

The Great Agricultural Depression on the English Chalklands: The Hampshire Experience

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Abstract

This paper considers the response of those farming one of the more vulnerable ecosystems, the English chalklands, to the dramatic fall in prices during the Great Agricultural Depression of the late nineteenth century. It particularly looks at the Hampshire Downs where the regime which had evolved over the previous decades provides an example of mixed farming at its best. By fully realizing the potential of the system, farmers successfully shifted production to target a number of protected, high-value, marketing niches. At the same time, the integrity of the land was maintained through sustainable, husbandlike cultivation. While this system has been all but ignored by modern historians, it was amongst the most intensive of all English mixed farming regimes.

THE notion of a pervasive depression in English agriculture during the last quarter of the nineteenth century has been widely challenged since the publication of the seminal article, 'The Great Depression in English agriculture, 1873-96', by T W Fletcher in 1961. Fletcher argued that the impact of falling prices and increased imports was sectoral with livestock production sheltered and corn growing badly hit. More recent research by F M L Thompson supports this view. British agriculture at the time was in relative decline, and consequently needed to be restructured in order to reflect changing marketing opportunities. Thompson noted, 'The notion that there was a general or chronic depression in English agriculture throughout this period, or even between mid-seventies and mid-nineties, must be abandoned ...'.¹ However, he urged more investigation of individual farming regions '...with a view to constructing a new geography of farming in England as it

adjusted to, or was buffeted by, the marketing conditions of the period'.²

Along with the arable clays, the light lands of southern England have been cited as having been particularly afflicted during the period known as the Great Agricultural Depression. In part, this was because mixed farming was so closely associated with the principles expounded during the high farming/high feeding era immediately preceding the fall in prices.³ Within the mixed farming system intensive livestock feeding increased fertility of the soil so improving the yield of grains. The arable produced a variety of animal feeds to encourage heavier stocking, leading again to greater yields from the arable. Both these processes were aided by the use of purchased feeds and fertilizers which became more widely available from the 1850s onwards. The farmer was protected against disastrous seasons by splitting his production between the two sectors. From the mid-1870s, with the fall first in wheat and then, to a lesser extent, in meat prices,

¹ T W Fletcher, 'The Great Depression in English agriculture, 1873-96', *Econ Hist Rev*, 2nd ser. XIII, 1961, pp 417-32; F M L Thompson, 'An anatomy of English agriculture, 1870-1914', in B A Holderness and M E Turner, eds, *Land, Labour and Agriculture, 1700-1920: Essays for Gordon Mingay*, 1991, pp 235 and 240.

² Thompson, 'English agriculture', p 211.

³ See J Caird, *English Agriculture in 1850-51*, 1852, p 59; P Pusey, 'On the progress of agricultural knowledge during the last four years', *JRASE*, III, 1842, pp 204-5; J J Mechi, *How to Farm Profitably*, 4th ed, 1864, pp 17-19.

the balance of the regime was upset, and, it is argued, agricultural output fell drastically on the Hampshire Downs. Thompson calculated that between 1873 and 1911 England as a whole had no increase or decrease in gross farm output at constant 1911 prices. In Hampshire the decline for the county as a whole was 13 per cent between 1873 and 1894 with a further fall of 1 per cent between 1893 and 1911.⁴

The chalk formation in Hampshire formed approximately half the county, stretching from east to west through the centre. To both the north and south were regions of inherently more fertile, but difficult to work, clay and of poor sandy soils. In Thompson's league of counties, Hampshire ranked in twenty-eighth place. Interestingly both Dorset (+1 per cent) and Wiltshire (-0 per cent) appear to have fared considerably better than the neighbouring county of Hampshire. However, of the remaining eight southern counties which contain a reasonably large area of chalkland, none was above the average for the country as a whole. More detailed examination indicates, however, that the situation on the Hampshire Downs was less extreme than the figures would suggest. There were pivotal changes in the system which were only in an embryonic phase during the high farming period, but which blossomed during the crisis years of the depression. The transformation resulted in a faster turnover of commodities targeting a luxury, high value market which helped to shield the farmer from the extremes of economic hardship. This article will examine this development.

I

According to the research of E L Jones, a decline in output from light-land agriculture was predictable, indeed, almost inevitable. Shortly after Fletcher noted the

regional effect of the depression, Jones explored agricultural trends between 1853 and 1873 in order to identify those regimes which had responded to what he called 'the changing basis of agricultural prosperity', that is the need to shift out of grain into livestock. The shift in profitability towards the animal sector, he argued, began early in the high farming period. Mixed farming systems did not adequately restructure. They were, according to Jones, both too flexible and at the same time too rigid. The ability to respond to short-term fluctuations in prices prevented the farmer from recognizing the long-term shift in profitability away from grain production. When, eventually, farmers did attempt to change they were prevented from doing so by rigid, strictly enforced lease covenants. Jones argued that these prevented farmers from abandoning the use of turnips and planting permanent pastures. The availability of purchased feeds, he argued, meant it was no longer viable to feed livestock from the arable.⁵

Farmers on the Hampshire chalks responded in precisely the manner criticized by Jones, that is by maintaining an intensive arable-livestock production system. With 86 per cent of the agricultural land in arable production in 1874, the area was perhaps the most totally arable of the mixed light-land regions.⁶ The physical arrangement of the chalkland parishes in Hampshire suggest that this was a long-standing situation. Mixed farming areas ranging from Lincolnshire to Wiltshire are generally typified by long narrow attenuated parishes running from the top of the hill down into the valley. Farms are structured to contain a share of each type of land. On the Hampshire Downs this was rarely the case. Pre-parliamentary enclosure of atypically large areas of the downland sheepwalk for arable use again suggests a

⁵ E L Jones, 'The changing basis of English agricultural prosperity, 1853-1873', *AHR*, 10, 1962, pp 102-19.

⁶ BPP, 1874, LXIX, *Agricultural Returns for Great Britain*, 1874.

