

The
**AGRICULTURAL
HISTORY REVIEW**



VOLUME VIII 1960

PART I

*

PRINCIPAL CONTENTS

Notes on Early Agriculture in Scotland
by ROBERT B. K. STEVENSON

*

Eighteenth-Century Changes in Hampshire Chalkland Farming
by E. L. JONES

*

The Wheat Act of 1932
by J. A. MOLLETT

PUBLISHED BY
THE BRITISH AGRICULTURAL HISTORY SOCIETY

THE AGRICULTURAL HISTORY REVIEW

VOLUME VIII PART 1 · 1960

CONTENTS

Notes on Early Agriculture in Scotland	<i>Robert B. K. Stevenson</i>	page 1
Eighteenth-Century Changes in Hampshire Chalkland Farming	<i>E. L. Jones</i>	5
The Wheat Act of 1932	<i>J. A. Mollett</i>	20
Plan of an Agricultural Society and Experimental Farm in Northumberland	<i>H. Cecil Pawson</i>	36
List of Books and Articles on Agrarian History issued since September 1958	<i>Joan Thirsk</i>	38
Reviews:		
<i>Dartington Hall: the history of an experiment</i> , by V. Bonham-Carter	<i>W. H. Chaloner</i>	47
<i>The National Policy and the Wheat Economy</i> , by V. C. Fowke	<i>J. R. Raeburn</i>	47
<i>The Anti-Corn Law League, 1838-1846</i> , by Norman McCord	<i>Edgar Thomas</i>	48
<i>Land Reform in Japan</i> , by R. P. Dore	<i>Colin Clark</i>	49
<i>Danish Wheel Ploughs</i> , by Peter Michelsen		51
<i>English Field Systems</i> , by H. L. Gray	<i>H. P. R. Finberg</i>	51
<i>Local History in England</i> , by W. G. Hoskins	<i>Robert Douch</i>	51
<i>The Aberdeen-Angus Breed</i> , by James R. Barclay and A. Keith		52
<i>A History of British Livestock Husbandry, 1700-1900</i> , by R. Trow-Smith	<i>J. W. Y. Higgs</i>	52
<i>Rural England, 1086-1135</i> , by Reginald Lennard	<i>Gerard Culkin</i>	52
<i>The Great Tide</i> , by Hilda Grieve	<i>J. E. Maher</i>	53
<i>Canvey Island</i> , by Basil E. Cracknell	<i>W. E. Minchinton</i>	54
<i>The Black Fens</i> , by A. K. Astbury	<i>J. E. Maher</i>	54
<i>Ostpreussische Domänenvorwerke im 16. und 17. Jahrhundert</i> , by H. H. Wächter	<i>Joan Thirsk</i>	54
Books received		56
Letters to the Editor		45
Notes and Comments		46
Notes on Contributors		37

Notes on Early Agriculture in Scotland¹

By ROBERT B. K. STEVENSON

THE archaeological evidence for the cultivation of grain in Scotland covers the grain itself, fields, and ploughs, besides grinding-querns which, though frequent, will not be considered now. The pollen from weeds of cultivation may ultimately come to be added.

Hans Helbaek from Denmark has shown from impressions in pottery that barley was already cultivated in neolithic Orkney and Morayshire, and for the early and middle bronze age he got similar evidence from most parts of Scotland except the west Highlands and far north.² Wheat, though known in neolithic southern England, does not seem to have been eaten here until Roman times, which was when oats began to be cultivated in Britain.

Since Helbaek's study was published a heap of 28 lb. of carbonized barley has been found by C. S. T. Calder at Gruting in Shetland. It contained three times as much of the naked form as of the hulled, and was built into the wall of a house of the local stone age, probably corresponding to the end of the British early bronze age.³ Similar houses have been found in recent years in some quantity in various parts of Shetland, and often in places where the moorland seems to have been uninhabited ever since, except for sporadic iron-age squatting in the house sites; so that the numerous low clearance heaps of stones and the remains of field dykes that surround individual houses, or scattered groups of houses, are likely to be contemporary with them, about the middle of the second millennium B.C.⁴

The fields, according to Calder, are usually curvilinear in outline, and range from a single enclosure to half a dozen or so. In size they vary from about 60 to 260 feet across. The clearance heaps are found both inside and outside the enclosures, which may have kept the flocks and herds from the crops—bones of sheep and small cattle have been found in the houses.

Angus Graham has recently studied a number of 'cairnfields' of uncertain date in other parts of Scotland, which he concludes are mainly clearance heaps although traces of associated field boundaries are scanty.⁵ For one site in Morayshire he concluded that the cairns were numerous enough to have

¹ Read at the Conference on Scottish Agricultural History in Edinburgh, 26 September 1959.

² With Knud Jessen in *Kong. Danske Videns. Selskab (Biol. Skrift. III)*, 1944; cf. *Proc. Prehist. Soc.*, 1952, pp. 194 ff.

³ *Proc. Soc. Ant. Scot.*, 1955-6, p. 353.

⁴ *Ibid.*, pp. 357 ff.

⁵ *Ibid.*, 1956-7, pp. 7-23.

prevented the use of a plough drawn by animals, and if they were in fact the result of land clearance it was for manual cultivation.

Some confirmation for the early date of the Shetland fields may be got on the top of a hill near Lerwick (Hill of Shurton), where at the base of deep blanket peat there are the stumps of a dyke that had almost entirely gone before the peat covered it.

The scarcity of hard wood in Shetland, where drift spruce was used as timber,¹ may account for hundreds of enigmatic stone implements that are almost peculiar to the islands, though a few are known also from Orkney. In particular there is one relatively scarce type: stone bars two or three feet long or more, though generally only broken tips two to three inches thick, have been collected.² These bars are rough, but worn smooth at one side of the tip only, and this localized wear could be explained if such a bar were put in the place of the wooden fore-share of an early northern European plough, one that has developed just beyond the simplest plough which has no fore-share and which continental writers call the 'crook-ard'.

The idea of a stone share is not entirely extravagant, as they have been occasionally recorded in modern times, and neolithic stone shares—quite different indeed from the possible Shetland ones—have been convincingly demonstrated from central Europe.³

A more developed type of plough is known to have been used in Denmark in the iron age and probably already in the late bronze age. Its massive curved beam is perforated at one end to receive a stilt, ploughshare, and fore-share, all of separate pieces of wood.⁴ This 'bow-ard' is known in Britain from two finds in south-west Scotland: a typical beam from near Lochmaben, Dumfriesshire, undated;⁵ and a one-piece plough-head and stilt from under the floor in a round-house or crannog in Milton Loch, Kirkcudbrightshire, occupied in the second century A.D.⁶ A triangular share will have been attached to the similarly shaped head, which is slotted to receive it.

Another type of plough reached south-east England at the time of the Roman conquest or just before. It was fitted with an iron share and possibly normally with a coulter. Four iron objects found in Romano-British contexts in south-east Scotland have been assigned by F. G. Payne to such ploughs.⁷ But this should not be accepted as quite certain, for none is entirely like the specimens he illustrates from England, and three have a widening of the

¹ *Archaeol. News Letter*, IV, 1952, pp. 133-7.

² *Proc. Soc. Ant. Scot.*, 1955-6, p. 396.

³ P. V. Glob, *Ard og Plov*, 1951, pp. 124 ff.; *Germania*, 1956, pp. 144-7.

⁴ Glob, *op. cit.*, pp. 113 ff.

⁵ *A. H. R.*, V, 1957, p. 76.

⁶ *Proc. Soc. Ant. Scot.*, 1952-3, pp. 143-4.

⁷ *Archaeological Journal*, CIV, 1947, p. 111 and Fig. 1.

blade beyond the socket that is exactly like the shape of a winged peat-spade included in one of the hoards of iron scrap to which belong another of these possible shares and the fourth dissimilar one.¹ The three objects may, then, be evidence of narrow-blade spades rather than of ploughing. If they are shares, however, they imply according to Payne a horizontal share undermining and turning a furrow, in contrast to the high angle of penetration of the Milton Loch plough.

However, on Danish analogy,² even the latter could have been tilted to the right during ploughing so that the arrow-shaped share turned the greater part of the soil to one side; only the earliest 'crook-ards', and with them the Shetland stone shares if that is what they are, scratched or hoed the soil without turning it.

The square iron-age (so-called Celtic) type of field known in southern England is not known in Scotland: that once claimed near Galashiels is not now accepted.³ A field system possibly of the Roman period exists however in Glenrath, Manor parish near Peebles.⁴ Low stone dykes or heaps run downhill from a series of enclosures some of which are single small huts within courtyards. There are clearance heaps in the fields thus bounded.

Payne, considering in this REVIEW the evidence from shares and coulter that implied the existence of mould-board ploughs in at least late Roman Britain, drew attention to ploughs whose soles are protected on the land-side (left side) by a series of wearing stones driven into holes bored in the wood.⁵ Three ancient wooden soles with such pebbles have been found in Denmark, with evidence for mould-board attachments. The early iron-age date once assigned to them now seems very unlikely, and Glob dates them to the end of the Danish iron age, that is to say not long before Viking times. The use of such protective pebbles is known from nineteenth-century wheeled ploughs, and the ancient ploughs in question may similarly have had wheels.⁶

Pebbles of quartzite that are undoubtedly from similar ploughs have been found in Britain. In particular the National Museum of Antiquities has examples from a number of places in south-east Scotland, also from Bute in the west, and, very recently recognized, several from Jarlshof in Shetland. The latter include the only find with a datable context of any kind, one from

¹ *Proc. Soc. Ant. Scot.*, 1931-2, Fig. 22: 59, 62; and 1952-3, p. 47 where it is suggested that the peat spade is intrusive; but the state of preservation and similarity to the supposed shares argue for true association.

² Glob, *op. cit.*, p. 114.

³ *Proc. Soc. Ant. Scot.*, 1950-1, p. 94.

⁴ *Ibid.*, 1940-1, pp. 109 ff.

⁵ *A. H. R.*, v, 1957, p. 78.

⁶ Glob, *op. cit.*, pp. 12 and 121 ff.

a twelfth-century Norse outhouse.¹ It may be suggested that the pebble-shod plough came over with the Danish invaders who conquered Northumbria in the ninth century and spread to Norse parts of the country also. In England Payne knows of pebbles from Yorkshire and Lincolnshire.

Ploughs with movable mould-boards and movable coulter which allowed the furrow to be turned to right or left—the so-called one-way ploughs—apparently go back in Britain to Roman times, and Payne in his earlier paper overturned previous ideas about the relationship between ploughs and field shape, and the supposed contrast between Celtic light ploughs and heavy Anglo-Saxon ploughs.² The extent to which wheels were used in Roman or later times is, it seems, far from a solved problem.

All of which leaves in doubt the date and reason for the introduction of horizontally terraced fields, such as in Scotland are mainly known in the south-east—as far as Graham's researches went just before the war.³ It seems likely, however, that they are medieval in date. On Arthur's Seat in Edinburgh they are contemporary with a type of farm not yet properly explored, that consists of oval enclosures containing curvilinear structures.⁴ Such homesteads appear, in parts of Dumfriesshire and Peeblesshire, to be the direct predecessor of the modern farmsteads that are sited downhill from them, but they also represent smaller sub-divisions of land.⁵

On Arthur's Seat and elsewhere the horizontal terraced fields were superseded by vertical rigs, a process probably completed by the seventeenth century. The purpose of raised rigs and their curvature has been much written about. Here in Scotland at least they seem with few exceptions to run up and down the slopes, and there can be little doubt that prior to field drains the ridges and the furrows between them were intended as a drainage system. The contrast with terraces which retain water could hardly be greater, and the change from one to the other must represent a more fundamental change of intention than has generally been supposed.

¹ *Proc. Soc. Ant. Scot.*, 1935-6, p. 265 and Fig. 15; J. R. C. Hamilton, *Excavations at Jarlshof*, 1956, p. 173.

² *Archaeological Journal*, *loc. cit.*

³ *Proc. Soc. Ant. Scot.*, 1938-9, pp. 289-315.

⁴ *Ibid.*, 1946-7, pp. 160 ff.

⁵ *Ibid.*, 1940-1, pp. 92 ff.

Eighteenth-Century Changes in Hampshire Chalkland Farming

By E. L. JONES

THE past farming systems of light-soiled districts are often described as 'sheep-and-corn'. The term does not reveal the changes which took place at various times in the exact objects of sheep and grain production and in the relative importance of the two groups of products. This paper describes some agricultural developments in the Hampshire Chalklands, traditionally a 'sheep-and-corn' area, in order to show how greatly the emphasis on certain products changed between the early eighteenth and early nineteenth centuries. The evidence so far available permits no final conclusions on the evolution of Chalkland agriculture, but the sequence suggested here may provide a framework for more exhaustive studies, and should stress the inadequacy of 'sheep-and-corn' for describing farming systems which changed in essentials over time.

The early decades of the eighteenth century may only be taken as the base period for a discussion of the whole century if it is recognized that they themselves were times of agricultural transition. In the Hampshire Chalklands the agricultural advances of the late seventeenth and early eighteenth centuries were towards increasing the supplies of sheep feed. The greater provision of artificial fodder crops and irrigated grass for the flock made the cultivation of more and more sheep-walks possible, and this continued during the late eighteenth century under the impetus of rising prices for grain. The increase of fodder supplies, the extension of tillage, and the changes in farm production and costs which they helped to bring about are considered here.

I

The sheep flock was the pivot of Chalkland husbandry. From the later seventeenth century demand for local wool was falling, but ewe flocks remained of central importance for breeding stores and fertilizing the ploughland. The large, lanky, downland sheep were admirably suited to a routine in which daylight was spent grazing the downs and darkness folding on the arable. On the other hand they gave only a small fleece, although of good quality, and the culled ewes fattened only slowly.¹ The grassland flocks were

¹ Edward Lisle, who farmed at Crux Easton from 1693 or 1694 until 1722, did not regard Hampshire Chalkland sheep as abundant wool bearers, and contemporary farm accounts record less valuable sales of wool than of sheep on the hoof.—E. Lisle, *Observations in Husbandry*, 1757, *passim*; Farming and Domestic Account Book for Property at Compton and

limited in size by the shortage of fodder in winter and at lambing. Supplementary supplies would mean that more sheep could be stocked; these in turn would promote higher crop yields and permit the permanent cultivation of the thinner chalk soils.

These desiderata became attainable from the latter half of the seventeenth century with the spread of water meadows and 'new' crops. In 1669 John Worlidge of Petersfield recommended sowing turnips and "several new Species of Hay or Grass," and floating water meadows.¹ Thirty years later sainfoin, ryegrass, clover, and turnips had been established widely, as the work of Edward Lisle clearly reveals.² These crops alone, however, were of great but not inestimable importance, as was emphasized by Lisle's difficulties in overwintering cattle on the high downs.³ At Crux Easton even sheep pressed hard on resources of fodder. "It is a hard matter," lamented the would-be grazier, "tho' one have a good stock of that grass, to get the shepherd's leave to hayn it from the sheep for that end [to feed cattle], he stands so much in need of the hop-clover grass from the middle of March to the beginning of May."⁴ Lisle was unfortunate in that Crux Easton lies far from a river valley. In the common type of Chalkland parish abutting on to a stream forced grass from floated meadows was at this time being added to the 'new' crops, effecting an unprecedented improvement in the fodder situation.

It has been stated that "during the eighteenth century in particular, water-meadows must have been pushed to the limits of areas where it was possible to construct them."⁵ This accords with the visible remains of irrigation systems on the valley bottoms and with contemporary documents. For instance, on the Compton reaches of the Test payments for irrigation are recorded from 1714, when it was patently routine and had induced three men to specialize in the work; they charged by the acre for drowning meadows and piece rates for such tasks as "Shutting y^e hatches Down."⁶ In the Park meadows fifty-one acres were drowned regularly. These meadows were maintained partly for dairy cattle, and in accordance with local practice herds

Somborne, H[ampshire] R[ecord] O[ffice]: 2M37/148; Accounts of Mr Rumbold's executors 1707-21, HRO: 2M37/153. The sale of stores is stressed in Defoe's *Tour* of 1724, Everyman edition, p. 289.

¹ J. Worlidge, *Systema Agriculturae*, 1681 (first edn., 1669), pp. 11, 17, 46.

² Lisle, *op. cit.*, *passim*. (Contemporary farm accounts refer to Rye Grass, Sainfoin, Hop Clover, and Broad Clover.—HRO: 2M37/148, 153.)

³ *Ibid.*, pp. 229-33, 263. ⁴ *Ibid.*, p. 217.

⁵ H. P. Moon & F. H. W. Green, *Land Utilisation Survey*, Hampshire, ed. L. D. Stamp, 1940, p. 377.

⁶ HRO: 2M37/148, 149, 150.

and pasture rights were let annually at Pittleworth, Compton, and Brook. Sheep were also kept and other flocks agisted for the lambing season. Despite some use for dairying (later in the century possibly releasing some parish cow downs for tillage) the improvement of sheep husbandry was doubtless the main aim in watering meadows.¹

Incidental light on the extent of water meadows in the mid-Test valley is shed by the proprietors' disputes with a downstream miller. In 1713 thirty-eight acres of Pittleworth Farm were watered, while in 1743 "Mr Gatehouse waters by his carriage that has been cut time out of mind, flood mead about 35 Acres he waters by the carryer that has been cut about 30 Years, about 30 Acres he waters by Sir William's Wire [weir] about 13 Acres, & carry the Waters intirely from Mottisfont Mill."²

On the Itchen there were attempts to float common meadows, the improvement of which presumably tended to lag behind that of meadows belonging to single proprietors. In 1704 a contractor was required to water Otterbourne common meadow for the mutual benefit of the proprietors through "the greatest Increase of Grass & Hay as the sd Land is Capable of in respect of the Sd improvement by watering."³ This scheme failed, for the meadow became badly flooded from the attempted Itchen Navigation. From 1724 John White, Sir William Heathcote's agent, took an interest in the problem and by 1731 had secured the proprietors' assent to a scheme for which he had prepared estimates: "it is to be considered, that it must be first layn dry, & afterwards improved by drowning." That year a surveyor began work and thenceforth annual levies were raised to meet the cost of improvement, but the physical difficulties were not overcome. By 1740 the meadow "hath for some time Past been overflowed with Water and lain in a Ruinous Condition," and in 1746 another estimate for draining, partly by "Lowering the Carriage," was submitted. John White also suggested watering forty acres of common meadow at Compton on the Itchen in 1728. This was successful; his proposal is endorsed in another hand, "NB the pasture ground was watered, in the year 1730 & it proved beyond expectation."⁴

¹ Incidental advantages of water meadows included the control of drainage, which lessened the risk of sheep-rot, and the release of a surplus of hay for sale.—Papers relating to Pittleworth Farm, HRO: 18M54/Box G, pkts. A, C; Edwards's Collection: Farm Accounts, HRO: 2M37/148-53.

² HRO: 2M37/149. See also Papers relating to watering of meadows of Pittleworth and mill at Mottisfont, HRO: 18M54/Box G.B., 1-10, and Particulars of Pittleworth Farm, HRO: 18M54/Box G.C., 12.

³ Draft Articles of Agreement, HRO: 18M54/I pkt. 1. Subsequent schemes are detailed in the same bundle.

⁴ Documents relating to Compton Estate, HRO: 18M54/I pkt. F, No. 1.

