

## Devon Farming in the 19<sup>th</sup> century

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### Sources

In contrast to some other counties – Lincolnshire and the East Anglian counties in particular – agricultural historians have given little attention to Devon, especially in the nineteenth century. W.G.Hoskins, in his history of the county, devoted less than three pages to 19<sup>th</sup>-century agriculture, half of which discussed the condition of agricultural labourers (Hoskins, 1972: 98-101). Over many years Robin Stanes, who as a young man spent several years farming in the South Hams, taught and wrote about Devon's agricultural history, and his book *The Old Farm* (subsequently republished in an extensively illustrated edition) contains much on the nineteenth century agriculture, but it does not set out to explore the reasons for change over the century, or to distinguish between nineteenth-century and earlier or later methods. Neither is it referenced (Stanes, 1990: Stanes, 2005). Helen Harris, who also had an agricultural background, has a chapter on 'Agriculture and Kindred Pursuits' in her book on Dartmoor's industrial archaeology, but her purpose is to explain the origins of what can be seen on the moor rather than to write its history, and obviously Elisabeth Stanbrook's excellent account of the development of the farms in the middle of the moor, much of it concerned with the nineteenth century, does not extend to the county as a whole (Harris, 1972; Stanbrook, 1994). Neither does Orwin and Sellick's classic work on the reclamation of Exmoor (Orwin and Sellick, 1970). Fortunately, however, Sarah Wilmot built on her PhD thesis to produce further investigations of south-west farming in the nineteenth century, and it is upon her work that the following paper is largely based (Wilmot, 1988; Wilmot, 1999; Wilmot, 2000).

Dr Wilmot, as with Hoskins and Stanes, made extensive use of some of the primary printed sources for the county's farming. For the nineteenth century these begin with Vancouver's General View, with Tanner's Prize Essay for the Royal Agricultural Society of England in the middle of the century and Punchard's report, also in the Journal of the RASE, towards its end (Vancouver, 1808; Tanner, 1848; Punchard, 1890). Two of the major surveys of English agriculture in this period also contain chapters on Devon, and from the 1870s there are national statistics reported at a county level in gradually increasing detail (Caird, 1852; Haggard, 1906; Anon, 1876; Board of Agriculture, 1901). A Royal Commission was established to investigate national agricultural problems in the early 1880s, and Mr Little's report to it contains much useful data on Devon (Royal Commission on Agriculture, 1882). Finally, for a conference on the Wrey (or Wray) valley, one could not omit Cecil Torr's *Small Talk at Wreyland*, for even if it was originally published between 1918 and 1923 it contains many remarks on his locality in earlier years (Torr, 1970).

## The economic and political context

By 1800 subsistence farming, in which a farming family only produces its own food, and possibly clothing, had long disappeared from most of England. Most farmers produced more than their family could consume. While their survival might depend on their home production, their prosperity, and their ability to pay their rent, was therefore dependent upon the price that their output commanded in the market. This varied according to the fluctuating balances of local and national demand and supply. At a national level it is generally agreed that the bulk of the nineteenth century, after the end of the Napoleonic wars in 1815, can be divided into three periods as far as these balances are concerned. The first of these lasted until about 1850, the second until the mid-1870s, and the third until the end of Queen Victoria's reign.

Like most wars, those at the end of the 18<sup>th</sup> and the beginning of the 19<sup>th</sup> centuries had produced a disruption of trade, and an increase in military demand. Poor harvests between 1794 and 1800, and then again from 1808 to 1812, coupled with fodder shortages and livestock disease, reduced domestic supplies. Military recruitment and the need for labour in war industries raised wages, and so made it easier for people to buy food. At the same time the population was rising. There were more mouths to feed. Compared with the beginning of the war Professor Mingay calculated that demand for food increased by one fifth, whereas its supply, assisted by enclosure but hampered by weather and disease, only increased by about one sixth (Mingay, 1970: vi-ix). Prices inevitably rose (see table 1). With the end of the war in 1815 trade resumed, the demands of the army and navy decreased, and prices fell. As soon as 1816 the Board of Agriculture felt it necessary to commission an enquiry into the depressed state of agriculture (Mingay, 1970: xi).

Table 1: Clark's Farm Price Index 1810-1900 (1860-1869 = 100)

1810-15	135.8		1850-59	90.5
1816-19	122.75		1860-69	100.0
1820-29	98.4		1870-79	104.0
1830-39	93.5		1880-89	88.0
1840-49	91.5		1890-99	75.4

Source: Clark, 2004, Appendix table 4. This total index combines price indices for arable products, meat, dairy products, wool, pasture, and wood

Grain prices at this time were controlled to some degree by a series of import and export regulations known collectively as the Corn Laws. By the 1830s there were those in both political parties who took the view that population increases would soon outstrip the country's ability to feed itself, and by the early 1840s the Tory Prime Minister, Peel, faced with industrial depression, was arguing for free trade rather than protection. The 1845 budget reduced protection for many non-agricultural products. Then came the outbreak of potato blight in Ireland in 1846, and the realisation that simply suspending the Corn Laws until the crisis was over would vindicate the

argument that they produced scarcity. Duties on corn were reduced to nominal levels. Although strictly speaking the Corn Laws were not repealed until 1869, it was the change in 1846 that really represented their end (Brassley et al, 2010: 99-100).

The end of British agriculture too was widely predicted at the time. In the event, the predicted influx of foreign grain failed to materialise for nearly thirty years (see table 1). The Crimean war interrupted trade from Russia in the 1850s, and the civil war in the USA in the 1860s delayed the arrival of grain from the mid-western states (Tracy, 1982: 20). Thus the second agricultural period of the nineteenth century, from about 1850 to the 1870s, was one of improvement and prosperity over much of the country. R.E.Prothero (later Lord Ernle), in his classic *English Farming Past and Present*, originally written at the end of the 19<sup>th</sup> century, identified it as a period of high input-high output farming, and referred to a ‘golden age’ from 1853 to 1962 (Prothero, 1917: 370). Cereal prices peaked in 1874; thereafter, as the introduction of steam ships brought freight costs down, grain shipments from the Americas, and later Australia, increased, and corn prices fell (see table 1). This third period, from the 1870s to the end of the century, was therefore widely perceived, especially by those farmers who relied on selling cereals, and the landowners who relied on their rents, as a period of depression and disaster, and several reports and Royal Commissions investigated it, without producing much reaction in agricultural policy terms. Whether it was such a disaster in the livestock areas of the west of England is, however, more dubious (Perren, 1995: 17-30).

