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REVIEW ARTICLE

Farming high and low, 1850–1914\*

by Cormac Ó Gráda

This imposing volume brings to a close a project stretching back almost half a century. In style and format it replicates its predecessors, but its scope is broader and it easily takes the prize for bulk and weight. The delays besetting the *Agrarian History of England and Wales* enterprise have long been fair game for reviewers.<sup>1</sup> In this respect Volume Seven arrives with more grey hair than most; nearly one chapter in three contains no references at all to works published since 1990, and the citations in a further fourteen stop at 1994 or earlier. Though a pity, this turns out not to matter too much, since little published in the 1990s contradicts what is presented here. A more regrettable result of the nine-year gap between Volume Seven and its predecessor is that half the entire set is now out of print. The *Agrarian History* has few rivals in the procrastination stakes for multi-author, multi-volume projects. The *Cambridge Economic History of Europe* (1952–1989) and the *New History of Ireland* (still awaiting completion four decades after its launch) spring to mind, but they are exceptional. Compare the recent five-volume *Oxford History of the British Empire*, which involved more authors than *AHEW* yet managed to produce all volumes almost simultaneously. Or take the innovative and lavishly illustrated four-volume sets of *Histoire de la France rurale* (published in 1975–76), *Histoire de la France urbaine* (1980–83), *Histoire de la vie privée* (1985–87), and *Histoire de la vie religieuse* (1988–91), all planned and executed within a few years. The same goes for the ambitious three-volume *Histoire de la population européenne* (1997–99), edited with an multinational cast by Jean-Pierre Bardet and Jacques Dupâquier, and both first (1981) and second (1994) editions of Roderick Floud and Donald McCloskey's *New Economic History of Britain*.<sup>2</sup>

But back to Volume Seven. It covers a period subjected to a 'great rewriting' (p. 2152) in the 1960s (notably in the work of F. M. L. Thompson, T. W. Fletcher, E. J. T. Collins, and E. L. Jones). That revisionism receives further elaboration and corroboration here. Coverage is ambitious, detailed, definitive, and almost encyclopaedic, and by no means limited to the economic history

\* E. J. T. Collins (ed.), *The Agrarian History of England and Wales*, VII, 1850–1914 (CUP, 2000). Two parts continuously paginated, xl + 2277 pp. 140 figs; 279 tables. £195.00. I am grateful to Peter Solar for useful comments on an earlier version of this review.

<sup>1</sup> F. M. L. Thompson mentions 'a meeting chaired by R. H. Tawney in 1956' in his review of vol. VI while Mark Overton refers to the twenty-one year journey between original planning meeting and publication of vol. VI in 1989. See F. M. L. Thompson, *ECHR* 43 (1990), pp. 489–90; M. Overton, *AgHR* 38 (1990), p. 188. See too Paul Ashby, *AgHR* 30 (1982), pp. 80–2 (on vol. I); B. M. S. Campbell, *AgHR* 37 (1989), pp. 188–92 and P. D. A. Harvey, *ECHR* 43 (1990), pp. 739–40 (on vol. II); G. Clark,

*JECh* 52 (1992), p. 709 (on vol. III).

<sup>2</sup> T. W. Moody *et al.* (eds), *A New Economic History of Ireland* (10 vols, 1976–2001); Georges Duby and Armand Wallon (eds), *Histoire de la France rurale* (4 vols, 1975–6); J.-P. Bardet and J. Dupâquier (eds), *Histoire de la population européenne* (3 vols, 1997–9); R. Floud and D. N. McCloskey (eds), *New Economic History of Britain* (2 vols, 1981; 3 vols, 1994); William Roger Louis (ed.), *The Oxford History of the British Empire* (5 vols, 1998–9).

of the agricultural sector or the landlord-tenant-labourer nexus. Naturally, High Farming and the Great Depression feature strongly, but there is much too on rural trade and industry, on food processing, on farm organizations, and even on what agronomist Daniel Hall in 1913 dubbed 'the residential and holiday making element, that colonizes the countryside'.<sup>3</sup> Richard Perren contributes excellent accounts of veterinary products, milling, and food manufacturing and marketing, and the chapters by Anne Digby on local government, John Fisher on politics, Alun Howkins on socio-cultural history, and Nicholas Goddard on institutions help move the volume beyond agricultural to agrarian and rural history. Occasional obscure words enliven the text – e.g. 'warping' water, 'dredge corn', 'buffum', 'bodging', 'ruderal' (pp. 397, 425, 584, 929, 1665). Though there is very little cross-referencing, the editor has ensured that there is not much duplication either. Most of the contributors will be familiar to readers of this *Review*, since most of them have published here, several more than once. In this review a brief assessment of the agricultural sector in the light of Volume Seven (section I) is followed by an appraisal of its perspectives on farm workers, on land owners, and on farmers (sections II-IV). Sections V and VI raise some methodological issues, and a brief section VII concludes.