The examples given, which might be extended, indicate the scale on which meadows were floated. The expenditure and exertion involved suggest the large return expected and further that there was no cessation of 'improving' activity during the depression of 1730-50. Floated meadows, Dr Kerridge concludes, "made possible earlier lambing and increased sheep stocking, ensured a supply of hay in drought, and by integration with the sheep-and-corn husbandry of the district, promoted increased yields of corn, especially of barley, thus constituting an improvement of the first order."¹

II

The improved fodder supplies made possible the folding and thus the cultivation of thinner soils, this being "the feature that impressed most travellers" in the Chalklands in the late seventeenth and early eighteenth centuries.² In 1724, for example, Defoe noted the recent extension of tillage by the sheep-fold system on the chalk of Hampshire, Wiltshire, and Dorset. Although he observed prodigious sheep-flocks it was already apparent that "the number of sheep fed on these downs is lessened, rather than increased, because of the many thousand acres of the carpet ground being, of late years, turned into arable land, and sowed with wheat."³ Lisle was interested in the costs of cultivating marginal soils, and recommended "gentlemen who have great downs, to plough a furrow across them in some places, that they may turn the best of such lands into arable."⁴

Incentive for the general cultivation of downland was nevertheless lacking before mid-century. Until then a farming system was evolving in which the degree of sheep-folding dictated the relatively slow rate at which fresh land could be brought and kept under the plough. With the lessening return to wool production, sheep became increasingly the tools of arable husbandry. Water meadows and 'new' crops provided the means of multiplying the tools. The inextricable bond between the folding flock and grain production was thus explained to Lisle by Mr Hawkins, "the great Hampshire farmer": "If a bane fell on sheep, corn would be dear, because there could not be a fifth part of the folding that otherwise there would be, and consequently a deficiency of the crop."⁵

The integral rôle of the sheep-fold in the production of the cash crops, wheat and barley, was accentuated during the depression of 1730-50. This

¹ E. Kerridge, 'The Sheepfold in Wiltshire and the Floating of Water-meadows', *Econ. Hist. Rev.*, Ser. 2, VI, 1954, p. 289.

² A. H. Fry, *Land Utilisation Survey*, Wiltshire, ed. L. D. Stamp, 1940, p. 236.

³ D. Defoe, *Tours*, Everyman edn., I, p. 282; see also pp. 187, 285.

⁴ Lisle, *op. cit.*, pp. 3-4, 266. ⁵ *Ibid.*, p. 430.

depression has been described by Dr Mingay from the rentals of the duke of Kingston.¹ An examination of the rentals for Broughton Manor, part of the only Kingston estate containing Hampshire lands, between 1722 and '39, supports the general thesis.² Arrears occurred in 1728 and in all years from 1730, by far the heaviest in those ending at Michaelmas 1735 and '37. Yet in those years there were estate outgoings which cannot be attributed entirely to the landlord's desire to prevent farms falling into hand. Forty pounds were "Allowed towards building a New Rickhouse 1738 as per Agreement on Farmer Morgans taking an advanced Rent," and elsewhere smaller sums were spent on improvements, notably in 1735 and '36 on breaking up Broughton Common Down.

During this depression there were other attempts to increase production. The floating of some water meadows has been noticed. In 1745 a Stoke Charity farmer whose affairs were in straits considered planting 500 acres of 'Cinque Foyle' and the quite exceptional area of 100 acres of hops.³ Some sheep stints (but not those of great cattle) were raised far beyond the accepted carrying capacity of the common downs. For instance, Barton Farm, Weston Patrick, carried a stint of 160 sheep on Broad Down from 1719, but a 'concealed' increase in folding was achieved by temporarily reducing the farm's acreage, between 1733 and '47, from sixty to forty-five acres.⁴ At King's Somborne the Court Baron raised the long-standing stint of forty sheep per yardland to forty-four in April and fifty-two in October 1735. This was reduced to fifty in May 1736, but the level of forty was not regained until 1741.⁵ This abrupt raising of stints acknowledged the vital influence of the flock on the harvest, perhaps of wool as well as of grain, since the prices of both were low in the 1730's. It is possible that all these examples were attempts to combat ruinously low prices by increasing production. The response of the supply curve of aggregate agricultural output to falling demand is slow even today. In the first half of the eighteenth century labour would account for the largest share of farm production costs; it would be

¹ G. E. Mingay, 'The Agricultural Depression, 1730-50', *Econ. Hist. Rev.*, Ser. 2, VIII, 1955, pp. 323-38.

² Nottingham University Archives, Manvers Collection, Rentals 4344-48; 4509-48. The bad years in the Hampshire Chalkland may be extended until at least 1747. For a large farmer at Compton 1744 was the worst year in the period 1744-60, and the Rector of Compton abated the tithes, "in consideration of y^e bad Season & cheapness of corn." See J. S. Drew, *Compton, near Winchester*, 1939, p. 120.

³ Papers relating to tenancy of Hants manor of Stoke Charity, HRO: 18M54/Box E, pkt. A.

⁴ Bolton Collection: Leases for Barton Farm, Weston Patrick, HRO: 11M49/447.

⁵ Extracts from presentments to Court Baron of King's Somborne concerning stints per yardland, 1724-50, HRO: 2M37/208; Miscellaneous Papers relating to Brook, Eldon, etc., c. 1750-1800, HRO: 2M37/127.

largely family labour, the 'opportunity costs' of which would be effectively nil in times of depression and unemployment. As purchased inputs would be few, and in any case cheaper at such times, and as fundamental shifts in demand might be masked at first by unfavourable weather, efforts to offset lower prices by actually expanding output might not have seemed irrational.¹

At the end of the eighteenth century agriculturists still claimed to be convinced of the necessity of the sheep-fold. Much of this acclaim was retrospective and was prompted by the decline in the old folding system brought about by the vast conversion of sheep-walk to tillage. This extension of cultivation was the result of private rather than parliamentary enclosure. Of the total county area only 6 per cent was affected by Acts enclosing open field and only a further 5 per cent by those concerning the 'waste'.²

The aim of those who financed parliamentary enclosure in chalk Hampshire was less the taking-in of new ploughland than the creation of compact and private holdings from common field strips. On this the Articles of Agreement for an enclosure in the Chalkland edge parish of East Dean in 1809 are especially clear. "The Parts and Pieces of Individuals in the . . . Fields lye so dispersed & intermixed with the lands of others as not only to render the same inconvenient to the sev. Prop^rs & Occupiers thōf but Detrimental to good Husbandry & in their present Situation are incapable of any Improvem^t & there are also within the s^d Parish of East Dean some old Inclosures & the dividing & lay^g the Old Inclosures near would be a considerable Advantage to all the Proprietors interested therein."³ The proprietors at another enclosure went so far as to enter into a bond for £200 to allot one of their number his new enclosure next to his existing closes.⁴

On the enlarged and private farms which parliamentary enclosure thus tended to form the trends of the market for farm products could be followed more nearly than on the jumbles of closes and open-field strips which they superseded. In the late eighteenth century this implied a shift towards grain production, as Arthur Young's 'Minutes of Inclosures' in Hampshire suggest. After the enclosure at Monk Sherborne Young noted, "Corn. Has not increased much," whereas sheep had decreased. At Up Nately corn had increased while sheep had merely "not lessened," and at Basingstoke corn had "Very greatly increased," but sheep, Young was obliged to hedge, "The

¹ Cf. J. K. Galbraith and J. D. Black, 'The Maintenance of Agricultural Production during depression: the explanations reviewed', *Journ. Polit. Econ.*, XLVI, 1938, pp. 305-22, and D. E. Hathaway, 'Agriculture in an Unstable Economy Revisited', *Journ. Farm Econ.*, XLI, 1959, pp. 487-99.

² W. E. Tate, 'Field Systems and Enclosures in Hampshire', *Papers & Proc. Hants. Field Club*, XVI, 1947, p. 263, agreeing with estimates by Prof. Gonner and Dr Slater.

³ HRO: 12M37/555.

⁴ Enclosure at Binley, St Mary Bourne, 1743, HRO: 3M54/1.

number, probably, lessened; but the produce in value being so, is questionable.”¹

The effects of parliamentary enclosure on agricultural production were therefore of a similar quality to those of the contemporaneous private enclosure of sheep-walk. It is, however, in the latter, affecting so much greater an area, that the major changes of the century must be sought. Nevertheless, the numbers of Enclosure Acts do provide a rough index to the rate of all enclosure, for some downland was included in many Acts aimed more specifically at open-field. Under the same market influences a broadly similar rate of progress must be assumed for public and private enclosure, although difficulties of administration probably retarded the former a little by comparison. The increase of enclosure is shown by the passing of nine Acts relating to parishes wholly or partly on the chalk from 1709 to 1773 inclusive, fourteen from 1774 to 1792, and twenty-five from 1793 to 1815. This acceleration is not altered by the inclusion of formal private enclosure agreements. The ultimate direction of the movement is evident in that five of the eight Acts passed in 1809–12 dealt exclusively with the ‘waste’.

The crucial importance of the large-scale cultivation of sheep-down hinged on the land-utilization balance of many Chalkland parishes and farms. Like the attenuated parishes, many farms held in severalty stretched from narrow valley to untilled hill pasture. It was “the favourite idea among the down farmers, that no farm can be advantageously disposed for the general circumstances of that country, unless it has water-meadow at one end, and maiden down at the other.”² This ideal balance was to be upset, as the profitability of grain farming grew, by the piecemeal conversion of sheep-down to tillage on individual farms. The shift is symbolized on Lord Bolton’s estates by the contrast between 1660, when permission was granted to make a rabbit warren, and some year between 1783 and 1799, when a 285-acre warren was destroyed to make an arable farm.³ Enclosure of downland for permanent arable cultivation was taking place in the late seventeenth century,⁴ more rapidly from the mid-eighteenth, and fastest during the Napoleonic wars. Enclosure for other purposes—to carve pasture from the Clay-with-Flints scrub which was nearest to true waste, to protect coppice, or to impark—was by comparison insignificant.

Compared with the evidence for parliamentary enclosure, that for the en-

¹ *Annals of Agriculture*, XLIV, 1806, pp. 427–8.

² C. Vancouver, *General View of the Agriculture of Hampshire*, 1810, p. 78.

³ Nether Wallop Estate Papers, HRO: 11M49/466; Register of Copyhold Leases, 11M49/85.

⁴ e.g. at Chilbolton and Shipton Bellinger, F. R. Goodman, *Reverend Landlords and their Tenants*, 1930, pp. 38–9.

closure and cultivation of downland is fragmentary, but its sum is impressive. The commonest clues are incidental notes that certain parcels of arable were formerly downland, for example, "2 acres of arable at Old Down,"¹ or "New Down—arable,"² or "The two(?) meadows. . . That next Stockbridge is now plowed."³ Isolated references in modern works are not infrequent, for instance to the "field, known as Breachfield, situated on a hill about a quarter of a mile north-east of the village of St Mary Bourne; the field having formed part of Eggbury down till 1772, when it was broken up."⁴ This example shows the elements of the process—the first cultivation of an elevated down in the late eighteenth century giving rise to a field-name typically associated with the ploughing of virgin land. A complete survey of literary evidence would be a considerable task, although a useful chronology of the movement might be obtained by its collection for selected groups of parishes.⁵ To demonstrate the occurrence of the process in the eighteenth century ample references are to be found in leases, farm accounts, and estate records. Leases are especially useful. They may reveal indirectly the spread of cultivation, as at Hurstbourne Tarrant, where four hundred acres of woodland and a similar acreage of furze and heath were tilled between 1778 and 1816. Alternatively, they may specify parcels of sheep-down which tenants might plough without penalty—e.g. part of Northbrook Down, Micheldever, in 1737, common down attached to Compton Farm in 1745, and forty acres of Peach Down, Kingsclere, in 1809.⁶

Actual proposals and agreements to break up downland are direct evidence. An incomplete, probably late seventeenth-century, paper endorsed "Nether Wallop—about breaking up th Downs," states that "The Tenants of Wallop would break up 50⁽¹⁷⁾ acres of the Downs & pay my Lord an acknowledgement for it, it is the Course pt of the Down lying beyond the Salisbury road other lords doe permit the same thing & have some. . ."⁷ A 1740 proposal "relating to the breaking up & inclosing part of Compton Down" concerns four hundred acres leased by various persons from the Dean and Chapter of Winchester, who asked £1 per acre to license tillage. At this

¹ Lease of lands at Broughton, 1773, HRO: 2M37/358.

² Noted on a parcel of 165 acres, surrounded by downland, on a map of allotments to heiresses of Roake Manor, Broughton, in the possession of Rev. R. E. Langdon.

³ Note of letting a down, 1755, HRO: 2M37/150.

⁴ K. E. Innes, *Hampshire Pilgrimages*, 1948, p. 42.

⁵ Downland in the Hampshire Chalkland is at present being plotted from early nineteenth-century maps by Mr M. C. Naish at University College, London.

⁶ HRO: 2M37/Hurstbourne Tarrant, 28, 62; 2M37/53; 2M37/93; Southampton University Library, Abstracts of Torr & Co. leases.

⁷ Nether Wallop Estate Papers, HRO: 11M49/466.

price the Compton tenants were licensed in 1741, when they also agreed to enclose the common fields, "to burn, bake, plough, and convert to tillage 21 acres of downland." The new fields were called 'Bakelands'.¹

A detailed scheme for cultivating sheep-downs on Chalton Manor was advanced in 1756.² The duke of Beaufort's tenants at Blendworth petitioned for further licence to plough Blendworth Down, on which they claimed "an immemorial customary Stinted Right of Common of Sheep," for 742 animals on 304 acres. Permission was requested to cultivate 209 acres; the remaining 95 acres were hangers, the steepest slopes, which the margin of cultivation had not reached, and were deliberately excepted. Agreement was forthcoming. Of the tenants on the manor, those at Catherington and Blendworth who had "lately" received licence to break up common downs were to be indulged in a forty-two-year repetition. Tenants at Clanville and Chalton were to be granted similar rights if they desired them—at Clanville for 400 acres and at Chalton, "such a Quantity as they shall judge convenient and beneficial to be broke up." This points to the final approval of permanent cultivation after a trial period, and shows the tenantry unanimously willing to sacrifice grazing rights to the plough in a year when wheat prices were rising steeply.

The inducement to sow wheat on maiden downland was considerable, despite the high initial cost of paring and burning the sward. No reliable yield figures are available, but crops were certainly far above the average on the chalk hills at first, although dropping subsequently. All the signs point to an expansion of the arable acreage in this way as the eighteenth century advanced. It is not suggested that this took the form of a smooth upward curve, but much detailed evidence is required before short-term variations in the rate of progress are distinguished.

¹ HRO: 18M54/F.1 and Box H, pkt. F, No. 15. See also J. S. Drew, *Compton, near Winchester*, 1939, p. 119.

² HRO: Chalton Manor Estate, Box 2/3, 4, 5. Dr Joan Thirsk informs me that she has found instances elsewhere of the temporary cultivation of common pastureland by agreement between manorial lords and their tenants. Dr Thirsk refers particularly to an agreement in the 1670's between the lord of the manor of Penkridge, Staffs., and his tenants for the tenants to plough a part of the common for five years and then allow it to revert (Staffs. Record Office, D260, 8, 1), and quotes R. Lowe, *General View, Notts.*, 1794, p. 9: "it has been besides an immemorial custom for the inhabitants of townships to take up breaks, or temporary enclosures of . . . perhaps from 40 to 250 acres, and keep them in tillage for 5-6 years." Cf. also H. P. R. Finberg, *Tavistock Abbey*, 1951, pp. 32-5, 105. The Hampshire agreements, Dr Thirsk suggests, may refer to the continuation of this practice into permanent cultivation. The introduction of turnips, clover, and other green crops made permanent cultivation of the poorer downland possible. See J. Worlidge's letter of 1682 in J. Houghton, *Husbandry and Trade Improv'd*, 1728 edn., IV, pp. 141-4.

So marked a shift in the balance of land utilization had serious repercussions throughout the farm economy. The especial fears of contemporaries were that successive grain crops would exhaust the poorer soils and that the shrinkage of downland would mean fewer sheep to be folded on a growing arable acreage. The former apprehension proved in the event unjustified, but the literature to which it gave rise indicates the new emphasis on grain production. This swing to arable farming may be related reasonably to the late eighteenth-century rise in the price for wheat, since wheat was usually the first and often the subsequent crop on freshly broken land. Provident farmers followed with barley, oats, and two seasons' ryegrass before reverting to wheat, but opportunists sowed as many 'white straw' crops as the land would bear. Particularly during the Napoleonic wars, wheat prices were sufficiently high to induce the most cautious to crop hard and to encourage the profiteering, the reckless, or those whose tenancies were running out to take all from the land. This was reflected in the contemporary concern, although there is no evidence of widespread or persisting soil-exhaustion. Temporary local conditions made the threat seem real, and even Young, who approved the cultivation of downland, was angered by fields reduced to "a wretched state," where, tempted by "a great sudden fertility" to be "bad farmers for present profit," some "bad managers have, on first breaking up the down, taken more than three crops, sowing as long as the land would yield."¹

As grain prices soared, so observers became more disquieted. An estate agent noted of New Down Farm at Stratton in 1799, "the tenant is too much disposed to sow the land in a greater proportion than it ought to be; it would pay her better if less of the Down land were in tillage and more of the poorest parts of the farm either in sainfoin or laid down with artificial grasses. Some limit to the cropping upon this estate in general, as well as here, would be highly proper and useful."² Another agent, valuing Gerrard's Farm, Nether Wallop, in 1803, claimed that it had been "like most others in that country... rather improperly treated by the practice of burning the Land, and sowing too many Crops in succession." He considered much of the farm's down too shallow to sustain burning and cropping, which was "only a present advantage, with certain ruin in future."³ By 1810 Charles Vancouver, the Board of Agriculture surveyor, was outspokenly criticizing the "madness, extravagance, and folly" of all who broke up downland.⁴

¹ See *Annals of Agriculture*, xxxiii, 1795, and 'postscript' to A. & W. Driver, *General View of the Agriculture of Hampshire*, 1794.

² A. B. Milner, *History of Micheldever*, 1924, p. 245.

³ Valuations, HRO: 33M57/154 and 156/6, 8.

⁴ Vancouver, *op. cit.*, pp. 55, 58, 78, 80.

Nevertheless, the more extensive system of grain-growing spread. It was made possible by the use of various rotations akin to the Norfolk four-course and by resting the land with sainfoin and clover leys. Buildings for threshing and manure storing were erected at the down ends of the elongated farms, thus saving journeys from the main farmstead by labourers and by the flock, which could be concentrated to fold the better 'home' arable.¹ Ultimately, the success of the general cultivation of the downs was sealed by establishing on them entirely new farms, named Down or Warren or New Barn. The physical enclosure of the downs, albeit in huge fields, by quickset hawthorn hedges and beech shelter-belts marks this agricultural expansion as a most significant stage in the development of the Chalkland landscape.

III

The other fear provoked by the extension of tillage—a decreased number of folding sheep—was better founded. Awareness of the trend was shown in a query circulated in 1785 by the Odiham Agricultural Society, asking anxiously or hopefully, "How far can a Tillage System by means of artificial Grasses and Roots be made to support a Flock without natural Pastures or Sheep-Walk?"² Another sign of the growing need for an alternative to natural pasture may be seen in the 'boom' in water-meadow construction between 1780 and 1830.³ It might be expected that turnips and ley grasses would have offset the shrinkage of downland, but in practice they did not completely compensate. Sheep had been fattened on turnips for the London market well before the improvement in the Southdown and other mutton breeds, but the old breeds were nevertheless primarily grassland animals. The numerical drop in these sheep has been overlooked, partly because the total in the county was always impressive (for the Southdown spread during the horned breed's swiftest decline), and partly because Hampshire sheep fairs remained in the forefront, although largely as entrepôts for western-bred lambs bound for fattening pastures in the home counties. Yet in 1794 a decline of one-third in the county's sheep population was estimated and was attributed to the enclosure and ploughing of sheep-walks.⁴ At this date

¹ See e.g. Milner, *op. cit.*, pp. 241–5.