The discussion in this paper now turns to the history of agriculture specifically in 19<sup>th</sup>-century Devon, which was not always perfectly understood by contemporary writers, and did not always respond to changing circumstances as the rest of the country. It examines first the inputs of land, labour, capital and technology into farming, and then considers the local changes in demand and outputs, before attempting to draw some overall conclusions.

### **Devon farming in the 19<sup>th</sup> century – inputs**

#### *Land*

‘The most modern calculation extant .... assigns an area of 1,595,309 statute acres ... for the surface territory of the county’ wrote Vancouver in 1808. The area of Devon according to the Agricultural Returns in 1900 was slightly greater, at 1.67 million acres (Vancouver, 1808: 1; Board of Agriculture, 1901: 34). Whatever the precise figure (and it varied over time according to the allocation of detached parts of Devon to Dorset and vice versa) the point was that Devon was and is the third largest county in the country and consequently has a variety of soils and agricultural regions. Vancouver identified seven different ‘districts’, apart from the Forest of Dartmoor. District V included the east side of Dartmoor, from Buckfastleigh in the south to Throwleigh in the north, together with the Teign valley down to Newton Abbot, and was described as being based on ‘granite gravels’. He found that ‘the country below

the eastern margin of the Moor', including the parish of Moretonhampstead, was 'excessively broken into abrupt and huge irregularities, terminating in craggy and frightful precipices, the more level surface encumbered with granite rocks and detached masses of moorstone', and mentioned the 'wild and sterile prospect of this country from several points above Manaton'. The soil in the parishes of Lustleigh and Bovey Tracey he described as 'a light brown mould on a grey gravelly loam, veined with sand, granite gravel, and blue and white yellow clay', which 'by judicious cultivation produced excellent turnips, barley, clover, wheat, oats (and where too strong for permanent pasture), beans and pease' (Vancouver, 1808: 42). By 1800 the arable land of the county had all been enclosed, leaving only some relatively small areas of lowland heath, moorland, and parts of the Blackdown Hills to be enclosed by Act of Parliament (Wilmot, 1988: 107; Prince, 1989: 56; John, 1989: 1114). Several farms were established on Dartmoor in the early 19<sup>th</sup> century by agreement with the Duchy of Cornwall, and remained occupied until late in the century or even later (Harris, 1972: 153-4; Stanbrook, 1994). On a larger scale, the enclosure and reclamation activities of the Knight family on Exmoor also began in the early 19<sup>th</sup> century (Orwin and Sellick, 1970). All told, between 1800 and 1869 there were 70 enclosure awards in Devon, mostly of upland commons and coastal marshes. They covered 51,000 acres, of which 20,000 were on Exmoor, but the total only represented, as table 2 (below) shows, about 3 per cent of the county (Wilmot, 1988: 109).

Mr Little, reporting to the Royal Commission on Agriculture in 1882, followed the advice of Sir Thomas Dyke Acland and divided the county into five regions. As with Vancouver, these were largely based on geology and soil districts. North of the Barnstaple to Taunton railway (roughly now the A361 through Bampton and South Molton) was a stock-rearing district in which most farmers depended on producing cattle, wool and oats. The second was the red soils on the New Red Sandstone of the vales of Exeter and Honiton, suitable for mixed farming. The Carboniferous rocks underlay the third region, south of Exmoor and north and west of Dartmoor, accounting for 40 per cent of the county, much of it poor farming land where the 'prevailing soil is a cold yellow clay which will not make good grass', good drainage was essential and 'much of it will not pay for the expenditure'. He was more enthusiastic about his fourth district, around Tavistock, not because the soil was that much better but because over many years the farms had been improved by the efforts of successive Dukes of Bedford, the major landowner, for whom 'money has never been wanting, and it has been freely spent on improvement of every description'. Finally there was the 'warm and sunny country' south of Dartmoor and between Plymouth and Torquay, the South Hams, with more than 70 per cent of the land in arable, producing corn crops, fattening cattle and sheep, with some dairying. These five districts together accounted for 83 per cent of the land of the county. The remainder, meaning Dartmoor, 'the wastes of Woodbury Hill', and the Blackdown Hills, he dismissed from agricultural notice (Royal Commission on Agriculture, 1882: 14-17). Where the Wrey valley fitted into his scheme remains unclear.

The Dukes of Bedford were among the largest landowners in the county, but not part of the largest group. Dr Wilmot found that Devon had a smaller proportion of aristocratic or greater gentry estates than many other counties, and Vancouver had, much earlier, come to the same conclusion: ‘the landed property in this country will appear to be very much divided; a large proportion of it being in the hands of a respectable yeomanry, and other estates belonging to the sees of Exeter, York and Salisbury, the Dean and Chapter of Windsor, the universities, and the Duchy of Cornwall, forming no inconsiderable part of the whole county’ (Wilmot, 1988: 336; Vancouver, 1808: 80). The Duchy of Cornwall was one of the five great estates in the county according to the 1873 Return of the Owners of Land, but most of its 48,000 acres were on Dartmoor, and worth very little. The biggest estate was that of the Hon. Mark Rolle, with over 55,000 acres in 1873, followed by the Duke of Bedford, the Earl of Devon, and Earl Fortescue, all of whom had more than 20,000 acres. The overall pattern of landholding in 1873 is summarised in table 2.