## I

Where does Volume Seven leave the farming sector? Early in the nineteenth century the growth of English agriculture helped to fashion the first industrial nation. Indeed, recent assessments of productivity gains during the Industrial Revolution have prompted one leading economic historian to ask why Britain specialized in manufacturing rather than farming.<sup>4</sup> Productivity growth continued in the period between Waterloo and mid-century, when labour input in agriculture reached an all time high of about two million. A mark of farming's achievement is that in those decades the drop in the cost of foodstuffs was almost as big as that in the cost of manufactured produce.<sup>5</sup> The agricultural history literature – and in this respect, Volume Seven is no exception (e.g. pp. 75-6, 130-1, 302-4) – focuses much more on the terms of trade within agriculture than on the relative price of food. Perhaps not enough is made of the fact that during the period under review the relative cost of foodstuffs fell, though slowly.<sup>6</sup> In the absence of free trade it would surely have risen substantially.

Rather paradoxically these productivity gains were achieved against a backdrop of doubt and conflict about the competitiveness of British agriculture (pp. 138-40). In the era of High Farming, high transport costs offered a respite and prices continued to be buoyant, prompting one

<sup>3</sup> A. D. Hall, *A pilgrimage of British farming* (1913), p. 100.

<sup>4</sup> N. F. R. Crafts, 'British industrialization in international context', *J. Interdisciplinary Hist.* 19 (1989), pp. 415-28.

<sup>5</sup> A statement based on comparing the Rousseaux indices for 'total agricultural products' and 'principal industrial products' for 1810/19 and 1840/49 (as given in B. R. Mitchell and P. Deane, *Abstract of British historical statistics* (1962), pp. 471-2).

<sup>6</sup> The Rousseaux index suggests that between the

early 1860s and the Great War the price of manufactured products fell by 12.6 per cent and that of agricultural products by 15.4 per cent (Mitchell and Deane, *Abstract*, pp. 472-3). Alternatively Afton and Turner's estimates (pp. 1888-9) imply a drop of about 16.7 per cent in the cost of agricultural output between 1870/76 and 1911/13, while Charles Feinstein's estimates of GDP at current and constant prices imply a rise in the GDP deflator of about 4.6 per cent over the same period (C. H. Feinstein, *Statistical tables of national income, expenditure and output of the UK, 1855-1965* (1972), T8, T10).

commentator rhetorically to wonder why 'with free trade, almost everything in the shape of food is getting dearer?' (p. 130). But commercial policy, technology, and consumer demand were combining to produce a significant drop in the import price of tillage relative to pastoral products.

Because tillage bulked so large in aggregate output and because tillage farmers were worst hit, both contemporary controversy and, until relatively recently, the historiography concentrated on the fate of that sector. Yet after mid-century United Kingdom imports of pastoral products rose far more than those of tillage products. This holds for both volumes and values, though the distinction between them is important. Wheat imports rose six times in volume and three times in value between 1854 and 1914, while butter imports rose three times in volume and seven times in value. Over the same period, bacon and ham imports rose thirteen times in volume but twenty-three times in value (Table 45.1a). Shifting relative prices explain why, despite the disproportionate rise in meat and dairy imports, breadgrains gave way to livestock in domestic production. The share of crops in the agricultural output of England and Wales fell from over three-fifths in the late 1860s to half in the early 1890s and slightly over two-fifths on the eve of the Great War (pp. 1908–09). The prices of livestock products held their own, as did rents in tillage areas. Fortunately for policy makers, this was one dog that did not bark. How much higher would the price of milk, butter, and meat have been had Britain not opted for free trade?