² *An Account of the Odiham Society for the Encouragement of Agriculture and Industry*, n.d. [1785], p. 49. Simultaneously the Society offered premiums for enclosure, the largest being for the enclosure of 'waste'.

³ Mr P. G. H. Hopkins, personal communication. It is unsafe, however, to advance as further evidence of concern lease clauses demanding prohibitive rents for pasture converted to tillage. These were the accepted means of maintaining the pasture-arable ratio, and were particularly important in this district, where good pasture was ever scarce.

⁴ A. & W. Driver, *op. cit.*, p. 22.

Young, who thought Hampshire better sheep country than Norfolk or Suffolk, claimed the county was understocked. In 1798 Marshall said, "the long-established breed of Wiltshire and Hampshire are routed, in every quarter; and may soon be extinct."¹ As late as 1810 the ubiquitous rotations involving turnips and green crops, the recently introduced swedes, and the "still partial" introduction of Southdowns had not compensated for "the great deficiency of sheep stock" arising from "the improvident destruction of the former sheep-walks."²

Although extensions of grain production characterize the Napoleonic war period, there was some redress in a similar expansion of store and mutton production. Growing demand for mutton prompted Hampshire farmers to adopt the Southdown sheep in the 1790's. A flock was purchased in 1792 by W. P. Powlett of King's Somborne, a member of the Board of Agriculture, on Young's recommendation. By 1795 both men were convinced that the experiment had demonstrated the breed's superiority, and Young was able to support this conclusion—which he had embraced in advance—by calculating that at best horned sheep gave only the profit of the fold. Southdowns, he admitted, were dear to buy, but three, he claimed, could be run for two of the old breed. Vancouver observed the ratio as five to four.³

Early mentions of Southdowns in Hampshire come from the south-eastern parishes flanking the South Down Hills—from Soberton in 1799, from Hambledon and Buriton in 1801.⁴ In the former year, with the main spread beginning, Thomas Edwards of Hunton bought two Southdown rams and two hundred ewes locally and one ram from nearby Longparish. Edwards was soon buying Southdown rams in south-east Hampshire and Sussex and selling them in his native north-western corner of Hampshire.⁵ In 1801 Thomas Terry, squire of Dummer, bought 300 Southdown ewes at Lewes, with "more than a proportionate number of rams" to cross with his Hampshire ewes.⁶ Terry and his son faced ridicule at local markets, but within seven years opinion completely changed in their favour. By 1815 the Southdown, or its cross on the Hampshire ewe from which the Hampshire Down derives, was the dominant Chalkland strain.

The spread of swedes followed that of Southdowns. At Buriton in 1801, "Swedish turnips have been introduced and highly approved of."⁷ They

¹ W. Marshall, *The Rural Economy of the Southern Counties*, 1798, II, p. 347.

² Vancouver, *op. cit.*, pp. 365-74.

³ Vancouver, *op. cit.*, p. 374.

⁴ *Hampshire Repository*, I, p. 76; II, p. 197.

⁵ Thomas Edwards's Account Book, 1790-1805, HRO: 2M37/340.

⁶ A. M. W. Stirling (ed.), *The Diaries of Dummer*, 1934, p. 133.

⁷ *Hampshire Repository*, II, p. 212.

were introduced at Dummer in 1802 and at Hunton in 1803.¹ There was a causal connection between the two innovations. Southdowns were admirably suitable for a period of contracting grassland since they were folded and fattened on arable crops. Their successful overwintering thus demanded a fodder crop which would bridge the 'hungry gap' between the last turnips, which kept badly during frost, and the first bite of watered grass. Swedes filled this gap, since they kept better than turnips and could be reserved until these had been fed off. It may be suggested that the nation-wide spread of swedes, which has been described as only occurring in the first decade of the nineteenth century although their properties had been known for years,² was much influenced by the wide substitution of arable for grass sheep.

The grass flocks of the horned breed had been suited above all else for the fold. The lambs were forced for sale at Weyhill Fair at Michaelmas, but otherwise mutton and wool production left ample room for improvement. Southdowns, by contrast, were fatter, producing more lambs, better carcasses, and more, shorter-stapled, wool. Their disadvantages arose from the higher costs of managing and feeding arable sheep, especially the great expense of growing roots. Shepherding costs rose, since fewer sheep could be tended when permanently folded than when loose on the downs. Shepherds commanded wages higher by half than labourers, with still higher rates at lambing. The capital cost of a Southdown flock was high, and altogether sheep became an expensive item in farm budgets. Probably only the example of the large class of squires and wealthy tenants, the overall profitability of wartime farming, and the growing demand for mutton made feasible so quick and complete an introduction of Southdowns. The cost of their maintenance was to become a matter of moment after 1815.³

IV

Another change in the cost structure of Chalkland farming during the Napoleonic wars was due to difficulties of labour supply. Wages were raised early, as provision prices mounted and the lot of the private soldier, which it was thought advisable to equal, improved.⁴ Attitudes towards labour were noticeably less benevolent after the failure of the Peace of Amiens, when

¹ Stirling, *op. cit.*, and HRO: 2M37/340. Thomas Edwards's accounts suggest growing pressure on his fodder supplies as he increased his sheep stock in the first years of the nineteenth century. He began to pay other farmers to winter some stock, bought the feed of Hunton Down, and in 1805 that of 6½ acres of turnips, and began to purchase rape and swede seed.

² N. Harvey, 'The Coming of the Swede to Great Britain', *Agric. Hist.*, xxiii, 1949, pp. 287-8.

³ For the main features of the system centred on arable sheep see the description of the similar Norfolk four-course in H. G. Sanders, *Rotations*, M.A.F.F. Bulletin 85, 1954, pp. 7-9.

⁴ Enquiry into the General State of the Poor, 1795, *Hampshire Repository*, 1, 1799, p. 19.

military requirements and war-work at high piece rates (notably in Portsmouth dockyard) depleted the agricultural labour force and left the remainder discontented.¹ Between 1801 and 1811 the proportion of Hampshire's population engaged in farming fell, precisely when efforts to expand production might have absorbed an increase. The total population of the 148 Chalkland parishes increased by only 2,740 (compared to 8,724 between 1811 and 1821) and the population in 49 parishes actually decreased.² The farm labourer's weekly wage rose by three or four shillings. With the expensive parochial administration and the current provision prices the £50,000 which the Chalklands population of nearly 60,000 spent on poor relief in 1809 may have gone to support only the transient, the unemployable, and those who were jobless in winter.

Hands were at a premium for harvest, and from 1802 Thomas Edwards of Hunton was glad to engage soldiers to help reap his wheat.³ As Southey explained, "the country is mostly down, recently enclosed, and of wonderfully thin population in comparison of the culture. Indeed harvest here depends upon a temporary emigration of the western clothiers."⁴ Another farmer, James Edwards of Horsebridge, was troubled by the restlessness and unreliability of labour; he began to board out his men, acting on a clear intention of avoiding the direct impact of rising provision costs.⁵ The increasing cost of labour, as much as the growing profitability of grain production, must have induced the investment in threshing machines, which by 1808 had "been erected of late years, and at a very heavy expense, in many parts of this county."⁶ Thereafter labour for threshing by flail, the main winter occupation, became increasingly redundant.

V

Hampshire Chalkland farming evinced many signs of a boom between 1793 and 1815. Farmers needed little urging to expand their businesses and may have borrowed heavily on the expectation of continuing high prices for farm products.⁷ The Hampshire Agricultural Society grew from the annual

¹ Vancouver, *op. cit.*, pp. 374-88.

² See Abstracts of Censuses and Returns, 1801 and 1811; and Table of Population, 1801-1901, in *V.C.H. Hampshire*, v, pp. 435-50.

³ Account Book, 1790-1805, HRO: 2M37/340.

⁴ R. Southey, *Letters from England*, ed. Jack Simmons, 1951, p. 42.

⁵ Farm Account Books, HRO: 2M37/341 (1800-5) and /342 (1805-9).

⁶ Vancouver, *op. cit.*, p. 106. This was written in 1807-8. Cf. W. H. Chaloner, 'The Agricultural Activities of John Wilkinson, Ironmaster', *Agric. Hist. Rev.*, v, p. 51.

⁷ A tenant of Sir Henry Tichborne borrowed £2,000 from him and another tenant £2,573 on stock at entry to an additional farm.—General Account of the Hampshire Estates, 1795-1817, HRO: 37M48/10. Thomas Edwards borrowed a total of £700 between April 1799 and July

wool exhibition at Magdalen Fair, Winchester, and local societies multiplied. The true boom was probably short-lived, as costs soared and the burden of taxation became weightier. There was no rebuilding to match those which locally characterize the mid-eighteenth and mid-nineteenth century agricultural expansions. Real profits were doubtless smaller than wheat prices, farm turnovers, or the alleged appearance of a claret-drinking, fox-hunting tenantry might suggest.

Yet, although insubstantial, the boom carried to a hasty conclusion the gradual developments of a half century. The plough made immense inroads into the downland and grassland flocks dwindled. Sheep began to contribute more than the benefit of the fold and store animals—more mutton, wool, and store lambs. A labour-saving machine of general application was introduced. Last, but not necessarily least, a new acceptance of progressive change and rising living standards was born in the farming community. The superstructure of Chalkland agriculture came by 1815 to rest on sky-high prices for wheat and mutton. This transition and increase in scale had been bought only at high and sometimes continuing cost. The shifts in the relationships between farm enterprises were fraught with significance for the coming depression.

In contrast to 1715, the accent in 1815 was on the greater sale of sheep products and a more extensive grain production. Changes in techniques and costs had been wrought and could not be easily reversed. Thus, although 'sheep-and-corn' certainly applies to Chalkland farming at both dates, it neglects the essential economic and technical distinctions between them.¹ Similarly, its use to describe farming on the 'good sands' of Norfolk, the 'Ryelands' of Herefordshire, and the chalk of the southern counties, fails to draw the necessary distinctions between dissimilar systems.² It may be urged that the acceptance of popular descriptions of farming systems should be replaced by scrutiny of their economic features in each locality and at every period. From this an appropriate terminology for the phases of change should emerge.

1800, probably for land purchases at Broughton.—Account Book of Thos. Edwards's expenses, 1789–1800, HRO: 2M37/339.

¹ On the contrasting structures of Chalkland farming (in Wiltshire) in recent periods of prosperity and depression, see A. H. Maunder, 'A Study of Farming Change', *The Farm Economist*, VII, August 1953.

² Cf. A. Simpson, 'The East Anglian Foldcourse: Some Queries', *Agric. Hist. Rev.*, VI, 1958, p. 88. A cursory examination of evidence for Berkshire, Wiltshire, and Dorset—where the store sheep production also pivoted on Weyhill Fair—suggests that the Hampshire changes were, with local variations, typical of the whole Wessex Chalkland. Cf. G. Slater, *The English Peasantry and the Enclosure of Common Fields*, 1907, pp. 234–5.

The Wheat Act of 1932

A Forerunner of Modern Farm Price Support Programmes

By J. A. MOLLETT

INTRODUCTION

THE 1932 Wheat Act (22 & 23 Geo. 5, Ch. 24) deserves a special place in the history of twentieth-century British agriculture. Its passage marked the beginning of a long series of Acts generally designed to improve the relative income position of farmers and farm-workers. It also introduced a system of 'deficiency payments' to growers which has become the chief means of subsidizing the great bulk of British agricultural output. A study of the experience initiated in 1932 should help to reveal the merits and demerits of this type of subsidy. It should also show how political thinking about farm subsidies has changed since the early 1930's.

Government support for wheat prices introduced by the Act in 1932 was essentially a matter of giving relief to practically bankrupt wheat farmers, mainly in the eastern counties of England. At that time there was no shortage of wheat; quite the contrary. Britain was the centre of the world wheat market. Well over 90 per cent of the wheat consumed for food was imported. British wheat contributed only one-sixth of the total used for human and animal consumption. It was generally accepted to be in Britain's best interests to encourage the flow of relatively cheap grain from overseas in exchange for manufactures. The slogan "no tax on bread" had been popular for years, and subsidies for wheat growers had been avoided by successive governments.

However, renunciation of free trade in 1931-2 and the drastic fall in world wheat prices induced the government to place duties on foreign wheat and a levy on all sales of flour in order to provide payments for British wheat-growers. As most flour was either imported or made from imported wheat, this meant that a relatively small levy would bring in an appreciable amount for distribution as 'deficiency payments' on British millable wheat.

In the 1920's it had seemed that wheat-growing for bread would soon largely disappear in Britain. World production had increased considerably. The major wheat-exporting countries were taking rapid advantage of improved methods of cultivation, harvesting, and better strains of wheat, to

give them a greater advantage in wheat-growing as compared with most European countries. However, certain interests did not readily admit the logical end, which was to accept more or less complete dependence on overseas supplies of grain. Numerous attempts were made by official and political organizations to revive agrarian protection, to "stop the drift from the land," halt the decline in arable area, and ensure a "strong agriculture" for defence purposes. The fact that Britain could produce more food if agrarian interests received "proper attention" was of more significance to these interests, mainly dominated by the Farmers' Unions, than that imported food could be bought much more cheaply. However, the change in the political outlook at the end of the 1920's and protectionist policies subsequently adopted helped to alter the political climate, which had previously regarded any form of protection for British agriculture as impossible.

Wheat was the most important cash crop in English farming when the Act of 1932 was passed. It occupied a larger area and was more widely distributed by regions and in rotations than any other arable crop, except oats which were mainly consumed on the farms where they were grown. Farm returns from sale of wheat in the 1920's represented between 4 and 6 per cent of total sales of agricultural produce. Wheat occupied about 10 per cent of the arable area and about 5 per cent of the total cultivated area. It was most important in eastern and north-eastern England, where just over half the wheat was grown.

British wheat, then as now, was a predominantly soft wheat with a low gluten content. It is not very suitable for modern methods of bread-making and is mainly used for livestock feeding, biscuits, pastry, and cakes. The British loaf of the 1930's traditionally contained only a very small proportion of home-grown wheat. The greater part of the grist was high gluten flour from imported hard wheats.

British wheat, being harvested in relatively small lots under varying conditions, is not readily available to mills concentrated heavily in cities on or near the coast, such as those at London, Southampton, Liverpool, and Glasgow, in sufficient amounts and sufficiently uniform in grade to compete effectively with the pick of the world's exported wheats. In addition, domestic wheat generally contains much more moisture. This factor frequently damages the milling quality. British wheat is thus hardly comparable in general texture to most imported supplies, and the method of marketing differs as most British wheat is processed in small country mills while imports are handled at the large port mills.

It should be mentioned, however, that good yields of between one and one and a half tons per acre of soft wheat are common in the drier eastern areas of

England and that in 1932 new strains of hard wheat were already increasing in popularity.

THE WHEAT ACT, 1932

Various alternative measures to assist wheat-growers had been advocated before the 'deficiency payments' scheme was started. The Wheat Act included elements of these proposals which comprised: (i) high tariffs on wheat and flour imports (a tariff on flour imports was strongly supported by British millers), (ii) subsidies on arable or fallow land, (iii) a compulsory milling quota for British wheat (as employed in aid of wheat-growers in Germany, France, and Spain in 1929-30), (iv) a wheat import board, (v) guaranteed prices for British wheat, (vi) import quotas for Commonwealth wheat, and (vii) tariffs on imports, with some Commonwealth preference.

The object of the Wheat Bill was "to provide wheat-growers in the United Kingdom with a secure market and enhanced price for home-grown wheat of millable quality without a subsidy from the Exchequer and without encouraging the extension of wheat cultivation to land unsuitable for the crop."

The enhanced price was to be secured by means of 'deficiency payments' to wheat-growers on the basis of certified sales of millable wheat. The deficiency payment was to be the difference between the average market price of British millable wheat as calculated at the end of each cereal year (ending 31 July) and a "standard price" of 10s. per cwt. Administrative expenses of the scheme were to be deducted from deficiency payments. A secure market for millable wheat was provided by a clause which imposed upon millers the obligation to buy unsold stocks remaining at the close of any cereal year. Any losses or profits arising from the sale of these compulsorily acquired stocks were to be apportioned pro rata among registered millers in proportion to their output for the year. The Flour Millers' Corporation was established in connection with the Act. It had the responsibility of buying and disposing of stocks of home-grown millable wheat remaining unsold late in the cereal year, if ordered to do so by the Minister of Agriculture.

The standard price of 10s. per cwt was not to be guaranteed on an unlimited quantity of millable wheat. The Minister of Agriculture had to prescribe, for each cereal year, the quantity of wheat of this description which he anticipated would be sold. Should the quantity of millable wheat exceed the "anticipated supply" then deficiency payments would be reduced proportionately. The Wheat Bill stated that this anticipated supply was not to exceed 27 million cwt.

Funds to provide deficiency payments were to come from "quota payments," or levies, on all flour sold in the United Kingdom, to be collected from flour millers and importers by the Flour Millers' Corporation and paid

weekly to the Wheat Commission. Special provision was made concerning quota payments on that part of the miller's output which proved, to the satisfaction of the Wheat Commission, to consist only of "meal" for use as animal or poultry feed. If any miller satisfied the Commission that his output during any cereal year would not comprise any flour other than meal, and that the whole of that flour would be consumed as animal or poultry feed, the Commission could grant him a "provender miller's certificate." It exempted the miller from liability to quota payments on his output of flour during that year. The certificate could be revoked, however, if at any time the Commission ceased to be satisfied. Special provision was also made for the repayment of quota payments in respect of flour exported and shipped as stores.

The Minister of Agriculture had the chief responsibility of putting the provisions of the Act into effect. He had to make Orders prescribing the average price of home-grown millable wheat, the anticipated supply of such wheat, and the amount of quota payments, or the cessation of these payments. Any such Order could be annulled by either House of Parliament within twenty-eight days after it had been laid before Parliament.

The main burden of administering the Act fell on the Wheat Commission which was specially formed for this purpose. It was set up as a corporate entity and not formally attached to the Ministry of Agriculture—although the Minister had to approve its bye-laws. The Commission consisted of nineteen members, all appointed by the Minister of Agriculture. It had a paid chairman and vice-chairman and seventeen unpaid members.

Wheat-growers had to register with the Wheat Commission in order to receive deficiency payments, giving details of their farms and the area under wheat. After each sale a registered grower had to apply for a "wheat certificate" from an authorized merchant. This certificate had to show the quantity, price, and other details of sale and delivery. It had to state that the wheat sold was of the last crop, grown on the specified farm occupied by the registered grower, sold as represented, and of millable quality.

The quality of wheat delivered was determined by an authorized merchant, who applied the standard prescribed by the Minister of Agriculture as laid down in the 1932 Act. Millable wheat was "wheat which is sweet and in fair merchantable condition, commercially clean as regards admixture and tailings, and commercially free from heated or mouldy grains or objectionable taint, and capable of being manufactured into a sound and sweet flour fit for human consumption having regard to the customary methods employed in the milling industry for cleaning and conditioning wheat."¹ An

¹ Ministry of Agriculture and Fisheries. *Report of the Wheat Commission upon the Administration of the Wheat Act, 1932*. Economic Series No. 45. (London: H.M.S.O., 1938), p. 8.

appeal could be made to a regional arbitration body, called a "local wheat committee," in any disagreement about wheat quality.

The standard price of 10s. per cwt was fixed by the Act for the first three years of operation. In 1935 a committee of three was appointed to review the standard price in the light of general economic conditions and those affecting agriculture. It reported that no change in standard price was needed, but recommended that this price be reviewed regularly at three-year intervals.¹

Ten shillings per cwt was not high in relation to comparable prices of British wheat between 1922 and 1930. The average price had not been lower than 9s. per cwt in any year of that period. It had been above 10s. per cwt in five of those years. The price fell to 5s. 8d. per cwt in 1930-1, however, or about half the level of the future standard price of 10s. per cwt.