Table 2: the ownership of land in Devon in 1873

Size of estate (acres)	Number of owners	Total acreage held
Over 10,000	16	309,000
5,000 – 10,000	28	177,000
1,000 – 5,000	154	303,000
500 – 1,000	209	142,000
100 – 500	1,890	394,000
1 – 100	7,865	189,000
TOTAL	10,162	1,514,000

Source: Hoskins, 1972: 88

These figures show that about 20 per cent of the county was held in estates of more than 10,000 acres, which was the lower limit set by Michael Thompson for aristocratic estates in the nineteenth century. In Devon, the estates of Lords Poltimore and Clinton, the Earl of Portsmouth, and Sir Thomas Dyke Acland all exceeded this figure (Hoskins, 1972: 88). Over England as a whole Thompson found that the average was for 24 per cent of a county to be held in aristocratic estates, but for some counties the figure was much higher: the Duke of Rutland owned more than half of that county, and aristocrats owned half of the much bigger county of Northumberland (Thompson, 1963: 32). Holdings of between 1,000 and 10,000 acres were termed gentry estates by Thompson, and included about 30 per cent of English land. As table 2 shows, Devon roughly conformed to the national average, and many old and prominent Devon landholding families such as the Bullers, Champernownes, Fulfords and Fursdons fell into this group (Thompson, 1963: 113; Hoskins, 1972: 88). At the opposite extreme, although small landowners, holding up to 100 acres, were in the great majority, they only held about 12.5 per cent of the land in 1873. In the Exe Vale in 1840 those with up to 50 acres only accounted for 7 per cent of the cultivated acres, leading Dr Wilmot to conclude that the small yeoman had already disappeared by that time (Wilmot, 1988: 539).

From an agricultural viewpoint the size of farms and their system of tenure is as important, if not more important, than the size of estates. Once a landholding exceeded 500 acres it was most unlikely to be farmed entirely by its owner, and many smaller estates than that would have included land leased to tenants. According to the Agricultural Returns in 1900 only 12 per cent of the land under crops and grass was owner-occupied, the remainder being tenanted (Board of Agriculture, 1901: 38). Travelling round the county at the same time the writer Rider Haggard received the impression that small farms were common, ‘indeed, really large holdings are rare, while many do not comprise more than from twenty to fifty acres’ (Haggard, 1906: 176). Quantifying farm sizes was more difficult. Vancouver (1808: 100) found it ‘extremely difficult to speak with any degree of certainty on a subject in which there is so wide a range for the striking of an average’, and while the 1851 census provided data on the number of holdings in different size groups, it did not specify the area in each group, whereas Mr Little’s data for thirty years later recorded the area in each size group but not the number of holdings. Putting these two sources together, as in table 3, is therefore a dangerous exercise, especially as Dr Wilmot argues that there was a continuous process of farms being consolidated into larger tenancies through the nineteenth century (Wilmot, 1988: 515). Nevertheless, it is worth doing, because it supports the impressions of both Rider Haggard and Caird, who in his 1851 survey found that ‘the great majority [of farms] run from 50 or 60 to 200 or 250 acres’ (Caird, 1852: 51). The dominance of the 50 – 300 acre size group, both in number of holdings and proportion of the cultivated area, clearly emerges. It should also be noted that both measures show higher figures for this size group than the national average.

Table 3: Farm size distribution in 19<sup>th</sup>-century England

	% of holdings, 1851		% of farmed area, 1875	
	<i>Devon</i>	<i>England</i>	<i>Devon</i>	<i>England</i>
Under 50 acres	30	44	14	15
50 – 300 acres	64	48	74	56
Over 300 acres	6	8	12	29

Source: Wilmot, 1999: 295; Royal Commission on Agriculture, 1882: 18

Early- and mid-nineteenth-century writers were unanimous in the view that Devon agriculture was ‘doomed not to participate in improvement’ as a result not only of the size of farms but also the form of tenure by which they were held, which was the lease for lives. This could be for as long as 99 years, or three lives, and involved the tenant paying a large entry fine, often using borrowed money to be repaid at exorbitant interest, with a nominal annual rent. In other parts of the country it was a system that was disappearing by the end of the seventeenth century. In Devon, if Vancouver is to be believed, it was still a common system of land tenure at the beginning of the nineteenth century. Vancouver blamed its persistence on estate management being left to ‘attornies and other unqualified persons’ and claimed that it

led to a shortage of working capital for the farmers, so that they had insufficient funds for the proper cultivation, stocking and improvement of their farms. 'Fortunately for the future improvement and prosperity of the country,' he observed, 'this species of tenure is become much lessened in within the last twenty years' (Vancouver, 1808: 80-82). Nevertheless, in the middle of the nineteenth century Caird could point out that 'the evil effects of the system may be seen in the wretched management' of the estates on which it still persisted, although by his time life leases were being replaced by leases of from six to ten years (Caird, 1852: 50). With the life lease system the landlord had little incentive to improve and the tenant lacked the capital; given leases for years, the landlord had an incentive to improve in order to achieve higher rents, and the tenant had an incentive to improve as long as compensation for unexhausted improvements was available. Mid-nineteenth century writers on agriculture consequently paid considerable attention to these issues (e.g. Tanner, 1848: 486-8; Caird, 1852: 50-52; Wilmot, 1988: 69-70, 516-8). Despite this change in the system of tenure, Rider Haggard, at the beginning of the following century, noted how many tenants had occupied their farms for at least three or four generations, and Hoskins noted owner-occupiers, such as the Reddaways of Sampford Courtenay and the Seccombes of Germansweek, who had held land in the thirteenth century that they were still farming in 1873 (Haggard, 1906: 176; Hoskins, 1972: 89).

As well as the size of farms, the size of fields also attracted attention in the second half of the nineteenth century. Caird mentioned 'a farm of 160 acres, from which seven miles of hedgerows were removed, and, on the ground being measured, it was found that thirteen acres of land were gained'. He admitted that the shade and shelter from hedgerow trees was of some value in permanent pastures, but on arable land there could 'hardly be anything more injurious to the tenant than this multiplication of fields and hedgerow timber' (Caird, 1852: 52). Several other writers quoted the survey of 37,000 acres of tillage land within 15 miles of Exeter made by Mr Grant of Exeter in the early 1840s. He found that they contained 1651 miles of hedges, occupying 2642 acres, or just over 7 per cent of the total area, enclosing fields averaging about 4.5 acres in size. Mr Tanner agreed with Caird on the utility of small fields and hedges in livestock districts and the problems they caused in arable land, adding that before coal was so cheaply available (presumably as a result of railway transport) hedgerow timber was a useful source of fuel (Tanner, 1848: 484; Royal Commission on Agriculture, 1882: 17; Punchard, 1890: 531).