Britain's annual agricultural census, dating from 1866, has prompted several estimates of the sector's net output or gross value added. Michael Turner (Ch. 3) reviews this work and adds his own important glosses. So how did agriculture fare in terms of productivity? Despite the pessimistic prognoses of classical economists – Malthus and Ricardo had raised the spectre of diminishing returns to a fixed landmass, Marx the slower advances in 'the sciences that directly form the specific basis of agriculture rather than of industry'<sup>7</sup> – the record is a good one. If Turner (pp. 317–20) is correct, total factor productivity (TFP) rose faster on the land than off it in this period. He suggests an annual growth rate of between 0.47 and 0.65 per cent (depending on the output index used) between 1871 and 1911, respectable when compared to the 0.4–0.5 per cent estimated by others for the economy as a whole. How does this growth compare to earlier? A good deal of uncertainty surrounds productivity growth before 1850, but Bob Allen's estimates suggest TFP growth of the same order as that found by Turner – 0.6 per cent in 1700–1800 and by 0.5 per cent in 1800–50.<sup>8</sup> All these results are somewhat sensitive to the weights and deflators used. Note that the productivity estimates refer to Great Britain or the United Kingdom, while the rest of Volume Seven is about England and Wales. Another interesting implication of Turner's numbers is that productivity growth did not slacken during the Great Depression.

## II

As noted, employment on English and Welsh farms peaked c. 1850. Between then and 1914 the number of male farmers and relatives employed dropped by eight per cent, that of male farm labourers and servants by 31 per cent (pp. 1972–74). English agriculture remained distinctive

<sup>7</sup> Nathan Rosenberg, 'Karl Marx on the economic role of science', in his *Perspectives on technology* (1976), p. 136.

<sup>8</sup> R. Matthews, C. Feinstein, and J. Odling-Smee, *British economic growth, 1856–1973* (1982), p. 208; R. Floud,

'Britain, 1860–1914: a survey', in R. Floud and D. N. McCloskey (eds), *A new economic history of Britain* (2nd edn, 1994), II, p. 5; R. C. Allen, 'Agriculture during the Industrial Revolution', in *ibid.*, I, p. 111.

in its disproportionate reliance on non-family labour. Labourers still accounted for nearly three-quarters of the labour force on the eve of the Great War.

James Caird's wage data imply that the market for farm labour was less integrated in 1850 than in Arthur Young's time.<sup>9</sup> There was still significant regional variation in wages even on the eve of the Great War, though the data reproduced here (pp. 831, 1993–2019) point to some integration between 1850 and 1914. No clear pattern as to the timing of that integration emerges, however. It is curious that inter-county wage gaps failed to narrow more, given the considerable migration from low to high wage areas, here expertly documented by Brian Short (pp. 1271–96); however, those gaps would have been wider still in the absence of that migration.<sup>10</sup>

Over two centuries ago Malthus noted how 'the sons of labourers are very apt be stunted in their growth, and are a long while arriving at maturity'. Here Peter Dewey raises the possibility that 'by about 1850, and for several decades thereafter' farm labourers in the south of England were undernourished to the point of physical impairment. Low wages meant poor food, and poor food meant low productivity (pp. 854–5). Recent anthropometric analysis corroborates this view. Roderick Floud and his colleagues have shown that malnutrition held the adult heights of about one-third of English working-class males to 65 inches or less, while Nobel laureate Robert Fogel's energy accounting implies that the bottom tenth or so of the English population was still seriously malnourished c. 1800.<sup>11</sup> Such findings underpin the bleaker picture of living standards in industrializing Britain highlighted in recent studies. They also imply that low wages did not necessarily imply lower labour costs: they could reflect lower work intensity. Over a decade ago Gregory Clark suggested comparing the ratio of piece rates to day rates as an indication of the variation in work intensity across counties.<sup>12</sup> In practice the comparison may not be so easy since, as Peter Dewey reminds us (p. 843), 'a distinction must be made between the piecework done by the regular labour force and that done by casual labour'. Moreover, piecework was more likely on large farms (p. 844).

The substantial increase in real wages after 1850 (pp. 835–36) was thus both due to and responsible for higher productivity. Presumably increasing literacy played a role too, a possibility not addressed here.<sup>13</sup> The rise in the ratio of husbandmen to those working with crops is also likely to have made the stock of farm labour more skilled. Such factors must bias most cross-section and time-series comparisons of agricultural wage data. This may be seen from comparing coefficients of variation (CVs) across English counties in cash wages, in earnings in kind, and in the earnings of two specialist categories of farm labour in 1902–3

<sup>9</sup> J. Caird, *English agriculture in 1850–51* (1852), p. 474.