In the debate on the Wheat Bill the Minister of Agriculture stated that "if we fix the (standard) price too low, so that the great majority of growers could not produce wheat without loss" the Bill would be of little use; on the other hand, "if the price were too high, wheat cultivation would be extended to land unsuitable to wheat production and for an excessive amount to be required in quota payments from millers and importers of flour, and ultimately from the consumer."²

Some doubts were raised in this debate whether the standard price was not too high. Lady Astor asked the Minister: "whether in fixing the guaranteed price of wheat at 45s. (per quarter) in the Wheat Bill, he has aimed at giving a fair profit to those who grow wheat in the country at the cheapest cost of production or at the average cost of production." The Minister replied: "In fixing the standard price of 10s. per cwt, careful consideration was given to all available information concerning cost of production. That figure was selected as likely to afford a measure of assistance to growers of wheat generally who are faced with the present abnormal conditions and without encouraging an extension of wheat to unsuitable land." Lady Astor: "Does the right honourable Gentleman think that paying a subsidy for wheat will not have the effect of encouraging farmers to grow wheat who have never grown it before and never will grow it economically?" The Minister: "The Noble Lady must not assume anything of the kind."³

This kind of discussion frequently neglected the fact that wheat-growing with relatively attractive, guaranteed prices would readily displace some

¹ Ministry of Agriculture and Fisheries. *Report of the Standard Price Committee*. (London: H.M.S.O., 1935), Cmd 4932.

² *Parliamentary Debates: Official Report*. Fifth Series, Vol. 262, Cols. 965-6.

³ *Parliamentary Debates*, Vol. 262, Cols. 1975-6.

other grain crop. Thus, wheat became an 'economic proposition' on so-called unsuitable land.

The maximum quantity of wheat on which the standard price was assured was 27 million cwt (about 50 million bushels), implying a total crop of some 59 million bushels. Only once during the period 1923-32 had a crop of this size been surpassed. If (as it turned out) more wheat was sold than the stated maximum, quota payments would be levied to provide deficiency payments only on that amount. This would not, of course, bring the average price of home-grown wheat up to the standard price.

The flour levy was determined by the anticipated supply of British millable wheat, the estimated deficit between market and standard price, and estimated flour deliveries. It was calculated by the following formula:

$$\frac{\text{anticipated supply of millable wheat} \times \text{estimated price deficit per cwt}}{\text{estimated flour deliveries (sacks)}}$$

which gave the rate of levy per sack of flour. The first quota payment was calculated as follows:

Estimated price deficit		4s. 3d. per cwt
Anticipated supply of home-grown millable wheat	..	19·8 million cwt
Estimated supply of flour		93·5 million cwt

$$\text{Rate of levy} = \frac{19\cdot8 \text{ million} \times 4\text{s. } 3\text{d.}}{93\cdot5 \text{ million}} = \frac{10\cdot8\text{d. per cwt or}}{27\text{d. per sack}}$$

Details of the flour levy are given in the section dealing with the operation of the Wheat Act; at this point, it may be stated that frequent changes in levy rates were discouraged because of their disturbance to the flour trade.

The anticipated supply was a fundamental quantity in the operation of the Wheat Act. It was a factor in the calculation of the millers' quota payment; until the passing of the Agriculture Act, 1937, it determined the limit of liability of the Flour Millers' Corporation with respect to unsold stocks (see p. 32). The anticipated supply also limited the amount of the deficiency payments payable by the Commission to each registered grower.

The Minister of Agriculture was required, after consultation with the Wheat Commission, to prescribe, at or as soon as practicable after the start of each cereal year, the quantity of home-grown millable wheat which he anticipated would be sold by registered growers during a particular year. The quantity so prescribed could be varied by an Order of the Minister made before the end of January in that year, but it was unalterable after 31 January.

RECEPTION OF THE ACT

Apart from general criticism because of its complexity, the Wheat Bill had keen support from the larger wheat-growers in eastern England and the general body of farmers. The latter saw (and rightly) that the Bill was the first move in the direction of general support for farm prices. Political support for the Bill came from the Conservative Party, which had strong agrarian and protectionist sympathies. Tory sentiments favoured the view that cheap bread had been obtained only at the sacrifice of farmers and other workers in agriculture, in the interest of people in the cities. The Tories held the opinion that a helping hand should be given to wheat-growers "who found themselves in a disastrous position because Britain was the last great free market for wheat."

The Labour Party and Free Traders opposed the Bill. They were concerned with the regressive nature of the "excise tax" on flour. They held that the burden of any increase in bread prices as a result of the Bill would fall most heavily on the poor. Nor did those opposing the Bill like the delegation of authority to tax, preferring subsidy payments to come out of Exchequer funds where they would be under the direct control of Parliament. Taxation of a staple commodity such as bread was also hailed as a backward step, especially as the tax would benefit such a very small segment of the population. *The Economist* found it curious that "a government which could not include wheat in its 10 per cent tariff because of its members' pledges not to tax 'staple food' (wheat and meat) and because the possible repercussions on the cost of living might even have endangered 'the safety of the pound,' could within the space of a fortnight introduce a measure which taxes the self-same article 18 per cent by throwing in twenty-nine pages of cuttlefish draftsmanship."¹

Spokesmen for the Labour Party argued that wheat rightly had a small place in British agriculture, that there was no justification for attempting to increase its importance, and that any aid should go to other branches of farming. Fear was expressed that deficiency payments would not go to the farmers most in need, as larger farmers who were perhaps better placed to make adjustments would receive the lion's share of total payments (larger farmers, who include many wheat-growers, can voice their appeals for aid most effectively and had done so in this instance). Also that the net effect would be to maintain or increase rents rather than to benefit wheat growers (what little evidence is available, however, suggests that rents showed little immediate change after the passing of the Wheat Act).

Free traders emphasized the harmful effect of protective measures on

¹ *The Economist*, 27 February 1932, p. 451.

overseas trade. Mr Attlee condemned the Bill as "merely a device for calling a tariff a quota" as there was no incentive throughout the Bill to buy British wheat; it gave "a dole to certain industries divorced altogether from control or from any idea of reconstruction."¹

The Economist declared in scathing terms that "the wheat legislation was, thus, not a protective measure of child welfare for an 'infant industry' like the sugar-beet industry. It was rather in the nature of a national whip-round on behalf of a picturesque village 'ancient,' probably our oldest inhabitant, whose relapse into penury would be a matter of regret but [not] of reproach to us."²

Opposition to the Bill was somewhat lessened by the fact that the maximum deficiency payment to wheat growers provided for only a moderate rise in the price of bread. Supporters emphasized the relief of financially distressed wheat-growers but not the increased production of home-grown wheat.

THE ACT IN OPERATION, 1932 TO 1940

Between 1932 and 1940 the Wheat Act accomplished its primary objective of bringing financial relief to wheat-growers. It also led to a relatively large and sudden increase in wheat production by providing an attractive minimum price and an assured market.

Table 1 summarizes some of the more important data relating to the operation of the Act. The table shows the relative importance of deficiency payments in the different years, the sharp rise in number of wheat-growers in the first three years of the Act—from 77,000 in 1932–3 to 95,000 in 1934–5—in wheat acreage, and the average annual quantity of wheat sold per grower.

Total deficiency payments to wheat-growers fluctuated considerably from year to year as a result of differences between annual average price and standard price, and the quantity on which the standard price was based. These payments, after administrative expenses of the scheme had been deducted, were as follows:

Year	£ Million
1932–3	4.5
1933–4	7.1
1934–5	6.8
1935–6	5.6
1936–7	1.3
1937–8	1.9
1938–9	9.2
1939–40	6.1

Administrative expenses were relatively very small (between 1 and 3 per cent of total flour levies); ranging from £52.7 thousand in 1932–3 (58

¹ *Parliamentary Debates*, Vol. 264, Col. 360.

² *The Economist*, 12 August 1933, p. 313.

weeks) to £68·2 thousand in 1935-6. The deduction per cwt in the different years varied from 0·52d. to 0·68d.

TABLE 1. DATA RELATING TO THE OPERATION OF THE WHEAT ACT,
1932-3 to 1939-40

	Number of wheat growers*	Total area in wheat	Average quantity of wheat sold per grower	Average market price†	Adjusted deficiency payment‡	Total returns§
	(thousand)	(thousand acres)	(cwt)	d per cwt	d per cwt	d per cwt
1932-3	77	1,343	266	64·5	53·3	117·8
1933-4	87	1,745	341	55·6	58·3	113·9
1934-5	95	1,866	379	58·9	45·6	104·5
1935-6	94	1,882	359	69·2	40·2	109·4
1936-7	83	1,805	287	105·9	13·5	119·4
1937-8	77	1,836	319	100·4	19·0	119·4
1938-9	81	1,928	453	54·8	64·7	119·5
1939-40	73	1,766	393	55·2	76·3	131·5
1939-40				70·3	60·2	131·5
1939-40				85·4	46·1	131·5
1939-40				84·2	47·3	131·5

* Growers for whom accounts were opened by the Wheat Commission in any particular year.

† Average price ascertained by the Wheat Commission at the farm-gate.

‡ Deficiency payments were proportionately reduced when the quantity of wheat certified as sold exceeded the anticipated supply; thus, in 1932-3, growers received deficiency payments for 97 per cent of the wheat sold, the corresponding figures for the other years were: 1933-4, 91·3 per cent; 1934-5, 75 per cent; 1935-6, 80 per cent; 1936-7, 100·0 per cent; 1937-8, 100·0 per cent; 1938-9, 93·5 per cent; and 1939-40, 100·0 per cent.

§ The standard price of wheat was 120·0d. from 1932-3 to 1938-9 and 131·5d. in 1939-40.

|| On the outbreak of war, the accounting year for calculating deficiency payments was divided into four seasonal periods in order to compensate farmers who sold their wheat at relatively low prices early in the fall of 1939. The four accounting periods were from: 1 August to 8 September; 9 September to 20 October; 21 October to 31 March, and 1 April to 31 July 1940.

Source: Ministry of Agriculture and Fisheries, *Report of the Wheat Commission upon the Administration of the Wheat Act, 1932. From 1 June 1932 to 31 July 1937*. Economic Series No. 45 (London: H.M.S.O., 1938), pp. 106-7, and data for 1937-8 to 1939-40 from private correspondence with the Wheat Commission.

The statutory limitation on the total deficiency payments curtailed returns from wheat-growing in 1934-5 and 1935-6 and would have exerted a similar effect in 1938-9—if the limit on which the full standard price could be paid had not been raised from 27 to 36 million cwt in the preceding year.¹

¹ The data were as follows: in 1934-5, 75·2 per cent and in 1935-6, 80·2 per cent of total

As Table 1 shows, average annual sales per grower were relatively small, varying from 266 cwt to 453 cwt. Average quantity per grower tended to increase during the eight-year period under review; data which indicate where the increase came from are sparse. It seems very probable that average sales rose as a result of greater quantities from larger and more specialized wheat-growing farms in the eastern counties of England. Certainly the great bulk of deficiency payments went to farmers in that area.¹ No evidence is available to indicate what effect the Wheat Act had upon the amounts of fertilizer applied to wheat. Average yields varied considerably from a record 20.0 cwt per acre in 1934 (compared with 17.4 cwt in 1932) to 16.4 cwt per acre in 1937. A large part of these differences, however, was undoubtedly attributable to adverse or favourable weather at planting and harvest times.

No details are available of the distribution of deficiency payments among different sizes of farms. A later enquiry² not directly related to this matter suggests that about 40 per cent of total deficiency payments went to one-tenth of the growers, and roughly 15 per cent to small growers who were about half the total number.

Although the Wheat Act had the effect of approximately doubling returns from wheat-growing, above what the market would probably have offered, between 1932-3 and 1939-40, farm income did not benefit by as much as this comparison would suggest. Wheat income increased mostly at the expense of income from such alternative crops as oats and barley. Since wheat at import prices contributed only between 3 and 5 per cent of gross agricultural output, the increase in aggregate net income resulting from deficiency payments amounted to between 1 and 2½ per cent, though, of course, on farms where wheat was of special importance, the impact of deficiency payments was much greater.

Although the standard price of 10s. per cwt was not as high as wheat-growers had demanded, it was almost double the market price in 1932. At that time wheat prices had fallen more than most other farm prices. This is shown by the following price indices for wheat, and for all farm commodities between 1927 and 1932.

certified sales, respectively, were eligible for full standard price. The deficiency payment on all sales was thus reduced proportionately. The unadjusted deficiency payments for 1934-5 and 1935-6 were 60.6d. and 50.2d. per cwt, respectively, while the corresponding adjusted deficiency payments were only 45.6d. and 40.2d. per cwt.

¹ K. A. H. Murray, *Agriculture*, United Kingdom Series of the Second World War (London: H.M.S.O., 1955), p. 30.

² D. K. Britton, 'Frequency Distribution in British Agriculture'. Reprint from *The Incorporated Statistician*, Vol. II, No. 3, November 1951.

	1927	1928	1929	1930	1931	1932
Wheat	109	97	94	80	56	56
General index	99	102	99	91	83½	80½

(1927-9=100.) Source: Ministry of Agriculture and Fisheries, *Index of Agricultural Prices* (London: H.M.S.O., 1938), Table 1.

Thus, in 1932 the wheat price index stood at 74 (with the deficiency payment) and 56 (without the payment) compared with the general index of 80½.

Farmers received encouragement to grow more wheat, not only from higher prices, but from a more secure price, compared with prices of barley and oats (that is, until 1937, when prices of these two crops were subsidized) and a certain market. Thus, the resulting increase in wheat acreage—from 1·2 million acres in 1931 to 1·9 million acres in 1934—came almost entirely at the expense of oats and barley. The Wheat Act failed to halt the downward trend in arable acreage, one of its secondary objectives.

At the outset, it seemed probable that the Act would depress British wheat prices. Increased supplies of British wheat of a quality unsuitable for bread-making were expected to depress market prices and widen the traditional difference in price between imported hard wheat and home-grown soft wheat. New methods of bread-making required hard wheats with only a small proportion of soft wheats.¹

A comparison of average prices of British wheat (at the farm-gate) and of all imported wheat (customs duties included) for the period 1932-3 to 1938-9 is given in Table 2.

TABLE 2. AVERAGE PRICES OF IMPORTED AND BRITISH WHEAT
1932-3 TO 1938-9

Year	Imported wheat	British wheat	Price difference
	<i>d</i> <i>per quarter (504 lb)</i>	<i>d</i> <i>per quarter (504 lb)</i>	<i>d</i>
1932-3	315·0	288·0	27·0
1933-4	292·5	252·0	40·5
1934-5	328·5	265·5	63·0
1935-6	364·5	310·5	54·0
1936-7	522·0	477·0	45·0
1937-8	504·0	444·0	60·0
1938-9	297·0	247·5	49·5

Source: *Report of the Wheat Commission*, p. 138, and private correspondence with the Wheat Commission.

¹ Dr A. Salter, M.P., in the debate on the Wheat Bill, estimated that English flour supplied bread for only 860,000 people out of the 44 million in England in 1932 or about 2 per cent of national needs.—*Parliamentary Debates*, Vol. 262, Col. 998.

The relatively limited market for British wheat in bread-making inevitably meant that the greater part of increased supplies resulting from the Wheat Act had to be fed to livestock.

There was a large increase in wheat feeding, either as grain or meal, to livestock in the 1930's. This resulted mainly from the lack of any restrictive provisions in the Act. It did not directly discourage imports. Only in 1936-7 was there any noticeable check in imported supplies and it largely resulted from a decline in exports from the major wheat-exporting countries.

Imports of wheat products (offals) used for livestock feeding, and particularly for poultry, increased from 260 thousand tons in 1930-1 to 691 thousand tons in 1936-7. They remained at about the 1936-7 level until the Second World War began, when they were sharply reduced. Wheat fed to livestock increased from 2.7 million tons in 1930 to 3.8 million tons in 1933-4.

It is interesting to note that in the early years of the Wheat Act, at least, sales of wheat off farms increased proportionately more than production. Thus in 1931 probably no more than two-thirds of production was sold for cash; while the corresponding figure went up to about 95 per cent a year later. Farmers were selling more wheat for cash and collecting deficiency payments. Then they proceeded to buy their own wheat back or cheap foreign wheat, for livestock feeding.¹

Demand for wheat to feed livestock proved to be relatively elastic. This, and the fact that the Wheat Act did not attempt to reduce the feed outlet for millable wheat, were undoubtedly 'safety valves' of the scheme. Other plans to help wheat-growers had contained more rigid provisions which judging from experience in the United States would probably have caused complex problems of 'surplus'.

The demand for feed grain was such that millers had little need to fear that they would be required to buy any unsold stocks at the end of any cereal year. The increased supply of home-grown wheat was readily absorbed by the market. No important difficulties in marketing the increased supplies were reported by the Wheat Commission. The important problem of meeting competition from imports of soft wheat was met by lowering British prices.

The average annual rate of levy per sack of flour varied (see Table 3) from 11d. in 1936-7 to 66d. in 1938-9. The Commission had to keep in mind that frequent or large changes in the quota payment during a particular cereal year were disturbing to the trade. However, the Commission had a difficult task in preparing estimates for twelve months ahead. In spite of

¹ R. G. McCarslaw and A. W. Menzies-Kitchen, 'Effect of the Wheat Act, 1932 on Production', *The Farm Economist*, 1 January 1933, pp. 17-18.

these difficulties, their original estimates proved to be close to the mark and in the first three cereal years only five changes were made in the quota payment. The improvement in wheat prices during 1935-6 and 1936-7, however, necessitated a steady reduction in the rate of quota payment. Three reductions of 6d. per sack (280 lb.) occurred in 1935-6, the rate of quota payment in effect at the end of that year being 3s. per sack. Two reductions of 1s. per sack were made in 1936-7 and a reduction of 6d. per sack in January 1937, the payment being eventually suspended from 18 April to 18 September 1937.

It was clear that the fact of a change being under consideration, the nature of the change, and the date of its introduction, should be kept secret in order to prevent forestalling. On the other hand, it would have been a serious inconvenience to traders if they had not known immediately a change took effect. It was, therefore, arranged that every miller and importer known to the Commission as being regularly liable to make quota payments should be notified by letter dispatched from the Commission and that the National Press should publish an announcement on the morning of the day the new Order relating to quota payments came into force.

As stated earlier, at no time under the operation of the Wheat Act was the Flour Millers' Corporation called upon to buy any unsold stocks of wheat. Under Section 1 of this Act the Minister of Agriculture could require the Flour Millers' Corporation to buy up to $12\frac{1}{2}$ per cent of the anticipated supply in any year. By Section 13 of the Agriculture Act, 1937, the maximum quantity of home-grown millable wheat which the Corporation might be required to buy was limited to 4 million cwt instead of $12\frac{1}{2}$ per cent of the anticipated supply for that year. Under the same Act, the specified quantity on which the full standard price could be paid was raised from 27 to 36 million cwt.

The effect of the Wheat Act on consumers was not so drastic as its critics had forecast. Quota payments collected by the Wheat Commission from millers and importers were practically always recovered by these agents from buyers of flour at the time when the flour was delivered to buyers. About half the total quantity of home-milled and imported flour available (according to the 1930 Census of Production)—about 4·3 million tons—in the 1930's was used by bakers in bread-making, the remainder being used partly in the making of cakes, pastries, biscuits, and other kinds of food, textile finishing materials, dog biscuits, animal or poultry feed; and partly in hotels, restaurants, and private households (including home bread-making). It is not possible to state to what extent the price charged to consumers for articles made from flour (other than bread) was increased as the result of the incidence of the quota payment. The selling prices of these articles are determined

with reference to total costs rather than with reference to one item of cost.

The total price paid for flour used by bakers of bread is, however, directly related to the retail price of bread.¹ It is, therefore, of interest to show how bread prices varied in relation to the price of flour and quota payments.

