the 1840's sheep had been almost the only stock, and into parts of Cornwall and Cumberland where the entire dependence had previously been on grain.⁴ The spread of mixed farming and high feeding from its original homes in eastern England and on the chalk and limestone uplands was stimulated by the development of artificial fertilizers which were important to the root-break, and by the completion of a railway network by which oilcake and artificials could be carried quickly and cheaply all over the country. It was soon realized that yard- and stall- or box-feeding enabled more and better manure to be collected, and fatstock to be produced in more rapid succession than did feeding

¹ J. B. Lawes and J. H. Gilbert, 'On the Home Produce . . . of Wheat', *JRASE*, 2 ser., iv, 1868, pp. 365, 390.

² Anon., 'On the Price of Butcher-meat, and the Increase of Home Supplies of Cattle and Sheep', *Jnl. of Agric.*, xxv, n.s., 1865-6, p. 362; W. J. Moscrop, 'A Report on the Farming of Leicestershire', *JRASE*, 2 ser., ii, 1866, p. 326; H. Evershed, 'Agriculture of Staffordshire', *JRASE*, 2 ser., v, 1869, p. 268, and 'Agriculture of Hertfordshire', *JRASE*, xxv, 1864, p. 283.

³ Olsen & Harris, *loc. cit.*, p. 168.

⁴ L. de Laverigne, *The Rural Economy of England, Scotland, and Ireland*, 1855, p. 185; Read, *loc. cit.*, p. 222; L. H. Ruegg, 'Farming of Dorsetshire', *JRASE*, xv, 1854, p. 412.

in the fields. A further impetus to high feeding came from the high prices of the Crimean war, which prompted the conversion of large acreages of the remaining remote downland, which could not be reached economically with the dung cart, to arable land fertilized by folded flocks.¹ The extension of systems involving hurdled sheep and stall-fed cattle did not, however, mean the end of fattening on the better permanent pastures. Lavergne was exaggerating the trend of the times when in 1855 he bade "adieu, then, to the pastoral scenes of which England was so proud."²

Nevertheless, the increased importance of livestock on arable farms is obvious. This is brought out neatly when the principal items of expenditure and receipts for a 'mixed soil farm' of 590 acres in East Suffolk and a 'heavy land' arable farm of 230 acres in West Suffolk are compared for the periods 1839-44 and 1863-67. Both farms show the trend, and taking them together between the two periods receipts from wheat fell slightly, whereas receipts from barley, peas, oats and beans, cattle, sheep, and pigs all rose markedly. The bill for feed for livestock nearly trebled and became the largest single item of expenditure in the latter period.³

Since the price of wheat did not fall catastrophically until the late 1870's, the joint production of cereals and meat was favoured in the meantime: if the grain enterprise were *given* the manure from the livestock, it could pay its way. On the other hand there were serious obstacles in the way of increasing the grassland production of livestock. Pasture of a sufficient quality to fatten stock was too scarce to provide the whole supply of meat for which there was a demand and could not in any case have provided an all-year-round supply. The three- or four-year leys which contemporaries were able to sow were said to be only half as productive as the 'artificial' feeding on arable farms.⁴ As Frere argued in 1860, the additional supply had to come from feeding in the stall or the yard, and the cost of this would "*regulate the cost of the whole supply*."⁵ As grain-growing could no longer bear the cost of stall-feeding for the sake of the manure, 'artificial' feeding had to be made directly profitable, and with existing methods this meant that the price of beef would gradually have to rise. But as long as receipts from mixed farming as a whole were adequate, only the economically more astute farmers, in districts where grass grew well, would lay land down to grass and specialize in what were becoming the most profitable farm enterprises, finishing cattle and sheep on

¹ See e.g. J. B. Spearing, 'On the Agriculture of Berkshire', *JRASE*, xxi, 1860, p. 16.

² Lavergne, *op. cit.*, pp. 54, 187.