### *Labour*

Vancouver reported, presumably from the 1801 census, a population of 343,076 in Devon, of whom 96,000 were employed in agriculture, 62,000 in manufacturing, and the rest were simply listed as 'all other persons'. Whether these were actual or potential members of the labour force is unclear, but the total appears to have included children. He also gave detailed figures by parish, which are worth quoting for the Wrey Valley parishes, although they perhaps raise as many questions as they answer (see Table 4)

Table 4: East Dartmoor parish populations ?1801?

	Population, including children		Occupations			Total
	Male	Female	Agriculture	Manufacturing	Other	
Bovey Tracey	667	764	326	78	1027	1431
Lustleigh	130	116	236	3	2	246
Manaton	181	167	109	25	214	348
Moreton-hampstead	805	963	289	599	880	1763
North Bovey	261	253	160	34	325	519

Source: Vancouver, 1808: 415

Apart from the obvious conclusion that the occupational structure of these parishes, as with Devon parishes in general, was very variable, in that some were considerably more specialised in agriculture than others, the reliability of these figures appears uncertain. The data for Lustleigh, for example, suggests either that there were no children in the parish, or that they were pressed into employment from the cradle onwards, both of which seem unlikely. More significant are the findings of Drs Finch and Wilmot, that early-19<sup>th</sup>-century Devon was de-industrialising in the face of factory competition from the Midlands and North for the woollen, lace and paper industries. The result was out-migration from the 1820s to the 1840s, with the result that the remaining agricultural population formed a greater proportion of the total labour force: 29 per cent of those employed in Devon were in agriculture in 1841, compared with 22 per cent in the country as a whole. By 1901 the Devon agricultural labour force was only 15 per cent of the total, but that was nearly twice the national average. In terms of absolute numbers, it meant that the number of male agricultural labourers fell more or less steadily throughout the second half of the century. There were nearly 49,000 of them in 1851, but only 25,000 in 1901. Most holdings (76 per cent of them) employed fewer than three men, and only 4 per cent of farms employed ten men or more. The number of farmers also decreased in the same period, but only by about 20 per cent, mostly as a result of the amalgamation of small farms. Assessing the extent to which female labour was used on farms and the extent to which it changed is difficult, partly because occupational definitions changed from census to census and partly because women were more likely to be employed on a part-time or seasonal basis. In the 1840s women were said to work almost as regularly in the winter in the summer in Devon, which perhaps reflects the importance of dairy farming, and by the late 1860s it was said that their employment in field labour was gradually dying out (Wilmot, 1988: 96-7, 129-32).

Devon was a low wage area for agricultural workers in the mid-19<sup>th</sup> century, although Cecil Torr reported his grandfather's conversation with a parson recently arrived in Lustleigh from a living in Norfolk, where, he claimed, conditions were even worse. At least in Devon they all managed to salt a pig. Part of the problem, in Torr's view, was that mechanised factory-based spinning had ruined the market for home



spinning, so that previously a wife's earnings augmented her husband's, whereas by mid-century 'whole families had now become dependent on their earnings on the land' (Torr, 1970: i.44; iii.83). In the 1840s Devon farm workers were getting only 75 per cent of the national average agricultural wage, which itself was not excessive (Wilmot, 1988: 124). This provoked one of Hoskins's more passionate pages in his history of Devon, as he described their wretched wages and housing conditions in the 1840s, the story of Canon Girdlestone suggesting to the farmers that the 1866 cattle plague might be the judgement of God on their treatment of their labourers, and the subsequent organisation of migration schemes and a farm workers' trade union (Hoskins, 1972: 99-101). The other option was work on the railways, as navvies in the 1840s and '50s, and later as railway employees. After the opening of the Newton Abbot to Moretonhampstead line in 1866, said Torr, 'our line had great attractions for young men and boys, and many of them left their work on the land'. He quoted the example of one family in which one brother became a station master, another a ganger, and a third 'were a-runned over by a train; and so, as us may say, they was all connected with the railway' (Torr, 1970: i.45, i.64, iii.13). In 1882 Mr Little was still finding that 'the cottage accommodation cannot be said to be sufficient or good', although he praised the new cottages erected on the Duke of Bedford's estate, but wages had increased. By 1900 they were almost up to the national average, and Rider Haggard was reporting farm labour shortages, although as a farmer himself he appears to have seen the labour question very much from an employer's standpoint. Intelligent boys and girls, he suggested, left the land, and the remainder took little pride in their work. It was the result of education, which turned 'working class folks into upstarts' (Royal Commission on Agriculture, 1882: 20; Wilmot, 1988: 124; Haggard, 1906: 178, 208, 211).

### *Capital*

As we saw earlier, Vancouver associated problems of capital availability for both landlords and tenants with the persistence of life leases, which resulted in landlords having little incentive to invest and tenants lacking the means to do so (Vancouver, 1808: 80-83). Forty years later Caird was making the same points, although he admitted that life leases were disappearing, and emphasised the resulting variability in the quality of farm buildings (Caird, 1852: 50-51). The change from life leases to tenancies for terms of years did not always solve the problem as far as tenants were concerned. If their leases were short, and there was no provision for compensating them for any improvements they had made, they had little incentive to invest their own capital, and the question of compensation for unexhausted improvements was an important one until the later part of the century, when a series of Agricultural Holdings Acts from 1875 onwards regulated the practice (Royal Commission on Agriculture, 1882: 19; Adkin, 1928: 393-4). Tenants were often dependent upon short-term financing, such as merchants' credit. Since the majority of landowners were local gentry there were no widespread urban or industrial sources of capital for agriculture; equally, there was little opportunity to divert money from farm rents to non-agricultural investments. The major mining and industrial enterprises in west

Devon were owned by the Duke of Bedford, based outside the county. Consequently Dr Wilmot, who investigated this question in detail, found that agricultural investment ‘was essentially limited by its own internal dynamic’: in the stagnant internal economy of the region in the early nineteenth century (see table 1 above) there was neither the incentive nor the ability to invest, whereas rising prices, rentals and land values in the second half of the century increased both. In addition, new institutions such as land improvement companies made increasing funds available (Wilmot, 1988: 198, 338-9; Phillips, 1989).