⁴ Thompson, 'English agriculture', pp 232-33.

relatively early shift in the region into some form of essentially arable farming.⁷ The long-established sparsity of pasture would have increased the hesitancy of farmers to make the conversion from a mixed system to an essentially pastoral regime. Because this shift was seen as essential for survival by Jones, the Hampshire chalklands should have been especially devastated by the agricultural depression. However, it was during and immediately after the depression that the region was cited, indeed praised, by numerous contemporary authors as the quintessential mixed farming system of the period.⁸

II

One of the most dynamic features of mixed farming systems was the manner in which new crops and techniques could be incorporated into the regime with little disruption to production. Consequently, the better systems were constantly evolving. This was true of the system on the chalks of Hampshire. Between 1700 and 1850 the emphasis of the Hampshire system was essentially focused on grain production. Sheep were kept principally to maintain the fertility of the land. However, within this broadly arable mixed farming system changes occurred which were of major significance to the system which was eventually to develop in response to the depressed state of agriculture in the final quarter of the nineteenth century.

By the beginning of the eighteenth century the emphasis of the system was already on the production of grain. Edward Lisle, a farmer from Crux Easton on the Hampshire Downs, recorded a very loose

rotational system containing a mixture of grain crops and grass and clover leys with some vetches and peas. Generally wheat was followed by a spring corn until the land began to fall out of condition when only oats could be grown. When the land could no longer sustain even oats it was returned to a grass and clover ley for a number of years until deemed to be again ready for wheat. Sheep were principally kept to maintain the fertility of the arable land. They fed on the sheepwalk during the day and were then folded on the arable at night. In all but the most fertile parts of the region wether flocks were kept. Ewe flocks were considered more profitable because they were believed to produce better manure as well as wool and a crop of lambs. However, they were less able to withstand the harsh conditions on the downs, required higher quality winter and spring feeds, had a high mortality rate amongst the lambs if the ewes were folded on the land being prepared for spring corn, and needed more shepherding.⁹

By the 1750s, although the emphasis remained on the arable, the system was altering. More land had been taken into arable, often in conjunction with enclosure. The rotation became more systematic. On all but the most infertile arable land the wheat crop was followed by a spring corn then grass and clover ley. Ideally the ley remained down for two years, being mown for hay in the first year and then grazed. Often, however, this was too intense a regime for the soil and it was necessary to extend the ley. As the use of arable feeds for the sheep was extended it became increasingly common to convert to ewe flocks.¹⁰ By the late 1790s Hampshire was well established as a sheep breeding region. This indicates an import-

⁷ I wish to thank S Seeliger and J Chapman for this information from their research on enclosures in Hampshire.

⁸ See, for example, J Wrightson, *Sheep: Breeds and Management*, 2nd ed, 1895, pp 142-3; W Fream, *The Complete Grazier*, 14th ed, 1900, pp 510-11; W J Malden, *British Sheep and Shepherding*, 1899, p 154; J A Clarke, 'Practical agriculture', *JRASE*, XIV, 1878, p 521; BPP, 1881, XVI, *Report on Hampshire by W C Little to the Royal Commission on ... the Agricultural Interest*.

⁹ E Lisle, *Observations in Husbandry*, 2nd ed, 1757, I, pp 30-1, 291; II, pp 157, 179, 191.

¹⁰ G G S Bowie, 'Northern Wolds and Wessex Downlands: contrasts in sheep husbandry and farming practices, 1770-1850', *AHR*, 38, 1990, p 119.

ant improvement, associated with arable feeding, in the ability to feed ewes and lambs during the winter and spring months. However, the foremost concern of most farmers remained the production of corn. The rotation grew few feed crops apart from grass and clover leys and some vetches and peas.¹¹

During the Napoleonic Wars and the following years of depression much of the remaining 'virgin' downland was enclosed and ploughed, first in response to the high wheat prices of the war and then in an attempt to maintain income as the prices fell. Because the grazing areas available for sheep were diminished, large numbers of the animals were sold.¹² By the time of the investigations related to the commutation of the tithes in the late 1830s and '40s, it was recognized that this move towards monoculture had left extensive areas exhausted. The tithe commissioners noted a more balanced farming regime with greater numbers of sheep and a more mixed rotation. Turnips were widely introduced into the rotation creating a five course of wheat, turnips, spring corn and two years of ley.¹³ With the more extensive supply of feeds from the arable combined with the scarcity of open downs, sheep were folded on the arable both day and night.

Farming on the downs by the mid-century had undergone considerable change from a largely pragmatic, relatively primitive, extensive system to a more standardized rotation which guaranteed a better supply of feed, and led to a more intensive system of corn and sheep production. The rate of transformation escalated after 1850.

Contrary to the assertions made by Jones, lease restrictions did not prevent this. Almost universally the leases on the Hampshire Downs contained covenants restricting the tenant in four important ways. First, they were not allowed to plough up pasture without permission and with a penalty. Since the region was already very heavily weighted towards arable land use, the strict enforcement of this covenant is hardly surprising. Secondly, leases almost always stipulated that hay, straw, stubble, chaff, haulm, dung, compost, or soil were to be used on the farm. This was a well-considered covenant. The light soils needed all available humus. As purchased feeds and fertilizers became increasingly available the restrictions were altered to allow the sale of these products in return for their replacement with given quantities of fertilizers or feeds. This policy increased the options of the farmer. However, if the landowner or agent who agreed to the equivalents was not aware of the science behind the substitution, the fertility of the soil was threatened. Unless some means of supplying the humus was instituted on the farm, the reliance on artificials could eventually lead to soil exhaustion. Indeed in evidence relating to the Salisbury Plain district in Wiltshire given to the Royal Commission on agriculture in 1895 it was suggested that 'for some reason or other which is difficult to discover, the quality [of produce] does show signs of deterioration'. Amongst the explanations given for this was the 'gradual exhaustion of the fertility of the soil by 'whipping' it with artificial manures'.¹⁴ The third typical covenant related to animal stocking rates. Leases were not used to prevent overgrazing. Instead they stipulated the *minimum* number of sheep to be kept on the farm. These covenants appear to have been regularly enforced. In evidence to the Richmond Commission in 1881 W C Little

¹¹ W and A Driver, *A General View of the Agriculture of Hampshire*, 1794, pp 15-7; G G S Bowie, 'New sheep for old - changes in sheep farming in Hampshire, 1792-1879', *AHR*, 35, 1987, pp 19-20; Bowie, 'Contrasts in sheep husbandry', pp 119-20.