<sup>10</sup> George R. Boyer, 'Labour migration in southern and eastern England, 1861–1901', *European Rev. Economic History* 1 (1997), pp. 209–12.

<sup>11</sup> R. Floud, K. Wachter and A. Gregory, *Height, health and history: nutritional status in the United Kingdom, 1750–1980* (1990); R. Fogel, 'Second thoughts on the European escape from hunger: famines, chronic malnutrition, and mortality rates', in S. Osmani (ed.), *Nutrition and poverty* (1992), pp. 266–71.

<sup>12</sup> Gregory Clark, 'Productivity growth without technological change in European agriculture: a reply to

Komlos', *JECH* 49 (1989), pp. 979–91; id., 'Labour productivity in British agriculture 1300–1860', in B. M. S. Campbell and M. Overton (eds), *Land, labour and livestock: historical studies in European agricultural productivity* (1991), pp. 211–35. See too C. Ó Gráda, *Ireland: a new economic history 1780–1939* (1994), pp. 337–42.

<sup>13</sup> Compare David Mitch, 'Learning by doing among Victorian farmworkers: a case study in the biological and cognitive foundations of skill acquisition', *London School of Economics Working Papers in Economic History*, 16 (1994).

TABLE 1. The variation in money wages and earnings per week, 1902-3

	Mean (s.)	Coefficient of Variation
Cash wages	15.2	0.144
Earnings	17.79	0.108
Horsemen's earnings	19.26	0.086
Shepherds' earnings	19.93	0.092

Source: derived from Collins (ed.) *Agrarian History*, VII, pp. 2007-08, 2010-11.

(see Table 1). Clearly, payments in kind compensated in part for low cash wages, and high wages in part reflected higher proportions of more skilled labour (pp. 828-9). Thus not allowing for the shifting heterogeneity of farm labour exaggerates the extent of regional variation and underestimates the degree of convergence.

### III

In *English agriculture in 1850-51* James Caird had a good deal to say about land tenure. Though he extolled landlords for 'fair and generous dealing', he was obsessed by farmers' need for security for their fixed capital. Caird claimed that agriculture was not helped by tenant right, which he deemed subject to abuse and fraud, and called for more improving leases 'with liberal covenants' instead. Agreements that made no allowance for inflation and shifting factor demands were not going to work, however, and by 1914 leases were a dead issue. Relative to Caird, landlords hardly feature in Hall's *Pilgrimage*.<sup>14</sup> The contrast is a measure of the shrinking influence of the landed interest in this period. Volume Seven ably chronicles the legislative measures, including compulsory compensation for tenant improvements, that cut landlord power (pp. 793-99). Though differences between farmer and proprietor were inevitable, English landlordism had a legitimacy lacking in the rest of the United Kingdom. Expressions such as 'eviction', 'ejection', 'absenteeism', and 'rackrent' are absent here.

In the course of a fine account of the decline of the landed aristocracy J. V. Beckett (pp. 716-9) recycles F. M. L. Thompson's findings on the dispersal of landed estates on the eve of the Great War. Thompson's 'flood' of 0.8 million acres sold in 1910-14 attracted comment at the time, but it bears noting that it represented only 0.4 per cent of the land area per annum. Here a little comparative perspective may serve. Continuous data on land sales of five hectares or above in England, available since 1946/7, show that the aggregate acreage of land bought and sold annually has averaged slightly less than two per cent of all farm land since then. In Denmark the proportion on the market was three to four per cent c. 1900, but in the depressed early 1930s it reached eight per cent. England's pre-1914 'flood' also seems less apocalyptic when compared to the transfers that followed the creation of the Incumbered Estates Court in Ireland in 1849.<sup>15</sup> Indeed some purging of the most hard-pressed proprietors may have been overdue.

<sup>14</sup> Caird, *English agriculture*, pp. 504, 506-09; Hall, *Pilgrimage*, pp. 85, 148-9.

<sup>15</sup> Collins (ed.), *Agrarian History*, VII, p. 718; F. M. L.

Thompson, *English landed society in the nineteenth century* (1963), p. 322; Andrés Eiríksson and C. Ó Gráda, *Estate records of the famine* (Dublin, 1995), pp. 51-66.