Table 3 shows average annual flour prices, flour levies, and retail bread prices between 1932-3 and 1938-9. Perhaps the most significant data in this table relate to the fact that when the quota payment was at its highest level, in 1938-9 (66d. per sack compared with only 12d. per sack in the previous year), the price of bread was 1d. per quartern (4 lb. loaf) cheaper than in 1937-8, when, owing to high wheat prices, the quota payment was entirely suspended for a period. The table shows that the heaviest levies were paid (indirectly) by consumers when wheat prices were relatively low. As home-grown wheat supplied only a relatively small part of total flour supplies, a relatively small total levy sufficed for deficiency payments.

TABLE 3. PRICES OF WHEAT FLOUR AND THE RATE OF THE FLOUR LEVY IN RELATION TO THE PRICE OF BREAD, 1931-2 to 1938-9

Year	Average price of flour per sack	Average rate of levy per sack	Total cost per sack	Average price of bread per 4 lb. loaf
	(280 lb) d	(280 lb) d	(280 lb) d	(to nearest $\frac{1}{4}$ d) d
1931-2	276	3*	279	7
1932-3	280	31	311	7 $\frac{1}{4}$
1933-4	264	51	315	7 $\frac{1}{2}$
1934-5	289	51	340	7 $\frac{3}{4}$
1935-6	328	42	370	8 $\frac{1}{4}$
1936-7	455	11	466	9
1937-8	420	12	432	9 $\frac{1}{2}$
1938-9	276	66	342	8 $\frac{1}{2}$

* Estimated, the first quota payment operated from 19 June 1932.

Source: *Report of the Wheat Commission*, p. 138, and private correspondence with the Wheat Commission.

Another factor which lessened the burden, especially on poorer people, was the improving level of employment of the mid- and late-1930's.

It is clear that consumers had to pay more for their bread and other articles made with flour after the Wheat Act. But the net effect of this Act—that is, the effect of larger supplies of British wheat on world prices and the

¹ Changes in bread prices shown in Table 3 were determined to a large extent by the scale of maximum prices for bread recommended by the Food Council, which justified a variation in bread price by steps of $\frac{1}{4}$ d. per 4 lb. loaf when the flour price varied by steps of 4s. per sack. A change in flour price would, according to this scale, justify a change in the maximum bread price only if the effect was to bring the flour price into a higher or lower position in the steps of 4s. per sack for which the scale provided.—*Report of the Wheat Commission*, p. 139.

effect of these lower prices on the price of livestock products—is less clear.

An amending Act to the Wheat Act was passed in 1939.¹ It gave legislative effect to a number of relatively minor amendments which experience had shown to be necessary. Section 2, for example, contained provisions whereby, in the future, any person who purchased growing wheat, or wheat cut but not threshed, was to be entitled to claim deficiency payments when the wheat was sold. Under the original Act, in some instances, sellers of such wheat could not be regarded as the grower and the Wheat Commission had no power to make payments. Quota payments were altered for flour (more commonly termed wheat feed) destined for livestock feeding. Under the amended Act, millers who had previously been exempt from the liability to make quota payments in respect of that part of their output of flour which proved, to the satisfaction of the Commission, to consist only of meal for use as animal or poultry feed, were now liable to quota payments on three-eighths of this meal.

The relatively large addition to wheat-growers' income at the expense of a relatively small burden to consumers resulted from the fact that British farmers produced only a small fraction of the wheat consumed for food in their country. There was some interest in this plan as offering a better means of relieving the distress prevailing among United States growers than the domestic allotment plan. But there were striking differences influencing the application of the two plans. Britain raised less than one-fifth of the wheat it consumed (in the 1930's), while the United States, on the average, raised something like 130 per cent. A levy on flour consumption in Britain which was sufficient to yield a bounty to wheat-growers amounting to very substantial sums per bushel, and in some years more than the market price (in 1933-4, for instance, see Table 1), would in the United States have yielded only a small fraction of this amount per bushel. In order to raise the price to United States growers as much as was done in Britain in the 1930's, the required levy on flour consumption would have been many times as high as the one in effect in Britain at that time—so high indeed that consumption would have been materially affected. In addition, the administration of such a scheme in the United States would have been vastly greater and more complicated—although current price support programmes indicate that administrative problems of this kind can be overcome. Another difference between the two countries was that British wheat was practically all consumed at home while some American wheats were ordinarily exported. Differences of type, quality, and regional position are also much more important in the United States than in Britain.

¹ 2 & 3 Geo. 6, Ch. 37.

THE SECOND WORLD WAR AND AFTER

On the outbreak of the Second World War the government decided for the time being to carry on with the principle of the two Wheat Acts. However, several important changes were made. Market prices were to be regulated by the government and the cereal year was divided into four periods with separate deficiency payments. Another change was that from 5 May 1940, flour levies were suspended and necessary funds to enable the Wheat Commission to function were provided by the Ministry of Food from Exchequer funds.

After July 1940, wheat prices were never lower than the standard price of 10s. per cwt; thus, until wheat was freed from government control in 1953 no deficiency payments were made. The system of issuing wheat certificates and the general operation of the Wheat Commission's organization were suspended. The expenses of the Commission, previously borne by registered wheat-growers, were after 1939-40 carried by the Ministry of Food, largely to preserve the organization of the Commission. In the period of war and post-war controls most of the Commission's staff were transferred to the Ministry of Food.

From September 1939 to August 1953, government purchasing and controlled prices replaced the market price system for practically all agricultural commodities. Wheat, flour, and bread were all placed under price control. A free market for cereals was restored in August 1953.¹ The government played an important part in the purchase of the 1953 harvest in the change-over period from state to private trading. All trade for later harvest was in private hands, deficiency payments making up the difference between market and guaranteed price.

The scheme for deficiency payments which went into effect for the 1954 harvest is largely based on the pre-war pattern.² New features are as follows: no statutory limitation is placed on the quantity on which the full standard price can be paid (although there are provisions to invoke restrictions); the subsidy is paid out of Exchequer funds instead of from a levy on flour; the post-war scheme covers five cereals, wheat, oats, barley, rye, and mixed corn; it is administered by a government department instead of a semi-independent Commission. Another important change is that under the terms of the Agriculture Act, 1947,³ a measure supported by all parties, the standard price of wheat is now considered along with other commodity prices at annual price reviews.

¹ Ministry of Agriculture and Fisheries, *Decontrol of Cereals and Feedingstuffs* (London: H.M.S.O., 1953), Cmd 8745.

² Ministry of Food, *Home Grown Cereals Deficiency Payments Scheme 1954* (London: H.M.S.O., 1954).

³ 10 & 11 Geo. 6, Ch. 48.

Plan of an Agricultural Society and Experimental Farm in Northumberland

By H. CECIL PAWSON

THE title is taken from a printed document in the writer's possession which covers eight large pages and is dated 1797. The document was prepared to provide "Hints for the consideration of the Committee appointed to prepare and digest" the plan as indicated. It would seem that after full consideration the time was not considered ripe for the project, for it was not until 1836 that the Northumberland Agricultural Society—which still continues—was formed, and Cockle Park, the world-famed experimental station, was not established until 1896. The seed for both these developments was surely contained in this earlier proposal.

In 1793, four years earlier than the document under consideration, J. Bailey and G. Culley in their *General View of the Agriculture of the County of Northumberland with observations on the means of its improvement* stated that "There never was an Agricultural Society in this county." They concluded this well-known survey by a reference to "Public Farms," which, they urged, would if conducted by proper persons in every county "tend more towards the perfection of Agriculture in all its branches, than any other measure that has ever been suggested." It seems a fair deduction, therefore, to attribute the plan for Northumberland in some if not large measure to George Culley himself who farmed extensively at that time in the north of Northumberland.

The plan is divided into two parts. "1st. The Nature and Constitution of Agricultural Societies; and 2ndly, the Nature and Constitution of the proposed Agricultural Society, and the Plan for conducting the Experimental Farm." In the second part the leading objects of investigation were defined as follows:

What is the best mode of cultivating Arable Land?

What is the best system for the management of Grass Land?

What are the most useful Implements of Husbandry?

What are the most profitable Breeds of Animals?

What is the best plan for rendering waste or barren Land productive?

These and other matters of prime agricultural importance were elaborated in the plan. It was proposed to secure a farm of from 220 to 440 acres of arable land and from 50 to 300 acres of waste land "according to the amount of subscriptions on which to try the various necessary experiments." It was also proposed to raise the sum of from "2000 £ to 3500 £" by forming a Joint Stock Company through such shares as may be agreed upon. "His Grace the Duke of Northumberland whose zeal in the cause and great property in the county entitle him to every mark of respect to be President of the Society." A Committee of management was to be formed and "As the whole success of the plan must depend on the choice of Manager, too much attention cannot be paid to this important particular." The farm was to be leased for at least a term of fourteen years. Then follows a complete list of the proposed equipment, i.e. live and dead stock.

It is interesting to note that five different breeds of cattle were to be tried: the Short-horned, the Long-horned, the Devonshire, the Galloway, the Kyloe or Highland Scots. The sheep included 10 Dishley ewes at £5 each, 10 South Down ewes at £2 each, 10 Cheviot ewes at £1 10s. each, 10 Heath ewes at £1 10s. each; so it is evident Bakewell's Dishley sheep still held the field. Cleveland, Clydesdale, and Suffolk horses are listed to be purchased at £54 a pair. Pigs were to consist of two of each of the following breeds:

"The large white kind, Berkshire, Chinese, and South Sea."

The cropping was also fully set out. It included turnips and ruta бага (the original name for the swede, hence the term, still applied in Scotland, "bagies"). "Seeds" are listed, including white clover, which would be the cultivated form, with chicory, rib-grass, burnet, rye-grass, red clover, etc.

The various experiments to be tried under the heading of "The Waste Land Department" were listed in the following terms:

1. Liming the Surface.
2. Ploughing merely, and sowing with grass-seeds.
3. Ploughing and Liming.
4. Paring, Burning, and Liming.
5. Paring, Burning, Ploughing, and Liming.
6. Paring, Burning, Ploughing, Liming Dunging or Marling.
7. Experiments with Turnips, Kale, Oats, Rye, etc.

One of the most interesting portions of the document, headed "Conclusion", is given here, excluding the final seven resolutions for implementing the Plan.

CONCLUSION

"Before concluding this Report, the Committee beg leave to submit the following observations respecting the expediency of resolving to carry the preceeding Plan into immediate execution, if, after being thoroughly weighed, improved upon, and corrected, it should be fortunate enough to meet the approbation of the County of Northumberland.

"There are many advantages in its favour at present, which cannot always be depended upon. Not only several of the greatest proprietors in the county, but also many of the most intelligent Farmers in it, whose assistance is so particularly material, have come forward with a degree of liberality and spirit which does them infinite credit. If once, however, that zeal is suffered to fall off, it is impossible to say whether it can again be revived to equal advantage.

"2d. The burdens to which landed proprietors are now subject, render it indispensibly necessary that they should promote the improvement of their property as much as possible, by bringing the knowledge of Agriculture to perfection; much improvement may be effected in a short space of time, in consequence of which both the Farmer and the Landlord, in proportion to their respective interests, must be benefited.

"3d. Nothing but Agricultural Improvements can enable Great Britain to surmount its present difficulties. The effects of the scarcity it lately experienced, it has hardly yet recovered; and were another to take place soon, to the same extent, (which without Agricultural Improvements may be safe) it is impossible to answer for the consequences. Whereas, did we make the most of our soil, we might enrich ourselves by exporting the surplus of our Agricultural productions, the most beneficial source that it is possible for a nation of commercial opulence to possess. On the whole, the Committee beg leave to submit the following Resolutions to the consideration of the Landed Interest of the County."

NOTES ON CONTRIBUTORS

R. B. K. Stevenson, M.A., F.S.A., is Keeper of the National Museum of Antiquities of Scotland (Edinburgh) and author of numerous contributions to archaeological journals.

E. L. Jones, B.A., now Milk Marketing Board Research Scholar at Exeter College, Oxford, is working in the Department of Agriculture on a thesis concerning nineteenth-century farming in Herefordshire.

J. A. Mollett, B.Sc.(Agric.), Ph.D., is an

assistant professor in the College of Agriculture at the University of Hawaii. He has contributed papers to the *Journal of Farm Economics*, the *Canadian Journal of Agricultural Economics*, and other periodicals.

H. Cecil Pawson, M.B.E., M.Sc., sometime professor and assistant director of the Department of Agriculture, King's College, Newcastle, is the author of a life of Robert Bakewell.

List of Books and Articles on Agrarian History issued since September 1958¹

Compiled by JOAN THIRSK

BOOKS AND PAMPHLETS

- ANON. *Chertsey Abbey Cartularies*, vol. II, part 1. Surrey Rec. Soc., vol. XII contd. 1958.
- ANON. *The story of Upminster: a study of an Essex village*. H. E. Priestley, 8 Loten Road, S. Benfleet, Essex. 1958.
- ASPINALL, A., and SMITH, E. A. (eds.). *English Historical Documents, 1783-1832*. Eyre & Spottiswoode.
- ASTBURY, A. K. *The Black Fens*. Golden Head Press. Heffer. 1958.
- ATTWOOD, E. A. *Statutory small holdings in agriculture: a study in government policy with a special analysis of the administration and economic results of small holdings in Wales*. Dept Agric. Economics, University College of Wales. 1958.
- BARNES, T. G. *Somerset Assize Orders, 1629-1640*. Somerset Rec. Soc., vol. LXV.
- BAYLIS, C. F. *A short history of Edgware and the Stanmores in the Middle Ages*. Edgware & Harrow Hist. Soc., 5 Elmgate Gardens, Edgware. 1957.
- BEAN, J. M. W. *The Estates of the Percy Family, 1416-1537*. O.U.P. 1958.
- BOND, L. M. G. *Tyneham: a lost heritage*. Longmans (Dorchester) Ltd.
- CAMERON, KENNETH. *The Place-Names of Derbyshire*. Eng. Place-Name Soc., vols. XXVII, XXVIII, XXIX.
- CELORIA, FRANCIS. *Teach yourself local history*. English Universities Press.
- DENMAN, D. R., SWITZER, J. F. Q., and SAWYER, O. H. M. *Bibliography of Rural Land Economy and Land Ownership, 1900-1957*. Cambridge Univ. Dept of Estate Management. 1958.
- DICKINSON, PAUL, and FISHER, WILLIAM B. *The Medieval Land Surveys of County Durham*. Research Paper no. 2. Dept of Geography, Durham Colleges, Durham Univ.
- DODD, E. E. *Bingley: a Yorkshire town through nine centuries*. Bingley Hist. Publications Committee, Central Library, Main Street, Bingley, Yorks. 1958.
- DODWELL, BARBARA (ed.). *Feet of Fines for the County of Norfolk for the Reign of King John, 1201-15, and for the County of Suffolk for the Reign of King John, 1199-1214*. Pipe Roll Soc., N.S., vol. XXXII.
- DURHAM UNIVERSITY. *Handlist of attested copies of mortgages, conveyances, etc. among the Halmote Court Records of the Palatinate of Durham and Bishopric Estates in the Prior's Kitchen, The College, Durham, deposited by the Church Commission*. Dept of Palaeography, Prior's Kitchen, The College, Durham.
- DURHAM UNIVERSITY. *List of financial and audit records of the Palatinate of Durham and Bishopric Estates from 1659 to 1856 deposited by the Church Commission in the Prior's Kitchen*. Dept of Palaeography, Prior's Kitchen, The College, Durham.
- DURHAM UNIVERSITY. *Handlist of subsidiary manorial documents among the Halmote Court records of the Palatinate of Durham and Bishopric Estates in the Prior's Kitchen deposited by the Church Commission*. Dept of Palaeography, Prior's Kitchen, The College, Durham.

¹ The date of publication is 1959 unless otherwise stated. The compiler wishes to thank Mr George Green for help with this bibliography.

- FAIRFAX-LUCY, ALICE. *Charlecote and the Lucys: the chronicle of an English family*. O.U.P. 1958.
- FISHER, WILLIAM B. See DICKINSON, PAUL.
- GILL, R. C. *A short introductory list of books relating to the history of the borough of Barnes*. Borough of Barnes Hist. Soc., 104 Station Road, London, S.W.13. 1958.
- GRANT, M. H. *A chronological history of the old English landscape painters (in oil) from the sixteenth century to the nineteenth century describing more than eight hundred painters*. F. Lewis, Leigh-on-Sea, Essex.
- HARRIS, ALAN. *The Open Fields of Yorkshire*. E. Yorks Local Hist. Series, no. 9. E. Yorks Local Hist. Soc.
- HARVEY, P. D. A., and THORPE, HARRY. *The Printed Maps of Warwickshire, 1576-1900*. Records & Museums Committee of Warws. County Council.
- HOSKINS, W. G. *Local History in England*. Longmans, Green.
- HUDLESTON, C. ROY. *Naworth Estate and Household Accounts, 1648-60*. Surtees Soc., vol. CLXVIII. 1958.
- JAMES, R. E. (compiler). *A List of Wills and Marriage Settlements in the local history collection of the Shrewsbury Public Library*. Shrewsbury Public Library. 1958.
- KYD, J. G. *The Drove Roads and Bridle Paths around Braemar*. Oliver & Boyd. 1958.
- LENNARD, REGINALD. *Rural England, 1086-1135*. O.U.P.
- LONG, HARWOOD, et al. *Small Farms of Industrial Yorkshire: a study of some social and economic aspects of farming in the industrial Pennines*. University of Leeds. 1958.
- MACNEILL, MALCOLM. *MacNeill of Carskey: his estate journal, 1703-43*. M. Macdonald, 33 Marchmont Road, Edinburgh, 9.
- MATHIAS, PETER. *The Brewing Industry in England, 1700-1830*. C.U.P.
- MELLING, ELIZABETH (ed.). *Some Roads and Bridges. A collection of examples from original sources in the Kent Archives Office from the sixteenth to the nineteenth century*. Kentish Sources Series, no. 1. Kent County Archives Office, Maidstone, Kent.
- MIDGLEY, MARGARET (ed.). *Victoria History of the County of Stafford*. vol. IV. *Domesday, and West Cuttlestone Hundred*. O.U.P. 1958.
- MULLINS, E. L. C. *Texts and Calendars: an analytical guide to serial publications*. Royal Hist. Soc., Guides and Handbooks, no. 7. 1958.
- PAWSON, H. CECIL. *An account of the work of the Cockle Park Experimental Station from 1896 to 1956*. University of Durham.
- POOLE, A. L. (ed.). *Medieval England*. Clarendon Press. 1958.
- POTTS, WILLIAM. *A History of Banbury. The story of the development of a country town*. Banbury Guardian, 51 Parsons Street, Banbury. 1958.
- POWELL, W. R. (ed.). *Victoria History of the County of Essex: Bibliography*. O.U.P.
- READ, CONYERS. *Bibliography of British History: Tudor Period, 1485-1603*. 2nd ed. Clarendon Press.
- REDWOOD, B. C., and WILSON, A. E. *Customs of the Sussex manors of the Archbishop of Canterbury*. Sussex Rec. Soc., vol. LVII.
- RIVET, A. L. F. *Town and Country in Roman Britain*. Hutchinson. 1958.
- RODD, FRANCIS J. R., LORD RENNELL OF. *Valley on the March: a history of a group of manors on the Herefordshire March of Wales*. O.U.P. 1958.
- ROSS, C. D. (ed.). *Cartulary of St Mark's Hospital, Bristol*. Bristol Rec. Soc., vol. XXI.
- SAWYER, O. H. M. See DENMAN, D. R.
- SHEPPARD, JUNE. *The Drainage of the Hull Valley*. E. Yorks Local Hist. Ser., no. 8. E. Yorks Local Hist. Soc.
- SIXSMITH, R. A. *Staple Fitzpaine and the Forest of Neroche*. Mounter & Co., Taunton, Devon.
- SMITH, E. A. See ASPINALL, A.
- SMITH, LIONEL P. *Farming Weather*. Nelson.
- SMITHCORS, J. F. *Evolution of the Veterinary Art: a narrative account to 1850*. Baillière, Tindall, and Cox. 1958.
- STITT, F. B. (ed.). *Lenton Priory Estate Accounts*. Thoroton Soc. Rec. Ser., vol. XIX.
- SWITZER, J. F. Q. See DENMAN, D. R.
- SYMON, J. A. *Scottish Farming*. Oliver & Boyd.