¹² C Vancouver, *A General View of the Agriculture of Hampshire*, 1810, pp 266-7; BPP, 1833, V, *Select Committee on the State of Agriculture*, pp 3798-3805; B Afton, 'Mixed farming on the Hampshire Downs, 1837-1914', unpublished PhD thesis, Reading University, 1993, pp 122, 203.

¹³ PRO, IR/18/8716, 8873-9228, 9714, 14807-8, Tithe files for Hampshire.

¹⁴ BPP, 1895, XVI, *Royal Commission on Agricultural Depression*, p 9.

spoke of the common occurrence of tenant farmers taking sheep belonging to others, often dealers, at essentially their own expense, in order to comply with these covenants.¹⁵ The fourth type of covenant dealt with cropping. Unlike some areas where the rotation was carefully stipulated, in Hampshire this element of the lease was liberally worded and loosely enforced.¹⁶ Tenants were prevented by lease from producing more than two white corn crops in succession and occasionally the total proportion of grain in a rotation was limited. Furthermore, sainfoin and other crops grown for seed production were also limited, although the same crop if to be grazed or mown generally was not.¹⁷ The object of lease covenants on the Hampshire Downs would appear to have been concerned with protecting the land from unhusbandlike practices. They do not provide evidence to support the suggestion that the restrictions would prevent a shift out of any course of the rotation or even out of arable farming altogether. On the contrary, owners appear to have been willing to alter lease covenants in response to changes taking place on their estate farms.

During the period from the 1840s through the early 1870s the most intensive capital expenditure by the farming community was directed towards the creation of an essentially new agricultural regime on the Hampshire Downs. While the high farming period is nationally associated with the increased utilization of off-farm inputs such as fertilizers and animal feeds, on the Hampshire Downs, and in some of the

neighbouring areas of the southern chalklands, this was not the case. Expenditure centred around the development of a new sheep breed and a much modified rotational system. The key elements were the evolution of the Wiltshire eight-course rotation and the introduction of the Hampshire Down sheep.

Converting a flock to the new Hampshire Down breed was costly. This was in spite of the fact that it was not viewed as an elitist breed like the Leicester or the Southdown. Instead the 'Hamp' was regarded as the 'tenant farmers' sheep'.¹⁸ In the 1850s only a minority of flockmasters had changed to the breed being developed by crossing the local Old Wiltshire and Old Hampshire sheep with the Southdown. By the early 1860s, the Hampshire Down sheep breed was fixed. The resultant animal was both large and hardy; could lamb early and fold in all weathers on the arable. In addition it had two other vital traits. If fed intensively the lambs would be fat for slaughter at between seven and fifteen months. Again with intensive feeding, the young ram lamb was ready for service at seven months. The ability of the ewe to take the ram early meant that the sheep could lamb in December or January while most other sheep were not producing until the spring. This combined with rapid fattening and early maturity gave the breed a head start in the rush to market. These characteristics were so fundamental to the role of the sheep during the years of the depressed state of agriculture that in the Ministry of Agriculture survey of 1907, 78 per cent of the sheep in the county were Hampshires.¹⁹ To exploit the advantages offered by the farming system as it was to emerge, farmers

¹⁵ BPP, 1881, XVII, *Royal Commission on ... the Agricultural Interest: Minutes of Evidence*, qq 47096-100.

¹⁶ E L Jones cited the strict enforcement of cropping covenants as inhibiting farmers from changing their farming systems in response to changing economic conditions ('Agricultural prosperity', p 117). This, he believed, also restricted the introduction of catch crops. I have found no evidence that these covenants were enforced except during the final two years of a tenancy or as a means of removing a difficult or unwanted tenant. This conforms with evidence given to the Royal Commission on Agricultural Depression by R Henry Rew: BPP, 1895, XVI, p 19.

¹⁷ See, for example, Hampshire Record Office [HRO], 55M67/T52; 51M89/39, 40, 48; 5M68/2 and 3.

¹⁸ J Darby, 'The breeds of sheep, and their adaptations to different districts in the south and west of England', *Jnl Bath and West of England Society*, 3rd ser, III, 1871, pp 70-7; E P Squarey and J E Rawlence, 'The Hampshire Down sheep', *The Hampshire Down Flock Book*, Salisbury, 1890, I, pp xii-xv.

¹⁹ PRO, MAF 7/20, Livestock returns for the county of Hampshire, 1908.

TABLE 1
Wiltshire eight-course rotation

Year of rotation	Crops
1	Catch crop of rye, winter barley, trifolium, or vetches, followed by a main crop of swedes, turnips, or rape
2	Swedes, kale, spring vetches, or mangolds
3	Wheat
4	Catch crop of stubble turnips, rye, winter barley and oats followed by a main crop of barley or oats
5	Ley, sown with the 4th year spring corn, cut for hay
6	Ley, grazed
7	Wheat
8	Catch crop of stubble turnips, rye, winter barley and oats followed by a main crop of barley or oats

found it necessary to invest in a flock, whether it was a top quality pedigree flock or a less prestigious, and less expensive, 'commercial' flock.