There is some duplication in the treatment of landlord investment (Beckett, pp. 734-41; Holderness, pp. 875-83). Three contributors discuss underdrainage, a key component of landlord investment in these decades (Brassley, pp. 514-521; Beckett, pp. 734-5; Holderness, pp. 888-93). Unresolved issues remain. Was landlord investment a function of the farm size distribution on an estate? What, if any, was the regional variation in the rate of such investment? What was the rate of return? How did owner-occupiers fare relative to tenants both before and after the 1870s? Was England's tenurial system a boon or a burden?

#### IV

Travelling around England in 1910-12 Daniel Hall had found 'in every district ... good and bad farmers close together'. That sounds plausible: it was (and probably still is) easier for incompetent agents to survive in farming than in most other activities. But how much easier? Hall also asserted that in Scotland the 'general level of farming' was high: 'there not only are the good very good, but those at the bottom of the scale are still respectable farmers'.<sup>16</sup> For some purposes the average is enough. For those interested in total factor productivity or yield per acre or market response it is enough to know the average or representative response. But sometimes it would be nice to know more, and one misses in Volume Seven a less impressionistic measure of the range of performance described by Hall.<sup>17</sup> Gordon Mingay's assessment of farmers in Ch. 11 merely contrasts 'the small working farmers, often untutored and ignorant' and 'the manager of a farm running to a thousand acres or more'. Later he juxtaposes the 'well-informed progressive farmer' and the 'ill-educated rustic', adding that 'the majority, no doubt, fell somewhere between the two extremes' (pp. 762, 804). But that is not telling us much. Nor is the accompanying claim that 'many' relied too heavily on ill-founded ideas of neighbours, seed-merchants or 'even an elderly stockman or shepherd' (p. 804) based on any systematic analysis. Systematic analysis is not easy, because the significant number of surviving farm accounts (see pp. 134-5) are probably as atypical as the farms visited by Caird or Hall. But Mingay's account relies too much on over-familiar sources such as the gloomy Rider Haggard (on whom also see pp. 209-10), whom he invokes no fewer than twenty times.

Mingay argues against placing 'too much' emphasis on the conservatism of farmers (p. 805). But how much is 'too much'? Other contributors are more critical of the farmer. B. A. Holderness deems Rider Haggard's negative verdict on the dairy farmer 'essentially true' (p. 478), and argues that the resistance of pig and poultry farmers to cooperation cost them dear (pp. 478, 489, 490), while Paul Brassley's expert surveys of research, science, and education are also critical of the farmers (pp. 606, 616-20). However, one interpretation of Turner's productivity findings is that farmers' performance did not deteriorate over the period.

#### V

Comparative insights from agricultural developments elsewhere are few in Volume Seven. There is virtually nothing on agriculture in Germany, France, Denmark, or Ireland. The challenge of

<sup>16</sup> Hall, *Pilgrimage*, pp. 150-1.

<sup>17</sup> Compare B. Short *et al.*, *The National Farm Survey, 1940-3* (1999).

van Zanden's stimulating analysis of comparative performance of European agriculture before the Great War, and its 'surprising' finding that British agriculture stagnated after 1870 relative to everywhere else, are not met.<sup>18</sup> It must be admitted that van Zanden's strategy of estimating output in wheat units biases the outcome against countries such as free trading Britain and Ireland, where the output share of (high value) meat and dairy products grew most in this period. Still, there is a case to be answered. Van Zanden attributes the poor performance of British agriculture to structural and institutional factors: the large average size of farms, the reluctance of farmers to cooperate, and the lack of state-sponsored extension services. New reaping technologies increased the optimal size of the corn farm, but smaller farms were better geared to dairying and animal husbandry. In an era of rising real wages, the farmer who relied mainly on his own labour had the advantage. It is significant how little the farm size distribution in England and Wales changed between 1875 and 1915 (pp. 1836-76). We still don't quite know why. Is it because it is nearly always slow to do so, or because farm size does not matter very much? Starting conditions could generate inefficiencies over a long period: it is said of the French revolution that one of its enduring legacies was 'the survival of countless farms that were too poor to afford to invest or to overhaul their methods of production'.<sup>19</sup>