³ Royal Commission on Agriculture, *Particulars of . . . Farm Accounts*, 1896, pp. 167-8.

⁴ 'The Outcry about Meat', *Farmer's Magazine*, *loc. cit.*, p. 135.

⁵ Frere, *loc. cit.*, p. 234.

pasture with oilcake.¹ High feeding was not inflexible, since high inputs of oilcake were justified by reasonable prices for either grain or fatstock even if the price of the other happened to be low. The system was sufficiently viable, economically and technically, for the emphasis on the various products to be altered within wide limits before the grassland production of beef became a more attractive proposition for the arable farmer.

It might be expected that the increasing profitability of livestock would have led to a marked numerical increase of cattle and sheep. This, however, was offset by severe losses among breeding ewes in hill flocks during the hard weather of early 1860, by losses and liquidation sales in the summer droughts of 1864 and 1868, and by the rinderpest among cattle in 1865-66, which drew attention firmly to the short supply of fatstock. The demand for meat continued to grow, with the supply unable to keep pace.² In 1865 it was thought that meat would have become scarce sooner "had it not been for the war with Russia in the Crimea, which caused corn to rise to a high price, and capital therefore to flow back into the hands of farmers, which enabled them to hold their live stock and increase it, instead of forcing it into market half-grown and half-fat at certain seasons that they might meet their fixed expenses."³ Prices and costs favoured the expansion of sheep more than cattle production, but diseased turnip crops and consequently dear feed were alleged to have brought about a decline in the average weight of sheep. It seems likely that cattle were retained on free-draining land where sheep might have brought greater financial rewards because they were more efficient at converting straw into manure. On upland farms the quantity of straw was embarrassing and the insistence of landowners that it should not be sold off the farm was thought a great nuisance.⁴ Contemporaries were divided as to whether or not sheep numbers rose during the '50's and '60's; the most cogent among them argued that a rise was taking place.⁵ The official agricul-

¹ W. H. Heywood, 'The Comparative Profit from Making Cheese or Butter, Selling Milk, or Grazing', *JRASE*, 2 ser., 1, 1865, pp. 342-3, considered grazing even more profitable than milk-producing. Country milking received a tremendous impulse, much of it lasting, when the rinderpest of 1865-6 half-emptied the London cow-houses, but the milk was diverted from the less profitable business of cheese or butter making and no great increase of cows was necessarily involved.—J. C. Morton, 'Town Milk', *JRASE*, 2 ser., IV, 1868, pp. 95-7.

² On the increased demand and high prices in the fatstock markets see Robert Herbert, 'Statistics of Livestock for Consumption in the Metropolis', *JRASE*, XIX, 1858, pp. 496-500, and annually thereafter.

³ 'The Outcry about Meat', *Farmer's Magazine*, *loc. cit.*, p. 134.

⁴ Clement Cadle, *On the Management of a Breeding Herd of Cattle, on an Arable Farm...*, 1863, pp. 3-4.

⁵ W. Wright, 'On the Improvements in the Farming of Yorkshire', *JRASE*, XXII, 1861, pp. 129-30; J. D. Dent, 'Agricultural Notes on the Census of 1861', *JRASE*, XXV, 1864, p. 321.

tural statistics for England and Wales between 1867 and 1875 show a rise of approximately 21 per cent in cattle numbers, some of which may have represented recovery from the plague of 1865-66, although a negligible increase in sheep. Earlier maturity, with a quicker turnover of stock and perhaps heavier killing-out weights of cattle, probably increased the quantity of meat marketed still further. The capital value of the livestock of the U.K. increased almost 80 per cent between 1853 and 1878 according to Caird.¹