Linked with the sheep breed was the need to provide a guaranteed supply of feeds throughout the year, but particularly during the late winter and spring when livestock requirements were most critical. The new Wiltshire eight-course rotation met this need (Table 1). Again, introducing a new rotational system was costly. In the prize essay for Hampshire published in the *Journal of the Royal Agricultural Society* in 1861, John Wilkinson cited expense as one of the principal barriers preventing changes in the rotation.²⁰ In spite of this, again in the 1860s, the old five-course rotation of wheat, turnips, spring corn, and two years of ley was being replaced by a more complex and intensive eight-course system. The Wiltshire eight-course began its existence as a four course of turnips, swedes, wheat, barley. This was largely in response to the need to extend the period available for feeding on the root crop. Often in a more traditional rotation folding on the

root crop had to be rushed in order to plant the spring corn. By following the roots with wheat which was planted in the autumn, this problem was solved. There was some professional hostility amongst surveyors and valuers, particularly those from outside the region, towards the new Wiltshire rotation. Many considered it inappropriate to incorporate two successive grain crops, and fields were often less free of weeds than in some other systems.²¹ In Hampshire, however, it appears to have been generally accepted. As early as 1865 the lease for Seagers Farm and Manor Farm in Twyford made specific provision for the incorporation of a nascent Wiltshire-type rotation.²² Wilkinson praised this new rotation but indicated that it was really only suited for the better quality of land. By the 1870s a solution had been found. Two rotations, the traditional Hampshire rotation – wheat, barley, ley, ley – and the new Wiltshire four course – wheat, barley, turnips, and swedes – were joined together to create the Wiltshire eight course of roots, roots, wheat, spring corn, ley, ley, wheat, spring corn.

A fundamental element which facilitated the level of production in the system was the use made of catch crops. These were fast growing crops planted after the harvest of one main crop and fed, generally *in situ*, before the preparation of land for a second. Neither the plants involved nor the technique was new. Traditionally taking a 'stolen' crop was most often effected when a main crop failed. It was also an occasional practice to steal a crop between wheat, harvested in August, and turnips or swedes, planted in May or June. Generally this was done on an opportunistic basis, a pragmatic farmer planting one or two fields if conditions seemed favourable or if there was a predicted feed shortage. It was the intensity of catch cropping, particularly of

²⁰ J Wilkinson, 'The farming of Hampshire', *JRASE*, 22, 1861, p 292.

²¹ Wiltshire Record Office, Savernake Mss, 9/1/325.

²² HRO, 51M89/39.

TABLE 2
Animal feed supplies provided by mixed farming on the Hampshire Downs

<i>November–February</i>	<i>March–April</i>	<i>May–August</i>	<i>September–October</i>
Swedes	Mangolds	Clover and seed	White turnips
White turnips	Kale	Grass	Cabbage
Cabbages	Tares	Trifolium	Late rape
Kohl-rabi	Winter rye	Early cabbage	Stubbles
Grass	Winter barley	Early rape	Grass
Turnip tops	Winter oats	Vetches	Young seeds
Hay	Watermeadows	Sainfoin	Hay
	Turnip tops	Kale	Early kale
	Rape		Kohl-rabi
	Hay		Sainfoin
			Mustard

Source: W J Malden, *British Sheep and Shepherding*, 1899, p. 93.

winter crops, which was innovative in the Wessex region. By the late-1870s it had become formalized in the increasingly popular Wiltshire rotation. The range of regularly produced crops and the periods during which they were fed are illustrated in Table 2.

The use of catch crops was limited in Britain by climate, growing season, soil type, and similar other considerations. For the most part, its inclusion as a regular feature of a rotation was consequently limited to the southern light lands. It was also important to select the crops to be sown with care. The plants had to be winter hardy, establish themselves quickly, make early and rapid growth in the spring, be undemanding both of fertilizers and tillage, and produce a large bulk of livestock feed. During the period, white turnips (for leaves and small bulbs), rye, winter barley, winter oats, tares, mustard, rape, and trifolium were regularly planted as winter catch crops. Generally these crops were used with main crop feeds in the late winter and early spring. Thus, the first to be fed, rye, was usually used with the spring bite from watermeadows, turnip tops, swedes, and mangolds. As the rye finished winter barley was introduced. Catch crops helped make the transition between feeds more gradual, ensured a variety of young

nutritious feeds, and helped protect the farmer against the fodder shortage a crop failure might cause.

The technique of catch cropping increased the magnitude of cropping. In an eight-year rotational cycle, as many as eleven crops could occupy a single field. Of these, only two of the crops were wheat and two, spring corn. The spring corn, particularly oats, but increasingly barley as well, was often fed to livestock on the farm.²³ Thus, by including catch crops in the rotation, eight or nine plantings of feed crops could be taken in eight years. However, quantifying the output from catch cropping is problematical. The statistical sources available once the technique was widespread, the annual agricultural returns, do not include the majority of catch crops. These were almost invariably planted after, and usually fed before, the June returns were completed. Numerous sources – including valuations, cropping records, farm diaries, and contemporary references to the practice – indicate that during the depression the Wiltshire rotation either in its traditional form or with modifications, but always with catch

²³ Thompson, 'English agriculture', p. 234.

cropping, was standard and widespread.²⁴ For example, John Wrightson, president of the agricultural college at Downton just in Wiltshire from the Hampshire Downs, suggested that the area of catch cropping was 'co-extensive with the entire area under root crops' in both Wiltshire and Hampshire.²⁵ According to this estimate, an additional 30,000 to 50,000 acres of feed crops were annually grown in the region. Because the crop was fed young, it was particularly nourishing.

The feeds from the rotational arable were supplemented by several other crops. Sainfoin was planted along side the rotation and occupied approximately 15 per cent of the agricultural land.²⁶ Generally it was anticipated that the crop would last the length of the rotation. However, this was flexible. It was usual to have several fields of sainfoin at different stages of growth on the farm. Watermeadows, established in the region between 1600 and the mid-nineteenth century, were maintained and used for early spring grazing for sheep, summer grazing for cattle, and for hay crops. This was an important source of early spring feeds and a saviour to farmers during periods of drought. However, it can be estimated that only 15 per cent of the sheep on the downs had access to watermeadows, and that the land produced only 8 to 10 per cent of the hay crop.²⁷ Downland sheepwalk, where it still existed, was principally used as summer exercise grounds for breeding ewe flocks.²⁸

Purchased feeds were also an increasingly important source of feed. From the third quarter of the nineteenth century, the

prices of these products, like most other agricultural commodities, fell.²⁹ The amounts available, through both home production and import, increased dramatically. On the Hampshire Downs, cake-and-corn came to be routinely used to supplement the arable feeds for pregnant and lactating ewes as well as lambs, particularly ram and wether lambs, which were being intensively fed as breeding stock or for rapid fattening. Depending on the intensity of the feeding regime and the supply of other feeds, a sheep's daily diet could contain up to 2 lb of cake, or it might contain none.