### *Technology*

As with capital investment, the evidence suggests that the technology employed in agriculture changed more in the second half of the century than the first, but we must be careful here, because much of the evidence comes from agricultural writers who seemed to assume that high-input / high-output farming was best, and that the Norfolk 4-course rotation was the ideal, without recognising that the soils and climate of Devon were not always suited to mixed arable farming. Nevertheless, some of their criticisms of early nineteenth-century Devon farming seem valid. Vancouver found that the pitch-forks used in the county ‘from the length and form of their tines or prongs, seem scarcely sufficient for holding or lifting a bulk beyond that of a rook’s nest’, and field drainage was ‘so little known, or at least attended to, that until the necessity of its importance can be impressed upon the minds of the inhabitants, it will be vain to address or recommend other measures for their adoption’. Indeed, at the beginning of his chapter on improvements he suggests that if he is to write about those already made ‘it is much feared that this chapter will be very concise’, whereas writing about those that might be desirable could hardly be embraced in a single chapter. On the other hand, he was enthusiastic about the qualities of the North Devon cattle, ‘the most perfect of their species .... for grazing or for draught’. Rather more grudgingly ‘candour must allow’ that the performance of the ‘common Devonshire plough, made by a hedgerow carpenter ..... is far superior to what might be expected from the very rude appearance it makes’ (Vancouver, 1808: 115, 128, 309, 325).

Mr Tanner, writing his Prize Essay in 1848 at his Addington Park Farm near Croydon, was more decided: ‘It cannot be denied that the farming of Devon is at the present time inferior to that of most of the counties of England’. This he attributed to the remoteness of the county, which prevented ‘any extensive intercourse with the better farmed districts of England’, and the fact that many farmers ‘reside on their own estates, and being in easy circumstances *have little spur for improvement* [his italics]’ (Tanner, 1848: 494-5). He felt that Devon farmers gave insufficient attention to ‘the proper management’ of farmyard manure, and reserved particular venom for the traditional Devon rotation of wheat, barley, and then oats, after which the land was laid down to grass until it was ‘supposed to have regained its exhausted strength’. It was ‘a rotation which can scarcely show one good qualification’ and could not ‘be too severely condemned’. He did admit, however, that in some parts of the county, especially the red soil districts, a much better rotation of turnips followed by barley or

oats, then one or two years of temporary grass before the wheat crop, was being followed. He also recognized that the use of the seed drill was often hindered by hilly land, so that it was rarely used except for turnip and swede crops, and cereals were sown broadcast. He found the 'general character' of implements much improved in recent years, described the one-way plough in some detail, and also noticed recent 'extraordinary advances' in drainage: 'Want of capital is the principal impediment to its progress'. Horse driven threshing machines were found on larger farms, but the majority of farm buildings he found to be 'very irregularly and badly constructed' (Tanner, 1848: 461-71, 488). However, writing only a few years later, Caird found that the 'cumbersome and unskilful practices' in Devon farming, so deprecated by eastern counties arable farmers, although 'still too frequently to be met with', had lately given way to 'great progress'. The bigger farmers in particular had engaged in drainage, the irrigation of water meadows, and the use of artificial manures and fodder crops. Like Vancouver, he praised the North Devon cattle, which were still occasionally used to pull the plough, and the management of dairy cattle. Fattening cattle were fed on turnips and oilcake, and sheep too were sometimes given cake when feeding on turnips (Caird, 1852: 48-9, 53-4).

In other words, by the middle of the nineteenth century it is possible to see the influence of what Michael Thompson called 'the second agricultural revolution', in which farmers increasingly turned to inputs and technologies that were produced outside the farm, inputs such as purchased feedingstuffs and fertilisers, and technologies such as tile drains, threshing machines, and, later, reapers (Thompson, 1968). In 1843 Cecil Torr's grandfather reported that he had 'tried 1cwt of nitrate of soda on an acre of grass, and it is astonishing the effect it has had'. A few years later he noted the effect of changing rotations on the way in which land was prepared for the wheat crop, 'so different from what it used to be, from so many turnips being tilled (Torr, 1970: i.42, ii.12). Writing forty years after Mr Tanner, Mr Punchard noted a 'spirit of enterprise and emulation' which had produced increased use of purchased feeds and fertilisers and the use of improved machinery. It had been brought about by the educational effects of agricultural shows from the peripatetic Royal Show to more local events, by lower feedingstuff prices, by the emergence of land agency into a trained profession, by the establishment of Improvement Companies making capital more easily available to landlords, and by the demise of the three-life lease (Punchard, 1890: 515-16). The common Devonshire plough (two versions were illustrated on p.529) was no longer made by a hedge carpenter, as in Vancouver's day, but purchased from one of the machinery manufacturers or dealers whose numbers doubled between 1856 and 1902. Farm carts and wagons were more common, and pack horses, which were common in the 1830s, had disappeared by the 1880s. On the other hand sledges 'may still be seen at work on very steep fields' when Torr was writing in the early twentieth century (Torr, 1970: ii.1). Purchased fertilisers too, such as guano, superphosphate and sodium nitrate, were in more common use (Wilmot, 1988: 111, 185-7; Wilmot, 1999: 305). On a farm near Exeter at the end of the century Rider Haggard noted that fattening bullocks had a

supplementary feed of barley, and also imported maize meal, as well as mangolds, the area of which increased throughout the county in the second half of the century (Haggard, 1906: 179) By the late 1870s horse-drawn reaping machines were responsible for cutting two-thirds of the national harvest, and from the 1860s horse-drawn mowers for the hay crop were available (Dewey, 2008: 70-71). The extent to which either of these machines could be seen on Devon farms by that time is unclear. The evidence of contemporary photographs suggests that they were there by the 1880s or '90s; equally, there are twentieth-century photographs of both corn and grass being cut by men with scythes (Stanes, 2005: 106-7, 115-16). It would also be a mistake to think that the effect of the new methods was unalloyed progress. Punchard noted that the increased use of sodium nitrate on temporary grass leys had the effect of eliminating the clover, and the decline in the use of lime as the use of other fertilisers increased made turnips and swedes more susceptible to finger-and-toe disease. On the farm of a Mr Tucker, near Totnes, Haggard saw that it was 'rampant among the root crops' (Punchard, 1890: 518; Haggard, 1906: 181).