In terms of methodology Volume Seven is, like the rest of the *Agrarian History*, rather insular and old-fashioned. The citations are preponderantly to English sources. In the bibliography I counted forty-one articles published in this *Review* since 1960, and thirty in the *Economic History Review*, but only nine in *Agricultural History*, five in the *Journal of Economic History*, and one in *Explorations in Economic History*. Nor does Volume Seven yield much to cliometric approaches to the past. There is no systematic sampling and hardly any application of even rudimentary econometric techniques (except on pp. 134-5 and in a footnote on p. 1185). Only John Chartres and Michael Turner show much enthusiasm for sustained quantification. In his lengthy analysis of rural non-agricultural employment, Chartres draws further mileage from a measure of regional concentration devised and dubbed the localization quotient by Belfast's Leslie Clarkson, while Turner is responsible for the output and productivity estimates and, with Bethanie Afton, the extended data section (pp. 1757-2140). Overall, however, the failure of cliometric analysis to make an impact on English agricultural historians is a pity, since it offers insights into several of the issues broached here. For example:

- (a) The repeal of the Corn Laws 'mattered'. But while there is no ambiguity about its effect on real wages, its impact on output and distribution depended on how it affected the terms of trade. Since Britain's economic might probably gave it substantial leverage on world markets in mid-century, repeal probably damaged the manufacturing sector a little.<sup>20</sup>
- (b) The decline in wheat prices in England between the 1870s and the 1910s was much greater than that warranted by the fall in transport costs alone. It benefited both non-agricultural and

<sup>18</sup> J. L. van Zanden, 'The first green revolution: the growth of production and productivity in European agriculture, 1870-1914', *ECHR* 44 (1991), pp. 215-39.

<sup>19</sup> J.-Ch. Asselain, cited in F. Aftalion, *The French revolution: an economic interpretation* (1990), p. 193.

<sup>20</sup> D. N. McCloskey, 'Magnanimous Albion: free trade

and British national income, 1841-1881', *Explorations in Economic Hist.* 17 (1980), pp. 303-20; J. G. Williamson, 'The impact of the corn laws just prior to repeal', *ibid.*, 27 (1990), pp. 123-56; D. A. Irwin, 'Welfare effects of British free trade: debate and evidence from the 1840s', *J. Political Economy* 96 (1988), pp. 1142-64.



agricultural labour. The fall of about 29 per cent in cereal prices reduced the return on tillage land by nearly two-fifths but increased that on pasture land by one-seventh.<sup>21</sup>

(c) Though some farmers may have responded to the grain invasion by growing more corn, the supply elasticities of cereal production in Britain during these decades, though small, were on a level with elasticities elsewhere.<sup>22</sup>

(d) Despite the 'early release' of labour from agriculture during the Industrial Revolution, imperfections in the market for unskilled labour were costing about three per cent of GDP c. 1830. High rates of internal migration failed to close interregional wage gaps in the following decades. However, that migration kept the gaps from becoming much wider in the period under review.<sup>23</sup>

(e) The English landscape of small fields and uneven ridge-and-furrow surfaces held back the diffusion of the mechanical reaper in the 1850s and 1860s. The delay made sense, however, since the removal of the obstacles to mechanization would not have paid.<sup>24</sup>

Volume Seven is full of its own qualitative and sometimes subtler and more nuanced insights into these topics. For instance, Collins' discussion of the political economy of post-Repeal protectionism is excellent (pp. 54-68), as are Roy Brigden's on the diffusion of farm machinery and Brian Short's on internal migration (pp. 505-13, 1271-96). But the reluctance to invoke and indeed confront the cliometric findings is regrettable.

## VI

Surveys, even careful and wide-ranging ones like this, can never hope to cover all the bases. John Chartres' useful overview of rural trades concentrates too much on the 1861 census, while Gordon Cherry and John Sheail's welcome but overlong (pp. 1515-1754) analysis of the impact of urbanization on rural England pays disproportionate attention to the 1890s and after. The 'absence of a range of detailed local studies' precludes a judgement on the impact of the Great Depression on Welsh farmers (p. 448), and 'the absence of accessible bank records before 1914' one on bank credit (p. 922). Though underdrainage was 'emblematic of Victorian ideas of progress', Paul Brassley remains uncertain about its extent and impact, while B. A. Holderness deems earlier efforts at producing 'a simple total of the acreage actually subject to underdrainage before 1914' flawed (pp. 514-21, 888-93), and his own 'tentative' estimate of acreage drained and

<sup>21</sup> Kevin H. O'Rourke, 'The European grain invasion, 1870-1913', *JECHE* 57 (1997), pp. 785, 792.