The intensity of the farming regime on the Hampshire Downs is illustrated by a description published in 1900 of the 'ordinary management for meeting the wants of a Hampshire Down flock on a Hampshire farm':

The sheep are provided with an endless succession of green fodder and roots throughout the year, and this is aided at the critical period of spring by the water meadows, which constituted an important feature of the farms. In early spring the flock is on roots, and these are seldom pitted, but are left to throw up tops over which the young lambs are allowed to run before their dams. In late March the water meadows are folded, the lambs still being allowed to run forward. Next follow rye and winter barley, trifolium, vetches, rape, clover, cabbage, and early turnips, which bring us once more to August and the first symptoms of winter feeding. Mangel and cabbage are both relied on during the hot months, and are used as a variation from less nutritious diet. The sheep are, indeed, constantly changed from one food to another, and are generally receiving at least two sorts of natural herbage daily...

A Hampshire Down lamb in mid-career is often revelling in ten or eleven changes of food in the course of a long summer day. At early morn he roams over dew-besprinkled vetches, and as the sun rises higher in the heavens he is attracted to mangel by the familiar sound of the cutter. Thus regaled, he is strengthened by an allowance of cake mixed with split peas, malt, and other pleasant and toothsome additions. The shepherd's voice is next heard calling him to cabbage, and perchance as the day

²⁴ Fortunately farm records, particularly valuations, provide some idea of the frequency with which catch crops were taken. Valuations, often calculated in October, were made both when a successful farmer died or changed to a better tenancy, and when failure forced a farmer to give up his holding. Thus the source reflects the husbandry practices of both.

²⁵ J Wrightson, *The Principles of Agricultural Practices as an Instructional Subject*, 3rd ed, 1893, p 197.

²⁶ Afton, 'Mixed farming', p 127.

²⁷ *Ibid.*, p 122.

²⁸ *Ibid.*

²⁹ *Statistical Abstract of the United Kingdom, 1850-1914; The Economist*, Oct 1850-1914.

declines he rests amidst the grateful and cooling shade of rape leaves towering above his recumbent form, while ever and anon he nibbles playfully at the tenderest and youngest shoots. The ever-watchful shepherd now leads his flock to pastures new in the shape of clover eddies or aftermath, where they 'spread' and amuse themselves for a brief space, and lastly he takes them back to their fold of vetches, which enlists their sated attention until sundown. Such is the enviable day of a Hampshire Down lamb in July.³⁰

This system of sheep folded on the arable was to produce the most intensive mixed farming system found in Britain in the nineteenth century.

III

The agricultural regime as practised on the Hampshire Downs had a number of features which made it particularly successful in maintaining and even improving the fertility of the land. First and foremost was the use of the fold on the arable.³¹ In addition, there were other less obvious elements which maintained a high degree of sustainability. Because there was always a crop to be planted, the land was rarely left fallow and received the minimum amount of tillage possible. On light chalk, leaching and erosion were serious problems when land was bare. Water loss on land without crop cover was high. Humus quickly blew away. The system of farming helped to reduce this waste. Another beneficial feature was the number of nitrogen fixing plants grown within and alongside the rotation. The effective accumulation of nitrogen increases with the length of time a plant is left in the ground. Thus, sainfoin was especially beneficial. The practice of undersowing spring corn with a grass and clover ley again increased the efficacious value of those legumes. Even the quickly grown vetches and trifolium stolen between main crops helped increase

the supply of nitrogen available to the rest of the arable. Disease and pests were more effectively controlled in a cropping system with a wide variety of crops. Multiple plant cropping helped to control infestation of soil borne, species specific, fungal, bacterial, and viral diseases, as well as insect grubs and larvae by denying access to particularly susceptible plants. Physically separating each crop into a number of smaller fields made each unit less likely to be attacked by wind born disease, flying insects, birds, and small mammals. Sheep kept almost entirely on arable land managed under a system of multi-cropped rotational agriculture also receive added protection from disease.³² One of the most destructive, liver fluke, can be controlled by an arable feeding routine such as that established on the Hampshire Downs. While relatively few sheep in the region were affected by the 1879 outbreak of sheep rot, in Wiltshire where there was more permanent pasture and meadow the incidence was much higher.³³

The system which became widespread on the Hampshire Downs was not only highly intensive and relatively sustainable, but it was also remarkably flexible. The eight-course rotation was developed to meet the distinctive conditions that existed in the region – a long growing season, the mild winters, and the ease with which the land was worked at almost any time of the year. It could be varied according to the depth and fertility of the soil, the needs of the farm, the state of the weather, and the anticipated marketing conditions. Generally this was done by taking another root crop instead of the second-year ley in the second half of the rotation or by increasing the length of the ley, creating a nine- or ten-course rotation. It was possible to use the flexibility to make major changes

³⁰ Fream, *The Complete Grazier*, pp 510–11.

³¹ See Afton, 'Mixed farming', pp 186–90 for a more complete discussion of the practice and benefits of folding.

³² C W R Spedding, *Sheep Production and Grazing Management*, 2nd ed, 1970, pp 284–87.