### **Local changes in demand**

The demand for the products of Devon farms varied with population and income changes, both local and national, transport costs, and changes in the national food market. As we have seen already, the Napoleonic wars increased the demand for food from the military, and prices rose in consequence. Devon farmers in a position to sell their cereals and animals to the provisioners of the Navy at Plymouth in particular felt the benefit of this wartime demand. Equally, they felt the effects when those markets were lost at the end of the war in 1815, and in addition butter, eggs and poultry could once again be imported from Normandy (Hoskins, 1972: 98). Then longer-term trends began to have a greater influence. Principal among these was population. The number of people in England nearly quadrupled between 1801 and 1901, but the number of people in the south-west only doubled (Lawton and Pooley, 1992: 33). The population of Devon grew from 383,000 in 1811 to 604,000 in 1881, which meant that instead of being the fourth most populous county it declined to ninth. Moreover, the changes were not evenly distributed. As rural industries declined, the country parishes lost population to the towns, and to other parts of the country (Alexander and Shaw, 1999: 120-121). The very local demand for cereals, meat and dairy products was therefore restricted, and limited further by the low incomes of farm workers. Finally, despite the formation of eleven turnpike trusts between the first decade of the nineteenth century and the 1840s, road transport remained difficult, especially in winter. The first main line railway did not reach Exeter until 1844, and Plymouth five years later (Kanefsky, 1999: 360, 362). All these factors, as Dr Wilmot argues, depressed the agricultural sector in the first half of the nineteenth century (Wilmot, 2000, 415).

In the second half of the century the population growth remained slow, compared with the country as a whole, but other factors changed. Agricultural wages gradually rose (see above), and for such low-paid workers much of any extra income would have been spent on food. Most importantly, the railways formed a means of

communication between Devon farmers and the expanding markets for meat, milk and dairy products, the south-western specialities, in the rest of the country. Livestock freight on the Great Western Railway rose from 78,370 head in 1856 to 250,000 head in 1913 (Wilmot, 1988: 137). Devon was still too far away from London and the Midlands to participate in the expansion of the railway liquid milk trade from the 1860s onwards, but close enough to supply perishable dairy products. The Torridge Vale butter factory was established in 1874, selling not only butter but also cream, eggs and poultry to the London, Midland and Northern markets, and there were other creameries in east Devon (the Culm Valley Dairy Company from 1884) and Plymouth (Wilmot, 1988: 111). When farms in the arable areas of the south and east of the country began to suffer from cheap imports of North American grain in the later 1870s and farm prices in general fell (see table 1), Devon meat and dairy producers found that their principal products were less affected than those of cereal producers. Farm rents often reflected these variations. On the Acland estate at Killerton rent arrears were high, at between 10 and 25 per cent of the total, between 1816 and 1850, much lower (from 2.6 to 10 per cent) from 1850 to 1885, and then a little higher, up to 15 per cent of the total, in the remaining years of the century (Wilmot, 1988: 114). Late-nineteenth-century commentators were united in the view that Devon was hardly affected by depression (Royal Commission on Agriculture, 1882: 15), or at least not so much affected as the rest of the country (Punchard, 1890: 536; Haggard, 1906: 199).

### **The output of Devon agriculture in the nineteenth century**

Given the increases in demand and investment, and the technical changes in the second half of the nineteenth century that we have described so far, we should expect that Devon's agricultural output was depressed in the first half of the century and expanded thereafter. We should also expect to find geographical variations in types of farming. The basic story for the county as a whole appears to be one of stagnant output up to about the 1840s, a subsequent increase in arable land to the mid-1870s, and finally a decrease in arable offset by rising beef and dairy production in the face of increased grain imports in the last quarter of the century. However, finding the data to demonstrate these changes in detail and beyond argument, and to reflect regional variations, is not always easy.

While there is a reasonably reliable statistical source in the shape of the agricultural returns from about 1870 onwards, finding comparable data for earlier years is more difficult. The accounts of Devon farming by Caird and Tanner are remarkably free of statistical material, as is Vancouver's earlier *General View*. While the 1801 Crop Returns provide data for many counties, they only cover about 6 per cent of Devon, and so are useless for all practical purposes. The first figures of any use are those from the tithe surveys, and even they contain no information on animal numbers (Kain, 1986). Fortunately the Agricultural Returns, which were based on the annual agricultural census which began in the late 1860s and were producing

reasonably reliable figures by the mid-1870s, do contain detailed livestock data (Afton and Turner, 2000: 1759-1761).

Table 5: crop areas and livestock numbers in Devon

Acres	1836	1875	1900
Arable	373,120	448,863	356,516
Grass (Permanent and Temporary)	782,083	607,014	853,518
Total agricultural land	1,155,203	1,083,614	1,210,034
Wheat	127,678	123,920	57,376
Barley	88,951	78,727	44,235
Oats	46,084	86,477	122,025
Total cereals	262,713	289,124	223,636
Turnips, swedes and mangolds		113,672	87,980
Other green crops	110,407 (calculated by subtracting the cereal acreage from the arable total)	43,266	34,789
Other crops and fallow		30,538	10,111
Animal numbers			
Horses		50,700	54,526
Cattle		218,153	279,728
Of which dairy cattle		74,686	97,872
Sheep		976,158	846,324
Pigs		84,898	95,944