- THIRSK, JOAN. *Tudor Enclosures*. Historical Association Pamphlet, General Ser., no. 41. Routledge & Kegan Paul.
- THOMAS, WATKIN JAMES. *Post-war agricultural policy in the United Kingdom*. Manchester Statistical Soc., Manchester.
- THOMPSON, G. B. *Primitive Land Transport of Ulster*. Belfast Museum and Art Gallery Handbook no. 2. 1958.
- THOMSON, T. R. (ed.). *Materials for a History of Cricklade*. Cricklade Hist. Soc., East View, Abingdon Court Lane, Cricklade, Wilts.
- THORPE, HARRY. See HARVEY, P. D. A.
- THWAITE, M. F. *Periodicals and transactions relating to Hertfordshire: a short guide and subject index*. County Bibliography, part 2. Herts. Local Hist. Council, 18 Warren Terrace, Bengeo, Herts.
- TROW-SMITH, ROBERT. *A History of British Livestock Husbandry, 1700-1900*. Routledge & Kegan Paul.
- TROW-SMITH, ROBERT. *The History of Stevenage*. Stevenage Soc., The Museum, Stevenage, Herts. 1958.
- WILLIAMS, W. M. *The Country Craftsman: a study of some rural crafts and the rural industries organization in England*. Dartington Hall, Studies in Rural Sociology. Routledge & Kegan Paul. 1958.
- WILSON, A. E. See REDWOOD, B. C.

ARTICLES

- ACHILLES, W. *Getreidepreise und Getreide-handelsbeziehungen europäischer Räume im 16. und 17. Jahrhundert*. Zeitschrift für Agrargeschichte u. Agrarsoziologie, vol. VII.
- ANGUS-BUTTERWORTH, L. M. See SINGLETON, W. A.
- ANON. *The Milky Way* (Twenty-five years of the Milk Marketing Board). Farmer and Stockbreeder, 7 October 1958.
- ANON. *Fifty Years* (Jubilee of National Farmers' Union). Farmer and Stockbreeder, 25 November 1958.
- ANON. *Cotswold Survivors*. Farmers' Weekly, 20 March.
- ASHMORE, OWEN. *Inventories as a source of local history*. Amateur Historian, vol. IV, no. 4.
- BALDWIN, R. C., and O'NEIL, HELEN E. O. *A medieval site at Chalk Hill, Temple Guiting, Glos., 1957*. Trans. Bristol & Glos. Archaeolog. Soc., vol. LXXVII.
- BALES, P. G. *A Note on Manors in Madingley*. Proc. Cambridge Antiq. Soc., vol. LI. 1958.
- BARBER, PETER. *Journal of a Traveller in Scotland, 1795-6*. Scottish Hist. Rev., vol. XXXVI. 1957.
- BARBER-LOMAX, J. W. *Moorcroft's journey into Hiundes*. Veterinary Record, vol. LXXI.
- BARKER, P. A., and PAGETT, J. A. *Moated enclosure at Watling Street Grange, Emergency excavations, 1958*. Trans. Salop Archaeolog. Soc., vol. LVI. 1958.
- BARLEY, L. B. and M. W. *Lincolnshire Craftsmen in the sixteenth and seventeenth centuries*. Lincs. Historian, vol. II, no. 6.
- BAYLISS, D. G. *The Lordship of Wigmore in the fourteenth century*. Trans. Woolhope Nat. Field Club, vol. XXXVI.
- BEAUMONT, OLGA, and HIGGS, JOHN W. Y. *Agriculture: Farm implements*. History of Technology, vol. IV, c. 1750-c. 1850. O.U.P. 1958.
- BECK, G. M. A. *A 1629 map of Duncton Common*. Sussex N. & Q., vol. xv, no. 3.
- BEDDOWS, A. R. *The Rye Grass in British Agriculture*. Welsh Plant Breeding Station, University College of Wales, Aberystwyth. 1958.
- BELLERBY, J. R. *National and Agricultural Income, 1851*. Economic Jnl, vol. LXIX.
- BENGER, F. B. *The Shepherds of Ashted, Headley, and Leatherhead downs and their half-horns*. Proc. Leatherhead & Dist. Local Hist. Soc., vol. II, no. 1. 1957.
- BERESFORD, M. W. *The Lay Subsidies. II—after 1334*. Amateur Historian, vol. IV, no. 3.
- BEST, R. H. *The Statistical Pattern of Land Use in Great Britain*. Geography, vol. XLIV.
- BIRLEY, ERIC. *The Archaeology of Cumberland and Westmorland*. Trans. Cumb. & Westm. Antiq. & Archaeolog. Soc., vol. LVIII.

- BURNETT, J. *Thesis summary: the history of food adulteration in Great Britain in the nineteenth century with special reference to bread, tea, and beer.* Bull. Inst. Hist. Research, vol. XXXII.
- BRUNSKILL, R. W. *The Development of the Large House in the Eden Valley, 1350-1840.* Trans. Cumb. & Westm. Antiq. & Archaeolog. Soc., vol. LVII. 1958.
- CABORN, J. M. *Shelterbelts.* Scottish Agriculture, vol. XXXVIII, no. 4.
- CAMERON, K. *The Scandinavians in Derbyshire: the place-name evidence.* Nottingham Medieval Studies, vol. II. 1958.
- CHEW, HILARY M. *Fifteen Years of Agricultural change. A study of sample counties in England and Wales, 1939-54.* Geography, vol. XLIII. 1958.
- COLLINS, A. H., and FLEMING, LINDSAY. *Becket's Barn, Pagham.* Sussex Archaeolog. Coll., vol. XCVI. 1958.
- COOK, T. H. *Bilthorpe and central Notts.* Trans. Thoroton Soc., vol. LXII.
- COOPER, COLIN. *Hallam Head and Stacey House.* Trans. Hunter Archaeolog. Soc., vol. VIII. 1958.
- COOPER, J. P. *The Fortune of Thomas Wentworth, Earl of Strafford.* Econ. Hist. Rev. 2nd Ser., vol. XI, no. 2. 1958.
- COPPOCK, J. T. *The Agricultural Returns as a source for local history.* Amateur Historian, vol. IV, no. 2. 1958.
- COPPOCK, J. T. *The Changing Arable in England and Wales, 1870-1956.* Tijdschrift voor Economische en Sociale Geografie, June-July.
- COSSONS, A. *Early Enclosures in Beeston.* Trans. Thoroton Soc., vol. LXII.
- CRACKNELL, BASIL E. *Canvey Island: the History of a Marshland Community.* Leicester University, Dept of English Local History, Occasional Paper no. 12.
- DARLINGTON, R. R. (ed.). *The Glapwell Charters.* Jnl Derbys. Archaeolog. & Nat. Hist. Soc., vols. LXXVI and LXXVII. 1957 and 1958.
- DAVIDSON, THOMAS. *Charms and Amulets in Animal Disease.* Jnl Amer. Vet. Medical Assoc., July 1958.
- DAVIDSON, THOMAS. *Plough Rituals in England and Scotland.* Agric. Hist. Rev., vol. VII.
- DAVIES, T. I. *The Vale of Aeron in the making.* Ceredigion, vol. III, no. 3. 1958.
- DODD, E. E. *Two Bingley Postscripts.* Bradford Antiquary, vol. XXXIX. 1958.
- DODD, J. PHILLIP. *A Stone Axe at Alveley.* Trans. Shrop. Archaeolog. Soc., 1959.
- DODD, J. PHILLIP. *The Denbighshire crop returns for 1854.* Trans. Denbigh. Hist. Soc., vol. VIII.
- DOVER, P. *Seventeenth- and eighteenth-century seabanks, drains, and marshes of Algarkirkcum-Fosdyke.* Rep. & Papers Lincs. Archit. & Archaeolog. Soc., vol. VII. 1957.
- DUMBRECK, W. V. *The Lowy of Tonbridge.* Archaeologia Cantiana, vol. LXXII.
- DUNCAN, ARCHIBALD A. M. *The Earliest Scottish Charters.* Scottish Hist. Rev., vol. XXXVII. 1958.
- DURNO, S. E. *Pollen analysis of peat deposits in the eastern Grampians.* Scottish Geogr. Mag., vol. LXXV, no. 2.
- EBY, C. H. *William Moorcroft, 1767-1825.* Modern Veterinary Practice, vol. XL, no. 11.
- ELTON, G. R. *The records of conciliar courts in the sixteenth century.* Amateur Historian, vol. IV, no. 3.
- FEARN, HUGH. *The financing of the poor law incorporation for the hundreds of Colneis and Carlford in the county of Suffolk, 1758-1820.* Suffolk Inst. of Archaeolog., vol. XXVII. 1957.
- FENNELL, K. R. *King Street in Kesteven and some notes on Old Sleaford.* Lincs. Historian, vol. II, no. 6.
- FINBERG, H. P. R. *Three Anglo-Saxon Boundaries.* Trans. Salop Archaeolog. Soc., vol. LVI. 1958.
- FLEMING, LINDSAY. See COLLINS, A. H.
- FOX, AILEEN. *A Monastic Homestead on Dean Moor, S. Devon.* Medieval Archaeology, vol. II. 1958.
- FUSSELL, G. E. *Low Countries' influence on English farming.* Econ. Hist. Rev., 2nd Ser., vol. LXXIV.
- FUSSELL, G. E. *Fertilizer Practice and Theory in the 1650's.* Fertilizer and Feeding Stuffs Jnl, 21 October.

- FUSSELL, G. E. *Ploughs and Ploughing*. Jnl Chartered Land Agents' Soc., vol. LVIII.
- FUSSELL, G. E. *Mechanically-hauled ploughs*. Jnl Chartered Land Agents' Soc., vol. LVIII.
- FUSSELL, G. E. *Seed and manure drills*. Jnl Chartered Land Agents' Soc., vol. LVIII.
- FUSSELL, G. E. *Field Drainage*. Jnl Chartered Land Agents' Soc., vol. LVIII.
- FUSSELL, G. E. *William Stevenson, 1772-1829: the father of Mrs Gaskell*. Fertilizer and Feeding Stuffs Jnl, 26 August.
- FUSSELL, G. E. *The Farriers of Tudor days*. M. & B. Veterinary Rev., vol. x, no. 4.
- FUSSELL, G. E. *Marl: an ancient manure*. Nature, 24 Jan.
- FUSSELL, G. E. *The gentlemanly profession of rat-catcher*. Jnl Chartered Land Agents' Soc., vol. LVIII.
- GAYDON, A. T. *The Taxation of 1297. A translation of the local rolls of assessment for Barford, Biggleswade, and Flitt Hundreds, and for Bedford, Dunstable, Leighton Buzzard and Luton*. Beds. Hist. Rec. Soc., vol. XXXIX.
- GOODSALL, ROBERT H. *The Astleys of Maidstone*. Archaeologia Cantiana, vol. LXXII.
- GÖRANSSON, SÖLVE. *Field and village on the Island of Öland. A study of the genetic compound of an East Swedish rural landscape*. Meddelanden Från Uppsala Universitets Geografiska Institution, Ser. A, no. 136.
- GREEN, G. H. *Historical problems of South Derbyshire-North Leicestershire border*. Derbys. Miscellany, February.
- GRESHAM, COLIN A. *The townships of Gest, Treftys, and Ystumlllyn*. Trans. Caernarvon Hist. Soc., vol. XVIII. 1957.
- HARGREAVES, JACK. *The Story of York Market*. Farmers' Weekly, 19 December 1958.
- HARVEY, BARBARA (ed.). *Custumal (1391) and Bye-laws (1386-1540) of the manor of Islip*. Oxon. Record Soc., vol. XL.
- HARVEY, JOHN. *A Short History of Bookham, parts IV and V*. Proc. Leatherhead & District Local Hist. Soc., vol. II, nos. 1 & 2. 1957 and 1958.
- HARVEY, NIGEL. *The First Agricultural Survey*. Agriculture, vol. LXVI, no. 1.
- HARVEY, NIGEL. *Hop-farming in the eighteenth century*. A Monthly Bulletin, vol. XXX, no. 10.
- HIGGS, JOHN. *Farming in the Oxfordshire region from the Napoleonic Wars to the World Wars*. Jnl Roy. Agric. Soc., vol. CXIX. 1958. See also under BEAUMONT, OLGA.
- HOSFORD, W. H. *The Enclosure of Sleaford*. Rep. & Papers Lincs. Archit. & Archaeolog. Soc., vol. VII. 1957.
- HOUGHTON, A. W. J. *A Note on excavations at the Roman villa at Lea Cross during 1956-7*. Trans. Salop Archaeolog. Soc., vol. LVI. 1958.
- HUDLESTON, C. ROY. *The Dalstons of Acornbank*. Trans. Cumb. & Westm. Antiq. & Archaeolog. Soc., vol. LVIII.
- HULL, FELIX. *Melcombe Mill: a fourteenth-century building account*. Archaeologia Cantiana, vol. LXXII.
- HULL, FELIX. *The Custumal of Kent*. Archaeologia Cantiana, vol. LXXII.
- HUNT, H. G. *Agricultural Rent in South-East England, 1788-1825*. Agric. Hist. Rev., vol. VII.
- HUNT, H. G. *Landownership and Enclosure, 1750-1830*. Econ. Hist. Rev., 2nd Ser., vol. XI.
- IZZARD, W. D. *Foreword (Fifty years of agricultural journalism)*. Guild of Agric. Journalists' Year Book.
- JACKSON, JAMES C. *'Fossil' field boundaries*. Amateur Historian, vol. IV, no. 2. 1958.
- JACKSON, J. N. *Some Observations upon the Herefordshire Environment of the seventeenth and eighteenth centuries*. Trans. Woolhope Naturalists' Field Club, vol. XXXV.
- JANCEY, E. M. *An Eighteenth-Century Steward and his work*. Trans. Salop Archaeolog. Soc., vol. LVI. 1958.
- JIRLOW, RAGNAR, and WHITAKER, IAN. *The Plough in Scotland*. Scottish Studies, vol. I. 1957.
- JOHN, E. *The Imposition of the Common Burdens on the Lands of the English church*. Bull. Inst. Hist. Research, vol. XXXI. 1958.
- JOHNS, EWART. *The Surveying and Mapping of Vegetation on some Dartmoor Pastures*. Geogr. Studies, vol. IV. 1957.

- JOHNSON, W. BRANCH. *Notes before reading court rolls*. *Amateur Historian*, vol. IV, no. 3.
- JOHNSTON, G. D. *Boundaries*. *Amateur Historian*, vol. IV, no. 2. 1958.
- JONES, G. J. *Some population problems relating to Cumberland and Westmorland in the eighteenth century*. *Trans. Cumb. & Westm. Antiq. & Archaeolog. Soc.*, vol. LVIII.
- JOPE, E. M., and THRELFALL, R. I. *Excavation of a Medieval Settlement at Beere, North Tawton, Devon*. *Medieval Archaeology*, vol. II. 1958.
- KELTING, E. L. *An Outline of the Development of Land Drainage in Somerset*. *River Boards' Association Yearbook*. 1958.
- KIDSON, RUTH M. *The Gentry of Staffordshire, 1662-3*. *Staffs. Rec. Soc.*, 4th Ser., vol. II. 1958.
- KING, P. I. *Bibliography of the works of William Thomas Mellows*. *Northants. Past & Present*, vol. II, no. 5. 1958.
- KIRBY, J. L. and A. D. *The Poll tax of 1377 for Carlisle*. *Trans. Cumb. & Westm. Antiq. & Archaeolog. Soc.*, vol. LVIII.
- KIRKUS, MARY A. (ed.). *The Records of the Commissioners of Sewers in the Parts of Holland, 1547-1603. part 1*. *Lincs. Rec. Soc.*, vol. LIV.
- LAMONT, W. D. *Old land denominations and "Old Extent" in Islay, parts I & II*. *Scottish Studies*, no. 2 and vol. II, part 1. 1958.
- LANGSTON, J. N. *The Pastons of Horton*. *Trans. Bristol & Glos. Archaeolog. Soc.*, vol. LXXVII.
- LAWTON, R. *Population Movements in the West Midlands, 1841-61*. *Geography*, vol. XLIII. 1958.
- LEISTER, I. *Zum Problem des "Keltischen Einzelhofs" in Irland*. *Zeitschrift für Agrargeschichte u. Agrarsoziologie*, vol. VII, no. 1.
- LENNARD, REGINALD. *Statistics of Sheep in Medieval England*. *Agric. Hist. Rev.*, vol. VII.
- LINDLEY, E. S. *Saxon Wotton*. *Trans. Bristol & Glos. Archaeolog. Soc.*, vol. LXXVII.
- LOFTHOUSE, R. G. A. *First Ten Years of the Agricultural Land Service*. *Agriculture*, vol. LXV, no. 7. 1958.
- LONGDEN, J. *Statistical Notes on Winchester Heriots*. *Econ. Hist. Rev.*, 2nd Ser., vol. XI.
- LOWTHER, A. W. G. *Ashtead and its History, parts IX and X*. *Proc. Leatherhead & Dist. Local Hist. Soc.*, vol. II, nos. 1 and 2. 1957 and 1958.
- MACDONALD, D. J. *A Plough from South Uist*. *Scottish Studies*, no. 2. 1957.
- MACLAGAN, D. STEWART. *Stock Rearing in the Highlands, 1720-1820*. *Trans. Roy. Highland & Agric. Soc. of Scotland*. 1957.
- MACSWEEN, MALCOLM D. *Transhumance in North Skye*. *Scottish Geogr. Mag.*, vol. LXXV, no. 2.
- MASON, R. T. *Four single-bay halls*. *Sussex Archaeolog. Coll.*, vol. XCVI. 1958.
- MERTENS, J. *Eine antike Mähmaschine*. *Zeitschrift für Agrargeschichte und Agrarsoziologie*, vol. VII, no. 1.
- MILLS, DENNIS. *Regions of Kesteven devised for the purposes of agricultural history*. *Rep. & Papers Lincs. Archit. & Archaeolog. Soc.*, vol. VII. 1957.
- MILLS, DENNIS. *The development of rural settlement around Lincoln with special reference to the eighteenth and nineteenth centuries*. *East Midland Geographer*, no. 11.
- MILLS, DENNIS. *Enclosure in Kesteven*. *Agric. Hist. Rev.*, vol. VII.
- MITCHELL, DUNCAN. *Social Mobility in nineteenth-century Devon*. *Agric. Hist. Rev.*, vol. VII.
- MITCHISON, ROSALIND. *The Old Board of Agriculture, 1793-1822*. *Eng. Hist. Rev.*, vol. LXXIV.
- MOUSLEY, J. E. *The fortunes of some gentry families of Elizabethan Sussex*. *Econ. Hist. Rev.*, 2nd Ser., vol. XI.
- O'HANLON, S. R. *The Handsome Englishman* (Thomas William Coke of Holkham). *Agriculture*, December 1958.
- O'LOAN, J. *Livestock in the Brehon Laws*. *Agric. Hist. Rev.*, vol. VII.
- O'LOAN, J. *Land reclamation in Dromiskin, co. Louth, part 1. Historical*. *Jnl Dept Agriculture*, vol. LIV. Government Publications Sale Office, Dublin, Eire.
- O'NEIL, HELEN. See BALDWIN, R. C.
- OSBORNE, R. H. *The movements of people in*