³³ BPP, 1881, XVII, q 46862; F Dun, 'Report on livestock', *JRASE*, 2nd ser, XVII, 1881, p 147; Afton, 'Mixed farming', p 183.

in the emphasis of the rotation. This was a particular advantage as the full impact of the depression began to be felt on the downs. In 1874, immediately before the onset of the depression, 86 per cent of the agricultural land on the Hampshire chalks was in arable. Of this arable land, 20 per cent produced wheat and 10 per cent barley. However, the Hampshire chalks had no particular advantage over other regions in either wheat or barley production. Because barley of higher malting quality could be imported during the years of the depression at a lower cost, less of the locally-grown barley was used for malting and more for livestock feed. When this was the case the use of oats was a more logical choice since it was less susceptible to a high rainfall, it was equally good as a feed, and the undersown ley was more successful planted with oats. The acreage of the arable planted in barley fell from 10 per cent in 1874 to 8 per cent in 1895. The fall in wheat acreage was dramatic. It went from 20 per cent of the arable to 8.5 per cent in 1895.³⁴ The disastrous harvest of 1892 when the yield dropped to 12.25 bushels per acre, below half the average for the region, induced many farmers to diminish, or even discontinue altogether the area traditionally planted to wheat.³⁵

A more significant restructuring of the arable, particularly in light of the changes which were to occur from about 1878, was its escalating use for the production of livestock feeds. As already demonstrated, when farmed in the Wiltshire rotation the arable was able to produce a wide variety of main and stolen crops of livestock feeds in addition to the cash crops grown. The onset of the depression resulted in a number of changes in the proportions of the crops being grown. There was an increasing effort to reduce the overall labour requirement on the farm. Apart

from the production of wheat and barley the most important reduction in acreage was that used for main crop roots. The cost, particularly of labour, and the uncertainty of the crop led to a reduction in the proportion of the arable in roots from 18 per cent in 1874 to 15 per cent in 1895.³⁶ The root break was both input and labour intensive. Were turnips and other roots cultivated in an unchanged manner throughout the period, the cost of roots would have risen markedly. Between 1871 and 1898 the weekly cost of a male farm labourer in Hampshire rose from 10s 9d to 12s 8d. However, during the same period the number of labourers to every farmer in the county fell from nine to five.³⁷ This was largely achieved by economizing on tillage operations. This resulted in considerable savings. In 1850 the tillage for a crop of turnips cost 20s per acre. By 1869 this had risen to 59s. By 1885, in spite of the increase in labourers' wages, the cost of growing roots had fallen to 34s. By the late 1890s this was down to 27s 6d.³⁸

Without the savings in the cost of labour, the reduction in the acreage of roots would have been more extreme. However even with it, turnips and swedes were no longer the mainstay of the winter-spring feeding cycle. As the cost of labour rose and the acreage in roots declined, catch crops were increasingly important as a low cost alternative feed. Many were planted in association with other catch crops to create a number of multi-crop courses in the rotation. Catch crops were extremely economical to grow. Crops like stubble turnips and mustard were simply scarified into the stubble of the previous grain crop. Trefoil and rye grass, when treated as a catch crop, were sown under a corn crop in much the same manner as ley grasses. When ploughing was necessary, catch cropping tended to reduce the culti-

³⁴ BPP, 1874, LXIX and 1896, XCII, *Agricultural Returns of Great Britain, 1874 and 1895*.

³⁵ Afton, 'Mixed farming', p. 61.

³⁶ BPP, 1874, LXIX, and 1896, XCII.

³⁷ Afton, 'Mixed farming', p. 217.

³⁸ *Ibid.*, pp. 139-40.

vation needed by the main crop both because the ground had been tilled before the catch crop was planted and because the catch crop provided cover to compete with weed growth.³⁹ As in the case of roots, the operations devoted to the catch crop were reduced as the cost of labour increased. Once it was recognized that less cultivation was essential, what had begun out of expediency became standard practice. By the late nineteenth century, catch cropping increasingly replaced the root break to provide a wide variety of green feeds for livestock.

Planting land down to grass and clover was another cost-saving expediency. This could be done by increasing the number of courses devoted to rotational grasses in the arable rotation or it was possible to convert the arable to permanent pasture. During the depression, between 1874 and 1895, the area in rotational grasses increased from 24 per cent to over 36 per cent of the arable.⁴⁰ The process involved little labour. The ley could be sown under a spring corn crop and then simply grazed after the grain was harvested. In this way even the expense of haymaking was avoided. An alternative was to allow the land to revert from arable to pasture. This conversion was done piecemeal with a variety of methods. Often a ley was simply extended indefinitely. This was found to work most successfully on nitrogen-rich, sainfoin leys. It was also believed that a good grass sward could be established by leaving an oat stubble to revert naturally.⁴¹ Many proprietary seed mixes were available both for creating permanent pasture and for renovating a poor sward. Landowners were likely to go to the expense of sowing land to grass. This was done either in an effort to attract new tenants onto farms which had a more limited arable acreage or to restore land which had come in hand.

Tenants were more inclined simply to leave land to revert to natural pasture in the least expensive way available.⁴² However, in 1895 rough grazing accounted for only 2 per cent of the agricultural land. The area in permanent pasture rose during the depression from 14 to 25 per cent of the total agricultural land. However, when compared with other areas, the Hampshire chalklands continued to retain a high proportion of arable.⁴³

IV

The flexibility of the Hampshire system led to another type of response to the changes in marketing conditions from the mid-1870s. This was to diversify the farming regime. The opportunity to do this was somewhat limited on the downs. Cattle, pigs, and poultry, for example, needed both water and housing. Thus, while sheep could be left to wander the hills, these other animals could not. But if the farm were favourably positioned with good land there were many options. Several examples will demonstrate this. E J Dance of Whitchurch regularly sold hay to London and straw to strawberry growers in the Southampton area. In addition, he kept a flock of Hampshire Down sheep, a herd of dairy cows, some pigs, and a large number of hens. His arable was farmed as an eight course but with catch crops replacing much of the root course. Sainfoin was also planted.⁴⁴ Henry Chalcraft of Alton kept 600 pedigree Hampshire Down breeding ewes, about 40 Welsh and Devon bullocks, 12 to 20 dairy cows and their calves, 100 to 150 Berkshire/Sussex cross pigs, and 200 to 300 hens. On the arable side he grew wheat, barley, oats, mangolds, swedes, turnips, hay, and various catch crops. In addition, he had a considerable

³⁹ *Ibid.* p 144.

⁴⁰ BPP, 1874, LXIX and 1896, XCII.