Sources: Kain, 1986: 213; Anon., 1876: 22-3; Board of Agriculture, 1901: 6

The picture that emerges from the data in table 5 supports the one drawn from other sources. The tithe survey data shows the importance of the grass crop in a county that relied on alternate husbandry, in which arable land was laid to grass, and grass was ploughed up for the corn crops. Contemporary commentators also noticed local specialities such as clotted cream and cider. ‘Fresh butter and clouted cream are the products of a Devonshire dairy’, and the county was ‘justly celebrated for dairy management’, according to Caird (1852: 54). Tanner gave details of cream-making methods, declaring that the use of a water bath was ‘not only the safest but the quickest mode of procedure’, although many farms still raised their cream in from of the fire. He also covered the management of orchards and cider-making methods in some detail, and described how wheat straw was made into reed for thatching (Tanner, 1848: 480, 471-6, 465). However, Dr Wilmot cautions against over-emphasising the distinctiveness of Devon in the nineteenth century, which, she argues, has been ‘overplayed in both contemporary and modern accounts’ (Wilmot, 1988: 519-20). It is clear from the tithe surveys, she argues, that the Exe Vale and the South Hams were mixed farming areas by 1840, not unlike other parts of the country, whereas the pastoral areas were found in east and north Devon (and also, presumably,

around Dartmoor). When the data are put together as county figures they hide these differences; mapped out, using parish-based tithe data, they become more apparent. On the red soil areas of the Exe Vale the proportion of arable could be as high as 60 per cent, whereas on the poorer soils of the Culm Measures and in parishes bordering the moors it was below 20 per cent (Wilmot, 1999: 299-300). In North Bovey, for example, both arable and pasture covered less than 20 per cent of the parish area, but common land, presumably rough grazing, accounted for more than 40 per cent. Oats accounted for more than a third of the arable area (Kain, 1986: 213).

As table 5 indicates, by 1875 the arable area had grown by about 20 per cent compared with the tithe data of forty years earlier. But the wheat and barley acreages had decreased, so the growth was in the crops that were used to feed animals: oats, roots (turnips, swedes and mangolds), and green crops such as cabbage (flat-poll cabbages were used as fodder and could grow to large sizes), rape and vetches. Caird noted the influence of 'educated agriculturalists holding large farms' upon their neighbours in north Devon, with the result that in one parish 'there are now 800 acres of green crop raised, where, only eight years ago, there were not more than 80' (Caird, 1852: 49). The three cereal crops in succession of the old rotations gave way to alternations of cereals, roots and grass leys. There were also areas of specialist production, such as the fruit and vegetables of the Tamar valley, and the district around the Taw estuary in north Devon which shipped potatoes across to south Wales (Wilmot, 2000: 415, 419). The Moretonhampstead district was also well known for its potato production, which led to 'severe losses' among farmers when potato blight struck the crop in the late 1840s (Tanner, 1848: 463). Cecil Torr's grandfather at Lustleigh wrote in August 1845 of

'all those beautiful green fields of potatoes around me, that were so pleasing to the sight in my little walks, have lost all their green and turned a regular brown. It makes things so dreary, and brings to mind the misery it will create, particularly with the little renting farmers' (Torr, 1970: ii.13).

Although the arable area of Devon peaked in 1875 the county remained a major livestock area. According to data for the year 1867 it was then ranked ninth for cattle and fifteenth for sheep among English counties, in terms of numbers of livestock per hundred acres of agricultural land (John, 1989: 1065-6). By the end of the century it could lay claim to two distinct breeds of cattle and at least four breeds of sheep: the Devon Closewool, the Devon Longwool, the South Devon and the Dartmoor, which might be divided into the Greyfaced and the Whitefaced and so arguably produce a fifth breed. At the beginning of the nineteenth century Vancouver was enthusiastic about the qualities of the North Devon cattle, of which the Quartly family of Molland were the most well-known breeders, by the middle of the century Caird was extolling their 'present high state of perfection', and at its end Punchard was admiring 'their symmetry, their compactness of form, evenness of flesh, lightness of offal and other attributes which constitute them so essentially the butcher's beast'

(Vancouver, 1808: 336-48; Caird, 1852: 49; Punchard, 1890: 526). The South Devon or South Hams breed was also recognized as a distinct breed by the beginning of the century, resulting from a cross of the native Devon cattle with Guernseys, and noted for milk of high fat content (Hall and Clutton-Brock, 1989: 70). By far the most popular cattle breed in the nineteenth century was the Shorthorn – it accounted for about two thirds of all the cattle in the country according to the Board of Agriculture’s 1908 survey – but it failed to make much impression in Devon. By 1908 there were over 400,000 North Devons and nearly 100,000 South Devons in the country as a whole, although of course, as the figures in table 5 confirm, not all of these were in the county itself (Punchard, 1890: 528; Brassley, 2000: 564-5).

The South Devon and Devon Longwool sheep breeds both developed during the nineteenth century as a result of crossing the existing local breeds with the influential Leicester breed, and the Closewool was a cross between the Longwool and the Exmoor Horn breed, although, interestingly, Punchard does not mention it in his brief discussion of sheep breeds. Dartmoor sheep were bred from the existing animals on the moor, although there is some evidence that improved rams such as the Leicester, Southdown and Cheviot were used to improve them from time to time (Punchard, 1890: 528; Hall and Clutton-Brock, 1989: 134, 144, 146). As with the cattle, the numbers returned in the 1908 survey – at least 1.3 million sheep attributed to these Devon-based breeds – far exceeded the number of sheep in the county at the time (see table 5), so clearly they had spread to neighbouring counties, if not further afield (Brassley, 2000: 564-5).

Punchard was silent on the topic of pigs and poultry, and Tanner makes no mention of specific breeds of either, but he did point out that pigs were ‘an important source of profit in a well-managed dairy’ as consumers of the skimmed milk left over from butter making. Poultry – turkeys, geese, ducks and fowls – were all sent to London from north Devon and ‘the dairy district (presumably east Devon), a trade much facilitated, like the pig trade, by the development of the railway (Tanner, 1848: 482-3).