- Scotland, 1851-1951*. Scottish Studies, vol. II, no. 1. 1958.
- PAGETT, J. A. *See* BARKER, P. A.
- PARSONS, L. M. *Belvoir*. Agriculture, vol. LVI, no. 1.
- PAWSON, H. CECIL. *Some Agricultural History Salvaged*. Agric. Hist. Rev., vol. VII.
- POSTAN, M. M., and TITOW, J. *Heriots and Prices on Winchester manors*. Econ. Hist. Rev., 2nd Ser., vol. XI.
- PRIESTLEY, H. E. *A new venture—a parish history in parts*. Amateur Historian, vol. IV, no. 3.
- PRINCE, HUGH. *Parkland in the Chilterns*. Geogr. Rev., vol. XLIX, no. 1.
- PRINCE, HUGH. *The Tithe Surveys of the Mid-Nineteenth Century*. Agric. Hist. Rev., vol. VII.
- ROWELL, C. W. *County Council small-holdings, 1908-58*. Agriculture, vol. LXVI, no. 3.
- RYDER, M. L. *The Animal Remains found at Kirkstall Abbey*. Agric. Hist. Rev., vol. VII.
- RYDER, M. L. *The Domestication of Sheep*. Wool Knowledge, vol. IV, no. 10.
- SAYCE, R. U. *The Old Summer Pastures, II*. Montgom. Coll., vol. LV, no. 1. 1958.
- SAYLES, G. O. (ed.). *Select Cases in the Court of King's Bench, Edward III. Vol. v*. Selden Soc., vol. LXXVI. 1957.
- SIMPSON, W. D. *Brocavium, Ninekirks, Brougham: a study in continuity*. Trans. Cumb. & Westm. Antiq. & Archaeolog. Soc., vol. LVIII.
- SINGLETON, W. A., WATSON, R. C., and ANGUS-BUTTERWORTH, L. M. *Old Houses in Lancashire*. Trans. Hist. Soc. of Lancs. and Cheshire, vol. CIX. 1958.
- SMITH, LIONEL P. *Form book for harvest weather* (Hundred years' chart). Farmer and Stockbreeder, 25 August.
- STONE, LAWRENCE. *Lord Montagu's Directions for his Son*. Northants. Past and Present, vol. II, no. 5.
- SYMONS, LESLEY. *The Economic Conquest of the Hills*. Scottish Geogr. Mag., vol. LXXV, no. 1.
- TESTER, P. J. and CAIGER, J. E. L. *Medieval Buildings in the Joyden's Wood Square Earthwork*. Archaeologia Cantiana, vol. LXXII.
- THIRD, BETTY M. W. *The Significance of Scottish estate plans and associated documents*. Scottish Studies, vol. I. 1957.
- THORPE, HARRY. *See* HARVEY, P. D. A.
- TITOW, J. *See* POSTAN, M. M.
- TUCKER, NORMAN. *Marle Hall*. Trans. Caernarvon Hist. Soc., vol. XVIII. 1957.
- WAITES, B. *Thesis summary: the monasteries and the medieval development of north-east Yorkshire*. Bull. Inst. Hist. Research, vol. XXXI. 1958.
- WATSON, R. C. *See* SINGLETON, W. A.
- WHITAKER, IAN. *The Harrow in Scotland*. Scottish Studies, vol. II, no. 2. 1958.
- WHITAKER, IAN. *See* JIRLOW, RAGNAR.
- WILLIAMS, W. OGWEN. *The Platts of Oldham*. Trans. Caernarvon Hist. Soc., vol. XVIII. 1957.
- WILSON, KENNETH. *The Monastic Wool Trade in Yorkshire*. Amateur Historian, vol. IV, no. 4.
- WRIGHT, PHILIP A. *Hurdle-makers of the old days*. East Anglian Daily Times, 27 December 1958.
- WRIGHT, PHILIP A. *The farm tractor since 1902*. East Anglian Daily Times, 18 April.
- WRIGHT, PHILIP A. *The Early Practice of the Art of the Dibbler*. East Anglian Daily Times, 15 August.
- WRIGHT, PHILIP A. *The Harvest Horn*. East Anglian Daily Times, 12 September.
- WRIGHT, PHILIP A. *The old order changeth. A study of farm history through the centuries*. Guild of Agric. Journalists' Year Book.

Letters to the Editor

INFORMATION WANTED

SIR,—Can any of your readers supply information about a print made c. 1840 showing a Mr Valentine Barford with three sheep. The inscription says the print was made by subscribers in honour of his services in conserving the breed of Leicestershire sheep. I should be glad to learn who this man was, when he lived, and where.

D. T-D. CLARKE

Keeper of Antiquities

*City of Leicester Museum and Art Gallery,
New Walk, Leicester.*

ALLOY IN LIVESTOCK

SIR,—Like Colonel Wyndham, I have come across a reference to 'alloy'. This occurs in M. M. Milburn's 'Farming of the North Riding of Yorkshire' in Vol. ix Jour. R.A.S.E.: "As the dairies and grass began to disappear, the distinctive breed has given way, and the celebrated breed of the banks of the Tees, the *short horns*, are spreading with more or less purity, and a greater or lesser degree of alloy—spread by the excellent landlords who, patronizing breeding themselves by purchasing the stock of the first and most judicious breeders, have allowed their tenants the free use of these superior animals."

Used in this context, alloy appears to refer to the degree of impurity in the animals' breeding.

W. HARWOOD LONG

40 University Road, Leeds, 2.

ANCIENT IRISH CATTLE

SIR,—Mr J. O'Loan has drawn attention to references in the Brehon Laws to the physical characteristics of cattle in Ireland in the Dark Ages (A.H.R., VII, p. 67). He cites the reference to "white cows" in the Irish Laws as pointing to the contemporaneous existence of cattle of other colours. The fact that the "white milk" of the animals is referred to in the very same extract, however, indicates how

fond the writers of the Irish Laws were of pleonasm. In the light of this the mention of white cows cannot be taken as firm evidence of varieties in colour.

A further point of interest is the cited reference to "horned cows" and the inference that polled cattle must have been known in those days. Quite apart from what has been said above, there is good reason to doubt this. References to horned cattle are quite common in the court rolls of manors in northern England, particularly when the carrying capacity of the commons is being defined. In a number of contexts, moreover, it is clear that the term "horned" is used to distinguish mature cattle from the followers—calves and young stirks.

S. R. EYRE

*Department of Geography,
The University, Leeds, 2.*

REPORT ON COMMON LAND

SIR,—In her review of the *Report of the Royal Commission on Common Land* Miss Dorothy Sylvester suggests that it is "likely to remain a standard work on the subject for many years to come."

While agreeing in general with that assessment I would like, nevertheless, to draw your attention to the fact that some of the Welsh material is inaccurate. Perhaps you will allow me to give just one important example. Paragraph 47 of Appendix 2 (p. 162) opens with the statement that "... the principality of Wales (including Monmouthshire) has no act or award relating to open fields..." But even the incomplete *Great Enclosures of Common Lands in Wales* lists two such acts—Llyswn and Bronllys (p. 55)—while several more have been omitted or wrongly described by Ivor Bowen. In fact an *inspection* of the awards would have revealed quite a different picture from that given in the *Report*.

T. I. JEFFREYS JONES

*Llys Branwen, Harlech,
Merioneth.*

'THE FEATE OF GARDENYNG'

SIR,—I am at present engaged in editing Trinity College, Cambridge, MS. o.9.38. In the December 1936 issue of *My Garden*, Vol. IX, pp. 519–23, an article was published by W. L. Carter on the poem 'The Feate of Gardenyng' by one John Gardener, which occurs on folio 18v–20v of this manuscript. It had been edited by the Hon. Alicia Amherst and published in *Archaeologia*, Vol. LIV, 1894. I have been unable to trace any further articles or correspondence which followed from this or any other information relating to this subject. At one point in his article Mr Carter refers to the section in the poem on flowers and says with reference to flower names that "further investigation is being made into cases of doubtful identity." I have been unable so far to trace whether this further investigation took place and whether anything was published on it. I should be glad to

hear from anybody who knows of any further reference to the poem or to Mr Carter's further investigation.

A. G. RIGG

Pembroke College, Oxford.

HISTORY OF IRRIGATION

SIR,—I am gathering information on the history of irrigation and ancient irrigation practices in this country. Although I am primarily interested in the irrigation of vegetable crops, this cannot be separated easily from the irrigation of farm crops in a historical review. I would be pleased to hear from anyone working on the history of farm irrigation and would also be grateful for any information I could obtain from any source on this subject.

P. J. SALTER

*National Vegetable Research Station,
Wellesbourne, Warwick.*

Notes and Comments

THE BRITISH AGRICULTURAL
HISTORY SOCIETY

The joint winter conference with the Association of Agriculture was held on Saturday, 5 December, in the University of London Institute of Education. The new President of the Society, Sir Keith Murray, took the chair.

Sudden illness prevented Mr W. B. Mercer, formerly Provincial Director of the National Agricultural Advisory Service, West Midlands Province, from giving his lecture on The Development of Agricultural Education and Advisory Services. His place was nobly taken at short notice by Mr T. W. Fletcher of the Department of Agricultural Economics, Manchester University, who gave a paper on Lancashire Livestock Farming in the Great Depression. In the afternoon Mr O. R. McGregor, Reader in Social Institutions, University of London, gave a paper on Free Trade in Land in the Victorian Period, at the conclusion of which Miss Edith Whetham,

Gilbey Lecturer in the History and Economics of Agriculture, University of Cambridge, and Fellow of Newnham College, discussed and demonstrated some Cambridgeshire tithe maps of 1836–90.

SCOTTISH CONFERENCE

The first Scottish conference of the Society was held jointly with the School of Scottish Studies on 26 September 1959, at the Department of Prehistoric Archaeology, Edinburgh University. It was well attended and it was the general opinion of those present that regional conferences should be held in Scotland from time to time.

The conference began with a panel discussion on the Problems of Scottish Agrarian History before 1700, which was led by Dr Gordon Donaldson, Reader in Scottish History, Edinburgh University, and Professor Stuart Piggott, Head of the Department of

(continued on page 56)

Book Reviews

V. BONHAM-CARTER, *Dartington Hall: the history of an experiment*. Phoenix House, 1958. 224 pp., illus. 30s.

The varied human activities which have from time to time comprised the Dartington Hall community (the unscientific use of the word "experiment" in the title and the blurb is to be deplored, as it is of the nature of experiments that they can be repeated indefinitely if necessary) are well chronicled in this attractively produced and persuasive book. In 1924 Mr and Mrs Elmhirst bought the somewhat dilapidated remains of the ancient estate of Dartington in Devon, then comprising 820 acres, and proceeded not merely to reorganize, extend, and modernize it agriculturally, but also to make it socially and culturally a kind of Owenite colony without the peculiar doctrines associated with Robert Owen. Dartington possessed other advantages over Orbiston, Ralahine, and Harmony Hall. Whereas the Owenite experiments usually suffered from inadequate capital resources, Mrs Elmhirst, being the daughter of one American banker and the widow of a second, was well able to finance not only those communal activities which could hardly be expected to produce a profit, but also those which brought in either inadequate profits or losses. By 1958 the estate had expanded to about 4,000 acres. Unfortunately few details about the finances of the estate are given, although W. E. Hiley's *Examinations* of the financial accounts of Dartington Woodlands Ltd from 1947 to 1955 are noted as being available to any interested researcher. There can be no doubt, however, that the fulfilment of the Elmhirsts' policy of rural reconstruction and enlightened landlordism has been rendered easier by the fact that they purchased most of the estate in a period of agricultural depression and that they have benefited greatly from the revival in British agriculture which has taken place since the 1930's. Nevertheless it should not be forgotten that the research carried out

and the rehabilitation techniques employed at Dartington itself have contributed to this revival and to the growth of world interest in the problems of scientific agriculture, symbolized, for example, by the International Conference of Agricultural Economists. Nearly one-third of the book is taken up by an account of the Dartington Hall school by W. B. Curry, an account redolent of the libertarian idealism of the inter-war period and remarkable for its bland assumptions that boarding schools are best and that the State system of education is almost beneath contempt.

W. H. CHALONER

V. C. FOWKE, *The National Policy and the Wheat Economy*. University of Toronto Press. London: Oxford University Press, 1957. viii+312 pp. 45s.

This is the seventh study to be published under the sponsorship of the Canadian Social Science Research Council in the series on 'Social Credit in Alberta: Its background and development'.

Professor Fowke sets out the results of many years of devoted, painstaking research, and the book can be highly recommended to all careful students of Canadian history. It can also be recommended as useful in extending the horizons and sharpening the judgments of many of those who are now concerned with agricultural development in the poorer countries. Canada's circumstances have been unique in many respects and unlikely to be repeated, but within them basic socio-economic interests and conflicts have been similar to those in many other areas now developing agricultural surpluses.

Professor Fowke's general thesis is that the complex of policies directed towards the creation of a transcontinental Canadian nation required effective occupation of the prairies. This, in turn, required capital and so led to the provision of a "frontier of investment opportunity" without which the

earlier political and territorial dreams would have proved empty. But by 1930 the first phase of "national policy" was about concluded. Titles had been granted by Government to some 120 million acres of land, 58 million of them under free-homestead or grant systems, and the rest by or for sale. That more might well have been granted as free-homestead land is commonly argued, but Professor Fowke emphasizes the difficulties of settlers on free-homestead lands. Initial claims on 99 million acres were made by such settlers, but four out of ten of these claims could not be sustained over the three-year period as required for the granting of full title. And on the 58 million acres of homestead lands on which full titles were granted human sufferings were often severe, not only because of heavy debts and major changes in the money value of farm products, but also because there had been "failure to base the settlement of the prairies on anything in the way of land or climatic surveys." Settlement on the basis of 160-acre farms was also a serious handicap, although the mixture of "free homestead" and "for-sale" arrangements contributed to the "enlargement . . . so essential to sound development of the wheat economy."

Professor Fowke also emphasizes "persistent disregard of the competitive inferiority of agriculture within the price system." He feels impelled to recognize the effectiveness of the concept of parity price in United States farm policy as a unifying force of "great tenacity and a substantial measure of consistency." And he doubts whether Canadian agricultural policy has now any real sense of direction because it lacks "theoretical or conceptual content." But the worst difficulties arising from imperfect competition at the point of first purchase of grains from farmers appear to have been overcome in Canada, and the ablest analysts of U.S. agricultural policies now have weighty arguments against them, not least that they tend to retard the outflow of people from farming. The "competitive inferiority of agriculture" cannot in the long run be removed by State pricing of products, but it could be minimized by encouraging,

through education, training, and appropriate credit arrangements, a greater mobility of farmers and farm workers out of farming, and particularly out of areas with chancy rainfall or infertile soils.

The style is almost throughout clear and attractive, and the index and bibliography are excellent.

J. R. RAEBURN

NORMAN McCORD, *The Anti-Corn Law League, 1838-1846*. George Allen & Unwin Ltd, 1958. 226 pp. 25s.

The Victorians wrote copious memoranda and innumerable letters about the events in which they were participants, and it will be a long time before historians will have exhausted their searches therein. The author of this scholarly monograph on The Anti-Corn League has drawn on papers—notably those of George Wilson, President of the League for most of its life—not previously used.

The main interest of the book is as a study in political history, for Dr McCord is concerned with giving a full and absorbing account of the origins, personalities, structure, and tactics of "one of the first examples of a recurring feature of modern political life, the highly organized political pressure group with its centralized administration and its formidable propaganda apparatus."

This emphasis on the political has, understandably enough, resulted in little mention being made of the contemporary economic background. All the same, the agricultural historian will find some matters of specific interest, more especially the references to the League's attempt to convert the agricultural interests. There were two phases to this attempt.

First, in 1839, when the "Leaguers" thought they could win on the plane of economic and social argument, a series of lecturing tours in the agricultural districts was "designed to bring the farmers to realize that they could be better off without the Corn Laws." The lecturers made no impression, and were often given very rough receptions. For example, "the impudent James Acland

was badly manhandled at Saxmundham . . . and at Arundel one farmer provided a bushel of corn to anyone throwing the lecturer into the river." The costly failure of this first attempt to woo the farmers by economic argument was not due only to the farmers' obstinate refusal "to see the League as an association of their true friends," it was also due to the poor quality of the paid agents entrusted with the work.

In the second determined attempt, which began in 1843, it was the leaders and not the agents who took to the stumps to wean the farmers from protection. Not only did they strive to prove that the Corn Laws were injurious to agriculture, they also sought to drive a wedge between farmer and landlord. Cobden, for example, drew attention to "the broad distinction which exists between the landed and the agricultural interest," while Bright aimed his shafts at the hated Game Laws. But it was all to little avail, for "the English farmers declined to see in an organization dominated by the manufacturing interest a better friend to agriculture than the old leaders of the landed interest."

Two powerful weapons in the armoury of the League were the manipulation of electoral rolls and the circulation of propaganda tracts. Both have an interest to the agricultural historian.

As one means of increasing their electoral strength the League actively helped in the buying of the freehold qualification "which made a man equal at the polls to the greatest territorial magnate in the county." One example given by Dr McCord has a distinct agricultural flavour. In October 1845 Cobden and Bright seriously considered buying at a price of about £60,000 to £80,000 a landed estate in Bucks with a view to creating 1,000 county votes. It was to be put out, however, that the purpose was "to establish a model farm with a model lease, model offices and model cottages with gardens, to prove our faith in our principles that the soil is as capable of as great a profitable development as manufacturers." What a pity that nothing seems to have come of this pioneering idea in land settlement.

In the war of pamphlets which reached "millions in numbers and tons in weight" a great deal of effort was expended on the "enlightenment" of the rural mind. In keeping with the League's usual practice of employing experts, the team of pamphleteers included several farmers who wrote on agriculture and supplied the orators with ammunition. In a letter to one of them Cobden admits that he was "profoundly ignorant of the practices of agriculture, all I know I learn from you and others." Alexander Sommerville was an influential scribe, but he, at least, wished to keep his connection with the League a secret, and, signing his articles as by 'Whistler at the Plough', he preferred to pose as "a disinterested observer of the rural scene."

One would have liked to hear more about the League's supporters amongst the farmers. Is it too much to hope that some agricultural historian will soon do for agriculture what Miss Lucy Brown has done for the secret supporters of the League at the Board of Trade in her book which has appeared since the publication of Dr McCord's admirable study?

EDGAR THOMAS

R. P. DORE, *Land Reform in Japan*. Published for the Royal Institute of International Affairs by Oxford University Press, 1959. xviii + 510 pp. 55s.

The author is a Canadian university teacher who acquired a knowledge of the Japanese language and then spent a year, not among officials and professors, but actually living in Japanese villages. A reviewer whose knowledge of Japan is confined to that obtained from reading economic and statistical documents, and a two weeks' visit, would indeed require considerable hardihood to criticize him. After searching the text in an *exigant* manner for economic or statistical errors, and finding none, the reviewer then considered himself entitled to sit back and thoroughly enjoy the rest of the book, which gives a most vivid and down-to-earth account of what Japanese villagers are really like, how they organize their work, their local politics,

their many virtues, and their very human failings.

The opening chapter gives a tantalizingly brief account of a land nationalization proposal which was enacted, but which soon broke down, in the seventh century A.D. After some centuries of bloody baronial wars Japan, about 1600, entered the peaceful, but rigid and unprogressive, Tokugawa Period which lasted until the Revolution of 1868. Tokugawa society showed many of the characteristics—in a more extreme form—of Bourbon France. Some half of the peasants' crops was taken in rents, nominally due to the Emperor, but in fact used to support the nobility and a great number of functionless *samurai*. There was some coinage, but rice formed a *de facto* currency for most transactions. Even under these rigid conditions, however, a considerable urban population grew up. Cunning rice merchants acted as money-lenders, and many of them, like their European counterparts, eventually bought or married their way into noble families.