⁴¹ BPP, 1881, XVII, qq 300-01.

⁴² J A Caird, 'Recent experiences in the laying down of land to grass', *JRASE*, 2nd ser, XXIV, 1888, p 154.

⁴³ BPP, 1874, LXIX and 1896, XCII.

⁴⁴ HRO, 83/M/76/PZ15.

acreage of hops. These and the sheep were his most profitable products. He sold his fat cattle locally but found that 'grazing cattle [was] a very poor game'. On the dairying side he again found that this enterprise was only just worthwhile. He reported: 'Milk is sold to people who come for it, and the butter is retailed as far as possible, the rest going to the grocer with whom we deal'. Hardly the thriving side to farming one would expect.⁴⁵

V

A widespread response to the changes brought about by the fall in prices was to specialize in products which could not easily be produced elsewhere. The conditions on the southern light lands were combined with the sophisticated system developed in Hampshire to create the potential to target extremely specialized, high-value markets.

By the late 1860s, and well before the onset of low prices, the traditional role of the region as a breeding area was enhanced by the widespread use of the pedigree Hampshire Down sheep. Because the supply of early-spring feeds from the arable was almost guaranteed, the hardy Hampshires lambed in folds in the field in January and matured early and fattened rapidly to produce a ram lamb of seven months weighing 160 to 220 lb or a ewe lamb of 120 to 140 lb. As a breed, it was pre-eminently suited to the production of young fat lambs. Pedigree breeders were willing to invest high sums of capital in establishing large, high-quality flocks. Pedigree lambs and draft ewes found a number of markets. Once the breeder had replaced the ewes drafted out of his own flock, the rest of the ewe lambs and the drafted ewes were sold into other pedigree flocks and to commercial breeding flocks. Wether lambs were sold for store or

immediate fattening. Ram lamb sales were the breeder's most lucrative product. In 1902 sheep from the pedigree flock of Sir George Judd, a tenant farmer in Hampshire, averaged £8 10s 10d for ram lambs, £1 14s 0d for ewe lambs of the same age, and £2 10s 0d for four-year old pedigree regular draft ewes.⁴⁶ The early maturity of the breed made the ram lamb ready to be used for mating at seven months while other breeds still required the winter to mature sufficiently. This greatly enhanced the value of the lamb. Prices varied enormously from mere shillings if the ram lamb was not fit for sale in time for the tupping season to a record price of £1000 paid in 1902. The Hampshire was also particularly valued for cross-breeding. Initially most of the crosses were with similarly large sheep such as the Leicester and the Cotswold. By the turn of the century, however, greater efficiency of production was achieved when large Hampshire Down rams were crossed with small ewes of various other breeds, particularly the Exmoor. As the reputation of the breed spread, Hampshires were increasingly exported to the United States, Canada, and South America. In the United States the 'hardiness of constitution and adaptability to any soil or climate...' made the breed particularly popular for producing range grown lamb, including suckling lamb. It was believed that the market for imports was sufficient to absorb 'all the surplus of Hampshires of Britain for a half century to come'.⁴⁷

By about 1878 a major change in marketing techniques had occurred on the Hampshire Downs. Up until then, most sheep were sold out of the region to be fattened in their second year. However, with the regular and varied supply of feeds produced in the rotation, augmented by

⁴⁵ *Farmers Weekly*, 7 May 1898.

⁴⁶ *Hampshire Chronicle*, 19 July and 16 Aug 1902.

⁴⁷ W W Burch and R Carter, 'The Hampshire in England', *The American Sheep-Breeder and Wool Grower*, 29, no 7, 1909, pp 394 and 404.

oilseed cake and cheap feed-corn, it became increasingly common for commercial breeders to fatten lambs instead of selling them in store or half-fat condition. This resulted in the decline of the annual fairs with a corresponding increase in weekly and monthly fatstock sales.⁴⁸ The Hampshire lambed down early in the year and fattened more rapidly than any other sheep at the time. With intensive arable feeding, augmented by many with oilseed cake and corn, a lamb could be fat and ready for slaughter anytime from July or August onward. The value of the fat animal altered with age. In 1902, for example, Hampshire Down sheep at Basingstoke Repository sales were sold at around 50s per head when the animals were aged between six and eight months. At this age the sheep was still small, though past the suckling lamb stage. At nine months the value began to rise, reaching 53s at eleven to twelve months. Thereafter the price rose dramatically, peaking when the sheep was fourteen months at 63s. At fifteen months the animal was meeting competition from a number of other downs breeds which were beginning to come onto the market and the price fell back to between 54 and 59s depending on size and quality.⁴⁹ If the Hampshire had been intensively fed, he would quite probably be getting overly fat and coarse to qualify as top quality meat. Those destined to be sold as prime wether or young ewe would not have been fed as highly and would thus have less fat. On the national market the downs breeds were generally the most highly priced of the English sheep.⁵⁰ Because of the popularity of the Hampshire Down for cross breeding, it is probable that a number of these sheep were also produced on the Hampshire Downs. The high value of the meat from the downs breeds and the ability of the breed to supply high quality meat during

periods of scarcity gave those rearing Hampshires a particular marketing advantage. There was a glut of these sheep in prime condition coming onto the national market in the late autumn and winter during which time the breed monopolized the London markets.⁵¹ Because few other home producers were able to provide high quality fat teg during the winter and early spring, competition at national level was limited. Imports only competed with low quality mutton, and were priced well below the lowest quality mutton sold in the Hampshire region. Those farmers able to produce good quality – that is, not overly fat – meat were in a very competitive marketing position.

An even more lucrative marketing niche available to those with a suitable feeding environment was created by the extension of the time three-month old lamb could be made available. Suckling lamb was a luxury commodity generally associated with Christmas and Easter. These animals were slaughtered when they were ready for weaning at around three months. Traditionally suckling lamb was produced by Dorset Horn sheep which were able to lamb extremely early. The lambs were fed indoors and sold at Christmas. The Hampshire Down initially gained a reputation for producing the earliest outdoor fed lamb ready in time for Easter. These lambs attracted very high prices and, since the feed costs were negligible, they were relatively inexpensive to produce. However, it was essential that the ewe was never short of high quality, desirable feed. The system in Hampshire suited this rearing system. By the 1890s, with careful attention to breeding management, the long mating season of the breed was utilized to extend the luxury suckling-lamb season beyond the traditional brief period in spring. The lambs from Hampshire

⁴⁸ Market and fair reports, *Hampshire Chronicle*, 1875–1914.