What Devon farmers of the 1870s actually did with these animals, and their crops, in the ordinary course of their farming, often seems to have attracted the attention of contemporary agricultural writers less than the unusual and the problematic. However, it is clear, as much of the foregoing discussion suggests, that over much of north and west Devon, and around Dartmoor, they concentrated their attention and their cropping on producing the grass and fodder crops needed to feed store and fat cattle and sheep. In east Devon they did more or less the same but with the emphasis on dairy cattle. In the Exe Vale and the South Hams they operated mixed farming systems not unlike those to be found over much of southern England, producing both cereals and fatstock. By the 1870s, therefore, those Devon farmers with land that was anything like suitable had expanded their stock-carrying capacity by increasing their fodder crop areas. Many of them, or their landlords, had invested



in underdrainage. They were using more fertilisers, such as guano and superphosphate, and increasingly the drill was taking over from broadcast sowing (Wilmot, 1999: 305). We would expect all these changes to have increased yields, and there is some evidence that they did, as table 6 demonstrates. However, the evidence

Table 6: Crop Yields in Devon c.1836-1900

	c.1836	1861	1880s	1900
<i>Cereals (bushels per acre)</i>				
Wheat	16	22	22	22
Barley	26	32	29	28
Oats	28	37	32	37
<i>Other crops (tons per acre)</i>				
Potatoes			5.5	5.0
Hay			1.2	1.25
Turnips			15	11
Mangolds			12	19

Sources: Wilmot, 1999:304; Board of Agriculture, 1901: 54-70

is not unequivocal. While there is a clear difference between the cereal yields for the 1830s, which are based on tithe data, and the later Agricultural Returns-based data from 1861 onwards, there is less of a difference between the various post-1861 figures. Moreover, yields could vary considerably from year to year. Table 6 quotes the 1900 yield for wheat, for example, at 22 hundredweight (cwt), but in 1899 the average yield for Devon had been 26 cwt and in the previous year 28 cwt, although 22 cwt was close to the figure for the 1890s as a whole. Similar variations existed for other crops (Board of Agriculture, 1901: 54-70). Whether the yield increases produced between the 1840s and the 1860s, and possibly the 1870s, continued into the last two decades of the nineteenth century is therefore open to doubt. The other problem in assessing yields, or land productivity, is that much of the output of Devon farms was in the form of livestock, and, with the exception of milk yields (for which we have no county-level data for this period), it is virtually impossible to measure livestock yields, dependent as they are upon stocking and growth rates and sale weights.

What is clear, however, is that the arable expansion of the mid-19<sup>th</sup> century came to an end, and was reversed, in the last two decades of the century. As table 1 has already demonstrated, farm prices in general fell after 1880, but the decreases were not the same across all farm products. Whereas the decade averages of wheat prices fell by 44 per cent between the 1870s and the 1890s, and Hampshire Down wool prices fell by 39 per cent, butter prices (in the Carmarthen market) fell by only 16 per cent (Afton and Turner, 2000: pp.2044-5, 2084-5, 2088-9). As table 5 shows, Devon farmers responded by decreasing their arable acreages and putting land down to either temporary or permanent grass. The acreages of both cereals and fodder crops fell by roughly the same amount, hardly surprising, as they were part of the same rotation. The decline in sheep numbers may have been a consequence of this, as sheep

fed on roots were replaced by cattle fed on grass, but this is speculation without any direct evidence. What is clear is that dairy cow numbers increased by a slightly greater proportion than total cattle numbers, which presumably reflects the relative stability of butter prices. Overall, Afton and Turner calculate that the output of Devon agriculture measured in monetary values fell by 28 per cent between 1873 and 1911. I have attempted to replicate their calculations, and find that the 1911 figure represents a recovery from my 1900 estimate, which was 32 per cent below the 1873 output. However, if the 1900 physical outputs are revalued at 1870s prices, the decrease is only about 6 per cent. In other words Devon farmers responded to price decreases by changing the balance of their outputs to livestock rather than just reducing their supply to the market. By way of comparison, agricultural output in the dairy-based counties Cheshire and Lancashire actually rose in this period, whereas in highly arable counties such as Bedfordshire and Huntingdonshire it was almost halved (Afton and Turner, 2000: 1912). Overall, the English counties with less than 10 head of cattle per 100 acres in 1867 had the biggest decrease in farm output, whereas those with more than 20 head per 100 acres had the smallest (1867 data from John, 1989: 1065). Devon, with 19.4 head per 100 acres, just fell out of this group, and so suffered more in this period than counties with a higher cattle concentration such as Cornwall and Somerset. But at the beginning of the twentieth century Rider Haggard concluded that 'A very large part of the county is as fertile as it is beautiful', and that its farmers did reasonably well, for 'their rich grasslands save them'. (Haggard, 1906: 216).

## **Conclusion**

The story of nineteenth century Devon farming told in this paper (or, more accurately, in the works of Dr Wilmot, from which it is mostly derived) is one of changing circumstances, in which the impacts of tourism and the railways increased the demand for dairy products, fruit and vegetables and pigs, and modifications of old practices, so that livestock farmers relied more on fattening animals than their ancestors might have sold as store stock. By the end of the century the arable/pasture balance was not all that different from what it had been in the 1830s, but the rotations in use were not quite the same, more inputs came on to the farms from outside, and the remaining farm workers had more machinery to assist them. The availability of relatively cheap imported feeds, and artificial fertilisers, meant that maintaining the balance of livestock and arable was no longer so important by the end of the century, so we can detect the beginning of the increased specialisation that would become such an important part of the technical and managerial revolution that transformed agriculture in the twentieth century (Herment and Antoine, 2016). On the other hand, the replacement of the muscle power of draught animals by steam, which was occurring in the industrial and transport sectors of the economy in this century, failed to happen in farming (Auderset and Moser, 2016). Similarly, it might be argued that the changes that occurred in technology, and in the resultant output of farm products, were more a matter of degree than of revolution. To what extent this was a result of the impact of foreign competition after the 1870s is difficult to say; it certainly seems true that

farming in general underwent more radical change after the effective elimination of foreign competition from 1939 onwards than it had done before.

The other principal conclusion that emerges from this study is that there is still considerable scope for work on the regional variations in Devon agriculture. What happened in the Exe Vale and the South Hams was very different from developments in east, west and north Devon, or on the fringes of Dartmoor. Local historians might remember that post-1867 agricultural statistics were collected on a parish basis (see MAF 68 in the National Archives) even if the national data were published on a county basis. Moreover, I suspect that there is still much information in the journals of the Bath and West Society that have remained completely unused here. Fortunately, there is still much work to do.

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