Prices moved strongly against wheat in the mid-1860's and at that time the poorer clayland arable was laid to grass in many districts. Much opinion was as yet against this expedient, although that enthusiastic M.F.H. the duke of Beaufort remarked prophetically in 1861 that "the next generation will have much more grass to ride over than the present."² The change was slow. Many farmers regarded the wheat crop with an almost mystical reverence, and in public, at least, many of them took the price of wheat to be the index of agricultural fortunes. Frere in 1860 remarked, in rather muddled language, that "though all are conscious that we can no longer rely on the corn-crops for paying the rent, perhaps none of us have been able sufficiently to throw off the trammels of custom and association, which led him to look for profit first to the stack rather than to the stall."³ A reason which was put forward in 1873 for the persistent emphasis on arable cultivation was that returns came in to the arable farmer throughout the year; "in short, he can as it were, live from hand to mouth on a comparatively less capital. It is not so however with a general stock farmer, who has necessarily to lie [sic] out his capital for extended periods."⁴ Most farmers were in any case conditioned to act by the knowledge that a greater physical production of grain and meat could be obtained by feeding stock on arable farms than on grass, and they therefore sought the most profitable combination of stock and grain production.⁵ In 1866 it was noted that "the fact that grass will pay, and pay much better for manure applied, than corn at its present selling price, is as yet recognized by a limited number of the agriculturists of the country;" the same observation had been made in 1858, another year in which grain prices had been especially low.⁶ Capital and manure continued to be spent on the ploughland at the expense of all but the best pastures. All except the supreme fattening pastures and the dairy pastures of Cheshire, which were properly drained

¹ Caird, 1878, *loc. cit.*, p. 290.

² James Stratton, *A History of the Wiltshire Strattons*, n.d., p. 79 n.

³ Frere, *loc. cit.*, p. 219.

⁴ A Cumberland Landowner, *op. cit.*, p. 11.

⁵ See e.g. 'Stock versus Corn; or rather the most profitable conduct of farming', *Farmer's Magazine*, 3 ser., XXIII, 1863, p. 142.

⁶ Moscrop, *loc. cit.*, p. 337; H. Tanner, 'The Agriculture of Shropshire', *JRASE*, XIX, 1858, p. 38.

and fertilized with bone dust, seemed to contemporaries less profitable than they might have been, through continual mowing and depasturing by dairy cows and young growing stock which took more out of the land than they returned in manure. Such pastures were thought to be in a gradually deteriorating state.¹

Conversion of arable land to permanent pasture was probably delayed by the rise of grain prices to a peak in the early 1870's, but by this time informed opinion was in favour of fattening stock on grass and finishing the beasts with oilcake. This ensured that the pastures were adequately manured, and besides being a cheaper mode of production than yard- or stall-feeding enabled the fatstock to be sold in June or July, when the price of beef was higher than at the end of summer. "The great difficulty," as it was seen in February 1872, "is in making a beginning. The routine of years, possibly handed down for generations, cannot be broken through without a pang; but such pangs seldom outlive the first favourable balance-sheet, and it may be confidently stated that for some time past the farmers who have made most money are those who have paid as much attention to the improvement of their grass as to the growth of fine crops of corn or roots."² Even later the trend was on occasion reversed for a brief spell, but the successive peaks of wheat and barley prices and acreages were lower and lower in the '70's and were looked on as transient. For example, at Aldbourne, Wiltshire, where in 1878 "corn growing superseded the making of meat," this was regarded as "a state of things which cannot last long,"³ and indeed it did not last, for this was where Henry Wilson allowed a large acreage to go down to grass for the stock in which he was dealing, and where as a result the hamlet of Snap was eventually deserted.

There are signs that the growing profitability of mixed farming and the weakening position of the specialist cereal grower was not without influence on the size and type of farm holdings. The census returns of 1851 and '61 show a decrease of 6,132 farms below 300 acres, and an increase of 229 in those between 300 and 1,000 acres, for the ten very diverse counties for which figures are available for both dates. This change was explained as the engulfing of the smaller holdings, which had been occupied by men of little capital, "who were very much dependent upon corn crops for their living, and, at the

¹ Anon., 'On the Price of Butcher-meat', *loc. cit.*, pp. 363-4; J. C. Morton, 'On the Management of Grass Lands', *Jnl. of the Bath & West Soc.*, XIII, 1865, pp. 62-4, 68-9.