<sup>22</sup> J. Thirsk, *Alternative agriculture: a history from the Black Death to the present day* (1997), p. 153; M. Olson and C. C. Harris, 'Free trade in corn: a statistical study of the prices and production of wheat in Great Britain from 1873 to 1914', *Quarterly J. Economics* 73 (1959), pp. 145-68; Ó Gráda, 'British agriculture, 1860-1914', in Floud and McCloskey, *Economic history* (2nd edn), II, pp. 151-2; E. H. Hunt and S. J. Pam, 'Prices and structural response in English agriculture, 1873-1896', *EcHR* 50 (1997), pp. 477-505.

<sup>23</sup> J. G. Williamson, 'Did English factor markets fail

during the industrial revolution?', *Oxford Economic Papers* 39 (1987), pp. 641-78; Boyer, 'Labor migration'.

<sup>24</sup> P. A. David, 'The mechanization of reaping in the ante-bellum Midwest', in H. Rosovsky (ed.), *Industrialization in two systems* (1966), pp. 3-39; id., 'The landscape and the machine. Technical interrelatedness, land tenure and the mechanization of the corn harvest in Victorian Britain', in D. N. McCloskey (ed.), *Essays on a mature economy: Britain after 1840* (1971), pp. 145-205, and discussion, pp. 206-14; Alan Olmstead and P. W. Rhode, 'Beyond the threshold: an analysis of the characteristics and behavior of early reaper adopters', *JECHE* 55 (1995), pp. 27-57.

TABLE 2. Cross-county standard deviations, 1875-1915

	1875	1895	1915
Cows per acre under crops	0.486	0.462	0.449
Sheep per acre under crops	0.523	0.629	0.796
Pigs per acre under crops	0.334	0.402	0.461
Corn as a ratio of all crops	0.412	0.448	0.545

its cost for 1841-1900 is much lower than earlier estimates. Brassley's section on crop varieties set out to assess extent and impact, but prudently concludes that farmers seemed uninterested and largely stuck to home-saved seed (pp. 522, 530).

Geography and climate bulk large in the historiography of English agriculture. Young, Marshall, Caird, Hall, and Haggard all organized their analyses of farming around regional specificities. Volume Seven engages in its own useful and evocative pilgrimage of the regions in chapter 5, noting that the diversity which Caird found 'axiomatic' in 1850 imposed largely the same constraints on farmers in Hall's account of 1910-2.<sup>25</sup> Both the impact of developments such as the grain invasion and the response to them were clearly constrained by geography. For all that, some of the regions are loosely defined here. The south and south-east are defined by their proximity to London, the south-west by its mild climate, and East Anglia by its specialization in corn, but the midlands 'is not a clearly defined area with readily agreed boundaries', and Wales is bounded by politics and culture, while the North's counties 'have defied neat description in terms of geography' (pp. 366, 389, 402, 411). Moreover, these cross-section differences did not prevent increasing regional specialization over time (p. 389). The numbers in Table 2 below, derived from Afton and Turner's Tables 36.8 and 36.9, are one easy way of capturing the shifting regional variation in livestock and corn across England and Wales between 1875 and 1915. The sharp increases in the cross-county standard deviations ( $n = 54$ ) in sheep and pig densities imply an intensification in regional diversity over these decades in sheep and pig rearing. The same goes for corn, but by this reckoning dairying became less constrained by geography over time.

## VII

Daniel Hall ended his pilgrimage of rural Britain on a complacent note, claiming that farmers had little to fear and nothing to learn from others. On the eve of the Great War the sector as a whole was doing well, and even the farmers of Essex were enjoying 'quiet prosperity'.<sup>26</sup> Professor Collins ends his own much longer pilgrimage less ebulliently, brilliantly chronicling the main findings of his team, listing several unresolved issues, and regretting the isolationist character of British agrarian historiography. Some begrudging readers may interpret his 'pathways for future research' as code for issues that should have been tackled in the preceding two thousand pages. But away with the begrudgers! In the end, this landmark survey was worth waiting for and will surely endure.

<sup>25</sup> Hall, *Pilgrimage*, pp. 145-6.

<sup>26</sup> *Ibid.*, pp. 69, 146, 446.