⁴⁹ *Ibid.*, 1902–03.

⁵⁰ BPP, 1904, CV, *Agricultural Returns of Great Britain*, 1903.

⁵¹ *Report on the Marketing of Sheep, Mutton and Lamb in England and Wales*, 1931, pp 44–7.

dominated the London markets in March, April, and May, while the prices were high, and continued to be available until November and December.⁵² The popularity of suckling lamb is demonstrated by the rise in the price of frozen imports in the autumn when national supplies were falling in quality and availability. The Hampshire maintained the considerable price difference between itself and the imported frozen meat while the average English lamb was unable to do so. This facility was yet another example of the success Hampshire Down farmers had in meeting the demands of specialist, high-value markets for products which could not easily be reared elsewhere in the United Kingdom, nor satisfied by imports.

VI

In spite of its success in catering for high value, specialist markets, the exceptionally intensive, arable-based mixed farming regime practised on the Hampshire chalks does not appear to have been adopted elsewhere in Britain. The regime found on the Wiltshire Downs came closest. There the Hampshire Down Sheep and the Wiltshire eight-course rotation promoted the creation of capital intensive, highly-renowned pedigree breeding flocks of a size which generally far exceeded those found in neighbouring Hampshire. There was poorer quality of land on Salisbury Plain. In addition, the average farm size was greater and there was a smaller proportion of land in arable. Generally, the farms on the Wiltshire Downs required tenants with more capital. Possibly for these reasons, the potential to produce rapidly-fattening lambs associated with the regime in Hampshire does not appear to have been utilized. This gave the farmer in Wiltshire less flexibility and increased his susceptibil-

ity to the depression in agriculture.⁵³ In Dorset, the practice of producing in-house suckling lamb for the Christmas market continued. This procedure was distinct from the custom in Hampshire in that the Dorset Horn sheep gave birth earlier, but required to be housed and many of the lambs hand reared.⁵⁴ However, as in Hampshire, those farmers following this technique were able to meet a specialist demand. Another light-land area where farmers were able to specialize, but again not to the extent of the Hampshire farmers, was on the Lincolnshire Wolds. Here farmers met the falling prices of the depression by increasing the production of high-quality malting barley.⁵⁵ Other light-land farming systems do not appear to have targeted specialist, thus protected, markets. In Berkshire much of the downland remained in corn production with sheep playing a more traditional subsidiary role.⁵⁶ J T Coppock noted that in the Chilterns the distinction between the essentially pastoral claylands and the sheep-corn farming of the light lands greatly diminished during the years of depression. Those areas of the Chilterns with easily worked, reasonably fertile soils remained in arable, while the poorer lands reverted to pasture. This was particularly so where access to markets was at all restricted.⁵⁷ Generally farmers on the Hampshire chalklands appear to have been unusual in the degree to which they were willing and able to adapt their agricultural production to the changing conditions, both economic, and more specifically, marketing.

⁵² Market and fair reports, *Hampshire Chronicle*, 1902-03; BPP, 1904, CV.

⁵³ F M L Thompson, 'Farming in Wiltshire', in E Critall, ed, *Victoria County History: A History of Wiltshire*, IV, 1959, pp 92-114.

⁵⁴ E Thomas and C Pringle, 'A Dorset sheep and corn farm', *J. Ministry of Agriculture*, 1932, pp 814-15.

⁵⁵ J H Brown, 'Agriculture in Lincolnshire during the Great Depression', unpublished PhD thesis, Manchester University, 1978, pp 131-32.

⁵⁶ J Orr, *Agriculture in Berkshire*, 1918, pp 24-39.

⁵⁷ J T Coppock, 'Agricultural changes on the Chilterns 1875-1900', *AHR*, IX, 1961, pp 15-16.

VII

On a superficial level the course advocated by E L Jones to move out of mixed farming into pastoral has merit.⁵⁸ This would have created a less labour and capital intensive system. However, it would have also denied the farmers of the region the potential to cater for the high value marketing niches exploited under the mixed farming system. As long as these niches remained available and protected, the farmer willing to target his agriculture towards one of these was likely to withstand the period of instability. This potential is, unfortunately, invisible to the economic historian attempting to measure productivity from statistics alone. There appears to have been a sharp decline in Hampshire Downs agriculture during the depression. Using the simple device of multiplying the number of sheep produced in a system by the value of the slaughtered product – the method generally employed by anyone measuring output on a national scale – would not give an accurate figure for the system at any time between 1850 and 1914. In the 1850s and 1860s such a calculation would overestimate the value of output. The majority of sheep produced in the region were sold to be stored and fattened else-

where. The value of the meat from those sheep was greater than the value of the lean or half-fat animals. By the 1890s the device would seriously underestimate the output value. Some sheep would still have been sold in the traditional manner into other flocks for finishing. Many more would have been sold either as high value pedigree stock or as above average sized animals ready for slaughter outside the normal season. Jones examined the system up until 1873, that is, before the shift in marketing potential became evident. Unfortunately, the result of such investigations has caused misunderstanding about the chronology of the success of the agriculture in the region. The conventional wisdom – the successful implementation of highly-capitalized agriculture during the high farming period and the devastation during the depression – is unrepresentative of the conditions on the Hampshire Downs. Agriculture on the downs slowly evolved. The high farming period ended just as the system reached maturity. The depression, if indeed it should have been so titled, did not stop those willing to exploit the changes which had, and continued, to occur. These changes did not guarantee success or prosperity for the farmer, but they did provide him with the great advantage of a protected market.

⁵⁸ Jones, 'Agricultural prosperity', pp 118–19.