² H. S. Thompson, 'On the Management of Grass Land. . .', *JRASE*, 2 ser., VIII, 1872, p. 179.

³ *Agric. Gazette*, N.S. VIII, 18.11.1878, p. 463, quoted by F. M. L. Thompson, 'Agriculture since 1870', *V.C.H. Wilts.*, IV, 1959, p. 97.

present prices of grain . . . not having stock to back them up, cannot make farming remunerative."¹ In Cumberland in 1874 the growing number of livestock was attributed to the improved quality of the pastures more than to the increased acreage of grass, although many clayland farms which a few years earlier were heavily cropped to afford a precarious livelihood had been drained and converted into good grazing farms.²

V

High feeding had been so much extolled as the salvation of the farmer at mid-century (even Fred Vincy in *Middlemarch* was supposed to have written on the 'Cultivation of Green Crops and the Economy of Cattle Feeding')³ that the shift of advanced opinion in favour of grassland fattening by the early 1870's comes as some surprise. According to Clapham, although lease covenants were in practice winked at, cropping changed in no essential way between 1850 and 1886.⁴ But the agitation for more flexible rotations was so strong in this period that had lease covenants been so uniformly a dead letter, there would surely have been major cropping changes. In 1863 the [London] Farmers' Club was discussing how to meet the growing demand for meat and wool, "without materially disarranging our order of management, so objectionable to land-agents."⁵ The summer droughts of the following year and of 1868, when the root-crops were severely damaged, brought home the need for freedom to amend cropping plans to meet contingencies of this sort,⁶ quite apart from the desirability of tailoring rotations to suit the trends of prices. The agitation against cropping restrictions, although perhaps as Professor Ashworth claims in part a rationalization of antagonism to the continued political influence of landowners,⁷ was underpinned by genuine economic considerations. It seems that the growing incentive to produce livestock could account for much of the uneasiness in landlord-tenant relations, in particular the demands for freedom to alter cycles of fodder crops and to insert catch crops of cereals, according to the swaying state of the markets, and for more livestock housing, without which no big increase of stock was possible.

With rising livestock prices as the attraction, fodder crops were at first extended at the expense of grain. On the clays the mangel acreage increased throughout the 1850's, but by 1865 farmers in many clayland districts were

¹ Dent, *loc. cit.*, pp. 323-4.

² Farrall, *loc. cit.*, p. 407.

³ George Eliot, *Middlemarch*, 1947 edn., p. 889.

⁴ Clapham, *op. cit.*, II, pp. 275-6.

⁵ 'Stock versus Corn', *loc. cit.*, pp. 142-3.

⁶ J. C. Morton, 'Some of the Agricultural Lessons of 1868', *JRASE*, 2 ser., v, 1869, pp. 54-5.

⁷ Ashworth, *op. cit.*, p. 50.

finding it cheaper to feed stock on purchased grain than to grow roots.¹ In Worcestershire in 1867 mangels were still being extended on the clays, "from the high price of meat," and it was observed of Cumberland in 1874, that "the majority of skilled agriculturists do not go in solely for producing wheat; they would much rather sow the land with oats and barley than forgo the turnip crop, which is now looked on as the mainstay of arable farming."² But in the drier eastern counties, where roots, although more difficult to grow, occupied a larger proportion of each farm than in the west, the root-break had come to be viewed with a jaundiced eye by the mid-1870's. By that time, as Lawes showed, stock could beyond doubt be fattened more cheaply on grain and cut-straw than on roots. The insistence of landowners that 25 per cent of the farm acreage must be kept under roots, according to the dictates of the four-course system, was a source of some bitterness.³

VI

The retention of mixed farming systems in which livestock were replacing grain as the most profitable elements had in the 1850's and '60's been a reasonable adaptation to prices, which favoured now the one side, now the other, while gradually swinging farther and farther to the livestock side. Mixed farming was less well suited to the conditions of the '70's. The fall in the price of wheat was uneven and the temporary peak of the Franco-Prussian war period dissuaded grain-conscious farmers from a wholehearted change to fatstock production on grass, but after 1873 hesitation in following the trend of the previous twenty years evaporated. However, the persistence so late with cereal growing under the shelter of mixed farming and high feeding must have intensified the distress when bad harvests and the landslide in grain prices occurred at the end of the '70's. Until then, since mixed farming's strength lay in stabilizing income through the sale of several commodities, short-term, out-of-phase fluctuations in the prices of its various products could be accommodated. The collapse of grain prices and thus one whole side of the system was needed to effect the break-up of mixed farming. Even so, as has been shown from the income tax assessments, the rise in rent between 1851-52 and 1878-79 had been greater in the pastoral north and west and in the grazing counties than in the arable east of England. Indeed,

¹ P. D. Tuckett, 'On the Modifications of the Four-course. . .', *JRASE*, XXI, 1860, p. 262; H. Evershed, 'On Sheep', *JRASE*, 2 ser., I, 1865, p. 335.

² C. Cadle, 'The Agriculture of Worcestershire', *JRASE*, 2 ser., III, 1867, p. 452; Farrall, *loc. cit.*, p. 407.

³ F. Clifford, 'The Labour Bill in Farming', *JRASE*, 2 ser., XI, 1875, pp. 123-4, and citing J. D. Lawes in *JRASE*, 2 ser., IX, 1873, pp. 373-4.

in arable districts, especially on the chalk and sands of the drier counties where grass does not thrive and leys are difficult to establish, and above all on the poor clays where expenditure by landowners may have been highest, there may have been a fall in real rent over these years.¹ This is a final indication that profits from livestock rather than grain had become increasingly the basis of agricultural prosperity. The structural changes in English agriculture during the Great Depression, which made livestock production far more prominent than cereal growing, had been foreshadowed by the transformation of mixed farming.

¹ Clapham, *op. cit.*, II, pp. 278-9; Caird, 1878, *loc. cit.*, p. 315.

Letters to the Editor

SIR,—Your reviewer of *English Farming Past and Present* is entitled to the view that the history of land-holding either is or is not an important part of the history of agriculture, but in taking a generally unfavourable view of a book, he should not depreciate it for things it should not or could not contain. There are three items under the last heading that call for comment.

The book has little to say on Wales, Scotland, and Ireland—true enough. Its title is "*English Farming* . . ." How our fringe Celts would rage had these countries been included in a work with this title, and one of the editors a McGregor!

Moreover, I suspect that the reviewer has been either very fortunate, or but little acquainted with publishers and their inevitable delays, and that he has forgotten the printing strike. I think there is no reference to John's *Land Tenure* and the papers of the First International Conference on Economic History because they had not been published when the two introductions were written, and that the book, after the usual and unusual (the strike) delays, was brought up to date by the simple

publishers' device of putting the current date on it.

I remain, Sir,
Your obedient servant,
GEO. ORDISH

SIR,—I would like to add to Mr Jeffrey Radley's examples of the use of holly for sheep-feed in winter by pointing out that it was regularly used in High Furness in Lancashire. Thomas West in his *Antiquities of Furness*, 1805, pp. 40-1, describes the practice in the early Middle Ages and goes on to remark that "this custom has never been discontinued." Clumps of holly trees, he says, were carefully preserved long after other woodland had been cleared, and mutton thus fed "has a remarkable fine flavour." Another occurrence of the name *hollin* in place-names may be found in *The Beetham Repository*, 1770, *Cumberland and Westmorland Antiq. and Archaeolog. Soc.*, Tract Series, 7, 1906, p. 104.

Yours faithfully,
JOAN THIRSK

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