Tokugawa Japan is interesting enough, but modern Japan, with which this book is principally concerned, really does demand the attention of historians. Nowhere in the world is there such an interesting 'laboratory' of rapid economic growth. Japan at the time of the Meiji Revolution of 1868 was far more backward, illiterate, and isolated than Russia. The Emperor Meiji, a statesman of genius, disbanded the *samurai* and told them to go and do some useful work, and established an Army under his direct control. To pay for the modernization of the country he established land taxes, taking approximately 35 per cent of the crop (reduced to about 25 per cent in 1878).

But it did not occur to this otherwise far-seeing statesman that a silver currency, under world trading conditions of the late nineteenth century, might rapidly lose its purchasing power. Land taxes had been fixed in money. The real return from them steadily fell. The public revenues were supplemented by other forms of taxation. With the fall in the real burden of land tax, the price of land

rose, and it became attractive to urban investors. The private agricultural landowners of Japan were thus a comparatively recent development, not the descendants of the ancient feudal nobility. Much of the land remained peasant-owned throughout.

Meiji taught his simple people that they owed him three duties, namely to pay their taxes, to educate their children, and to serve in the Army. The author argues very trenchantly that these have been the real equalizing forces in Japanese life. The suffrage became universal in 1925; but this was of secondary importance compared with these other factors. Unlike his English counterpart, the son of a Japanese landowning family studied at the village school (primary education was made universal as early as 1886) and served in the ranks in the Army. When General MacArthur directed the Japanese Government to introduce legislation for buying out the landowners in 1946, public opinion was quite prepared for the change—though most Japanese seem to have thought, as does the author, that the compensation should have been reasonable and not nugatory.

The book is full of fascinating glimpses of Japanese rural life. Many nineteenth-century landlords were as zealous as our own Victorians to improve the moral tone of their villages. One landlord told his tenants that they ought to start work at 3 a.m. during the summer, got up and walked around the village to see how far his instructions were obeyed, and placed a signboard bearing the legend "Commendable Household" outside the houses of the obedient, until the whole village was shamed into conformity.

But apart from such efforts, the landlords did not have a good record for encouraging agricultural progress; on the whole they discouraged the use of chemical fertilizers, which the independent peasants favoured.

Most of the agricultural work in Japan, to this day, is done with hand tools. Horses and draught oxen are rare; and indeed would be of doubtful economic value in Japan's tiny rice-plots. The hand-tool cultivator never-

theless makes intelligent use of fertilizers, insecticides, weed killers, etc. and now small five-h.p. tractors, worked by contractors, are rapidly coming into use.

During the years of grave agricultural impoverishment in the 1930's the Nohon-Shugi (literally "Agriculture-is-the-base") Movement sprang up rapidly, teaching that agriculture, pursued in the traditional manner, was the base alike of wealth and of virtue. This movement had much following among army officers, and must carry some of the blame for the insurrection of 1936 (when the Prime Minister was murdered), and also for the Army's aggressive external policy.

The later chapters give a full, frank, and earthy account of how democratic politics work in a Japanese village. Contributions to party funds in return for services rendered, and 'jobs for the boys', are not phenomena confined to Western democracies. But the author much prefers modern Japan, with all its faults, to Japan as it was a generation ago.

COLIN CLARK

PETER MICHELSEN, *Danish Wheel Ploughs, an illustrated catalogue*. International Secretariat for Research on the History of Agricultural Implements, Copenhagen, 1959. No price stated.

This is a catalogue which provides a photograph of all known specimens of wheel ploughs in Danish museums. It is the result of a survey carried out by Mr Michelsen to provide in a readily available form source material which may be of use to research workers. In addition to the photographs, which number 192, there is a map showing the distribution of the ploughs throughout Denmark. The terminology adopted follows closely that used by F. G. Payne in 'The Plough in Ancient Britain', *Archaeological Journal*, 1947, and Branimir Bratanić, 'On the Antiquity of the One-Sided Plough in Europe', *Laos*, 11, 1952. It is a welcome attempt to provide a catalogue, which as a result of standardized terminology can be used by workers in other countries and which has the added attraction of being printed in English.

H. L. GRAY, *English Field Systems*. The Merlin Press, 112 Whitfield Street, London, W.1, 1959. x+568 pp. 63s.

Although a standard work, containing much material of permanent value, Gray's book has been out of print for some years. A new edition is therefore welcome, but as agrarian history has not stood still since 1915, it would have been well if some competent scholar had been asked to state briefly where Gray's findings have been modified by later research. This has not been done. We have here a photographic reprint of the 1915 edition, with no new matter except a copyright notice (in which there is a glaring misprint) on the back of the title-page. It is bound in a quite astonishingly repellent black cloth, on which, and on the jacket, the title of the book is printed incorrectly.

H. P. R. FINBERG

W. G. HOSKINS, *Local History in England*.

Longmans, 1959. x+208 pp., illus. 21s.

Dr Hoskins and his publications need no introduction to readers of this journal who will know that this book will be both interesting and useful. Its main purpose is to help the amateur local historian. Methods of work, the publication of results, and the differences between local history and antiquarianism are discussed, especially in chapters entitled 'The Local Historian Today' and 'Writing and Publishing'. Some neglected fields of investigation are also considered, in particular the local community as an organic entity, and fieldwork in both rural and urban areas. These give rise to chapters on The Old Community, Parish, Manor, and Land, Church, Chapel, and School, the Topography of Towns, their Social and Economic History, Fieldwork on Landscape and Buildings, and Health, Disease, and Population. The author is often original and always informative, practical, and stimulating.

Few criticisms are provoked. Selective in content, the book is not meant to provide a comprehensive introduction to sources, but guide books (p. 26), civil parish records (c. 4), Land Utilisation Survey Reports (p. 59), and

Geological Survey *Memoirs* might have been mentioned, and the value of museum material should have been stressed. 'English Local Historians' (c. 2) is most interesting but, except for the last section, seems out of place. Advice on the technique of note-making would have been helpful. Finally, if we remember Dr Hoskins's own criteria, is Nathan's *Annals of West Coker* really an example to be followed (p. 170)?

The minor nature of these criticisms speaks for itself. This is a most valuable book. Leland was driven mad by his studies. Certainly careful reading of *Local History in England* should save both amateur and professional investigators, as well as their readers, from this fate.

ROBERT DOUCH

JAMES R. BARCLAY and ALEXANDER KEITH,
The Aberdeen-Angus Breed—a History.
The Aberdeen-Angus Cattle Society, 1958.
xvi+744 pp., illus. No price stated.

This is less a straightforward history of the breed than a detailed and valuable collection of facts and information about it. It is fifty years since a history of the Aberdeen-Angus last appeared. The present work was begun by the late James Barclay, who was for thirty-six years secretary of the Society. It has been completed by Alexander Keith who succeeded him as secretary.

Much of the book is devoted to summaries of show successes at home and abroad over the years; but there are also useful chapters on the early pioneers and notable early herds. The book concludes with a survey of the export trade which has been of such importance to Angus breeders, and notes on the more important modern herds. It is well illustrated and will provide a most useful source-book for all those interested not only in Angus history, but in the history of British livestock.

R. TROW-SMITH, *A History of British Livestock Husbandry, 1700–1900*. Routledge and Kegan Paul, 1959. x+352 pp., illus. 40s. In this volume Mr Trow-Smith contributes a sequel to his earlier *History of British Livestock Husbandry to 1700* and thus brings the

story up to the end of the nineteenth century. On the completion of this work he deserves congratulations, for we at last possess a valuable, modern, and well written work on the development of British livestock. This volume provides a worthy successor to the first and may even find a wider market, as it deals with a period of more immediate interest to those concerned with modern livestock.

A lot of what Mr Trow-Smith has to say will already be familiar to historians as he draws widely on published sources, but it is none the less valuable for this, particularly as he has gathered together contemporary and modern material on many controversies and re-valued them. The stature of Bakewell, for example, does not diminish in his account, but at the same time the contribution of lesser men, such as Webster of Canley, who have never had their due, is made clearer. There is a useful analysis, too, of the spread and importance of winter feed crops in the eighteenth century.

The author is at his best when telling the story of the development of the breeds. When he moves to other subjects he sometimes proves weaker. The nine lines devoted to transhumance contribute little, the material on marketing could have been strengthened, the whole subject of horses gets rather slight treatment, and the three pages on the veterinary revolution in the nineteenth century merely leave the reader anxious for more. It is perhaps also a valid conclusion to say that as the sources become more prolific in the late nineteenth century, the result seems less satisfactory, but it would be wrong to seem ungrateful for the great task which Mr Trow-Smith has undertaken. The two volumes now form a work which will be a standard one for many years to come.

J. W. Y. HIGGS

REGINALD LENNARD, *Rural England, 1086–1135. A Study of Social and Agrarian Conditions*. Oxford, Clarendon Press, 1959. viii+410 pp. 45s.

This learned and original work is described by the author, formerly Reader in Economic

History in the university of Oxford, as "an attempt to describe the economic conditions of rural life in England during the Norman period." It is a study not of agricultural techniques, for which the evidence is wanting, but of agrarian history, of the great feudal estates and the holdings of the peasants, of the methods by which the land was exploited, and of the various classes of men who dwelt on and worked the land. The book deals with five major topics: the make-up and distribution of the estates of the Church and of the greater feudal lords; the management of these estates; the relation between manor and village; the economic and social condition of the peasants; and, finally, the parish churches, their endowments and their clergy. The evidence, largely derived from Domesday and the surveys of the next half-century, is complex and often confusing, and, as the author insists, does not lend itself to easy generalization. It is, indeed, a major purpose of the present work to re-examine and revise the conclusions of earlier workers in this same field.

The England which the Normans conquered was already an "old country," a country long settled. It was also, after the Norman occupation, a country of vast agricultural estates, in which less than 200 tenants-in-chief held rather more than half the total value of the land. The manors of which these estates were composed were, for the most part, widely dispersed and of very varying value. How then were they exploited? Mr Lennard shows that farming-out of estates was a much more common practice than has hitherto been suspected, that many manors described as "in demesne" were in fact put to farm, that most farms were held on leases for cash payments, and that stock and land leases were frequent. The obligations of the lessees, the conditions of tenure, and the relations between the farmers and the manorial tenants are discussed in detail.

Domesday Book was compiled on the assumption that the country was more or less fully manorialized. The implied identity between manor and village has long been known to be an illusion, and the author shows that

the 'normal' village is a conception closer to reality than the 'typical' manor, and that the contrast between the relatively unmanorialized Danelaw and some parts of the north, and the rest of the country, is not to be exaggerated. A wide variety of tenurial arrangements was matched by considerable variety in the agrarian economy. If agriculture held pride of place, mining and milling, pig and sheep farming, and other minor industries played an important part in the national economy. The same wide variety is again apparent in the social conditions of the peasants. Men who were, from the legal point of view, of the same status, differed greatly in their economic conditions, and, as the author insists, the peasants of England did not form a single class. Local and regional differences, at times of a bewildering complexity, once again emphasize the danger for the historian of accepting at their face value the classifications of the Domesday commissioners.

The student of English ecclesiastical history will be grateful to Mr Lennard for a long and admirable discussion of the parish churches and clergy of Norman England, and in particular for his account of the decline and disintegration of the minsters of the late Old English period. On this, as on so many other matters, his work is clearly destined to be for many years to come a standard authority, and it is much to be desired that later editions will be supplied with a rather more adequate index.

GERARD CULKIN

HILDA GRIEVE, *The Great Tide*. xii+884 pp., illus. Essex County Council, 1959. 30s.

Presumably the purpose of the Essex County Council in publishing this book was to have some record for the benefit of future generations lest such a disaster as the tidal flood of 1953 should recur. Fortunately they entrusted the work to Miss Hilda Grieve, and they are to be congratulated on their judgement. It is not too much to say that she has produced a masterpiece. This is not merely an account of an administrative achievement. We are given an accurate history of the drainage system in Essex and an account of the meteor-

logical and oceanic conditions favourable to tidal surges. This account is not only accurate but interestingly written. As for the description of the actual flood as it progressed from Harwich to Barking Creek, this is not only interesting but exciting.

The disaster was not altogether unexpected, but certainly it was greater than those acquainted with tidal conditions would have supposed. It is clear from the account given that much able and devoted work was done by the local authorities, and it is fitting that special mention should be made of the Local Authority principally concerned, the Essex Rivers Board, and in particular to its vice-chairman who was in charge of the operations, and its clerk and engineer.

J. E. MAHER

BASIL E. CRACKNELL, *Canvey Island: The History of a Marshland Community*. Department of English Local History, University of Leicester, Occasional Paper No. 12. Leicester: The University Press, 1959. 48 pp., illus. 12s.

On the night of 31 January 1953 a large area of the east coast of England suffered severe inundation. Amongst the more seriously flooded areas was Canvey Island on the Essex shore of the Thames estuary. This was no new experience for the island. The first phase of its history in the Romano-British period, during which it was occupied by a community of salt-makers, was brought to an end by a great submergence towards the end of the second century. In the middle ages it produced sheep and cheese, but this settlement of shepherds was threatened towards the end of the sixteenth century by the sea. Accordingly Dutch engineers and workmen were called in to strengthen the island's defences. When this work was done a number of the Dutch workmen remained as farmers, forming a Netherlandish community. They stayed till the end of the seventeenth century and then unaccountably disappeared. Their place was taken by English farmers who flourished till they became victims of the agricultural depression of the late nineteenth century. In

1881 and in 1897 the sea walls were breached again. In recent years the island has been settled by an urban community, who have now to struggle not only against the sea but also against the threatening tide of industrialism. In this prize essay Dr Cracknell has outlined the story neatly and succinctly, though those wishing to pursue the subject further would have welcomed more bibliographical assistance. Once again the John Nichols Prize has evoked a most useful contribution to local history.

W. E. MINCHINTON

A. K. ASTBURY, *The Black Fens*. Golden Head Press, 1958. xii + 218 pp., illus. 42s.

This is a comprehensive account of the fens of the Isle of Ely. The author has devoted much study to the subject and it is clear from the acknowledgements in the preface that he has consulted those best able to give him information.

The book is not, as one might expect, a mere account of the drainage system. Much emphasis has been placed on what is the most difficult problem of peat sinkage, and there is an interesting account of the difficulties of building on a peat foundation. The passage on Rodhams and the Old Fen Meres throws light on a less well-known aspect of the subject. Indeed it tends to make one regret the success of fen drainage, as in the case of Winchelsea Mere. There is a considerable discussion on the old course of the rivers and on work carried out in Roman times. This, while bound to be speculative, considerably adds to the interest of the book.

J. E. MAHER

HANS-HELMUT WÄCHTER, *Ostpreussische Domänenvorwerke im 16. und 17. Jahrhundert*, Beiheft zum Jahrbuch der Albertus Universität, Königsberg/Pr., xix. Holzner Verlag, Würzburg, 1958. 186 + xxiv pp. DM 12. This is a study of farming and administration in the sixteenth and seventeenth centuries on a group of farms belonging to the Teutonic Knights in East Prussia. It was presented by the author as a thesis at the Georg-August

University, Göttingen, in 1957 under the supervision of Professor W. Abel, already well known to English readers for his studies of the agrarian depression in the later Middle Ages.

East Prussia was first colonized in the thirteenth century by the Teutonic Knights, but by the fifteenth century the great estates carved out in the first period of settlement had been broken down into smaller and smaller units until the country consisted of small peasant farms, many of which had been completely abandoned as a result of the depression. Rising prosperity in the sixteenth century caused the Teutonic Knights to take into their own hands again the farms which they had let on lease in the previous century, and this new policy gave rise to a collection of farm records on which Dr Wächter's work is based. They enable him to estimate the numbers of stock on the farms of the Order (rising to a peak in the early years of the seventeenth century and declining thereafter), and to calculate seeding rates and the yield of crops. Sharp fluctuations in yields from year to year he attributes to the uncertain labour supply and secondly to the varying efficiency with which the farms were administered at different times.

All farms were organized for the production of grain for the market, rye being the chief crop, barley second in importance, and oats third. In the sixteenth century East Prussia became the corn supplier of Holland, England, and Germany. And as demand increased, so cattle and sheep numbers were increased in order to maintain the fertility of the fields. But the weakness of farm organization lay in the uncertainty of the labour supply. For whereas in England by this time nearly all farm labour was rendered by wage

workers, the farms of the Teutonic Knights still depended to a large extent on the labour services of the peasantry. Shepherds, hop cultivators, and some other skilled workers were engaged on special contracts, sharing their expenses and profits with their employers, and some work was done by cottagers (*Gärtner*) who, in return for a house and some land, undertook a certain number of days' work on the farm each year and were paid wages for additional work. But labour services were indispensable, and when the farming boom of the sixteenth century gave way to depression in the seventeenth, landlords who attempted to increase their demands for services from the peasantry found themselves clutching in distress at a straw. The peasants, already hard pressed by bad harvest, plague, and deepening poverty, fled to Poland or to the towns. Dr Wächter's story ends, therefore, on the same melancholy note on which it begins. In 1508 over 45 per cent of the holdings in three districts near Königsberg were deserted. At the end of the seventeenth century 55 per cent of the peasant holdings on twenty-eight estates of the Order were empty.

Dr Wächter makes much of the effects of war and associated bad harvests and plague in accounting for the seventeenth-century depression in East Prussia. But he brings forward no evidence to show their precise effect upon the individual farms which he has studied. The seventeenth-century depression was not an exclusively Prussian phenomenon. It seems to have affected the whole of Europe in varying degrees, as war did not. Hence, scholars interested in economic trends in the seventeenth century will find much in this book to strengthen the argument for a "general check to economic development" in this period.

JOAN THIRSK

Books Received

- V. BONHAM-CARTER, *Farming the Land*. Routledge and Kegan Paul, 1959. 162 pp., illus. 15s.
- N. M. DRUZHININ, V. K. SIVKOV, V. K. YATSUNSKII, and A. M. ANFIMOV (eds.), *Material on the History of Agriculture and Peasantry of the U.S.S.R.*, Volume III. Academy of Sciences of the U.S.S.R., Institute of History, Moscow, 1959. 494 pp. 19p. 30k.
- R. H. HANCOCK, *The Rôle of the Bracero in the Economic and Cultural Dynamics of Mexico*. Hispanic American Society, Stanford, California, 1959. 146 pp. No price stated.
- A. HARRIS, *The Open Fields of East Yorkshire*. East Yorkshire Local History Series, No. 9. The East Yorkshire Local History Society, 2 St Martin's Lane, Micklegate, York, 1959. 26 pp. 3s.
- ALLAN JOBSON, *An Hour-Glass on the Run*. Michael Joseph, 1959. 184 pp., illus. 18s.
- L. S. PROKOFJEVA, *The Patrimonial Estate in the Seventeenth Century from the Materials of the Spaso-Prilufsky Monastery*. Academy of Sciences of the U.S.S.R., Moscow. 178 pp. 8p. 90k.
- M. G. SERGEENKO, *Sketches on the Agriculture of Ancient Italy*. Academy of Sciences of the U.S.S.R., Moscow, 1958. 246 pp., illus. 12p. 40k.
- AXEL STEENSBERG, *Bonder*. G.E.C. Gads Forlag, Copenhagen. 94 pp., illus. No price stated.
- S. I. VOLKOV, *Peasants of the Estates Cognizable in the Palace Court in Moscow District in the Middle of the Eighteenth Century (30th to 70th years)*. Academy of Sciences of the U.S.S.R., Institute of History, Moscow, 1959. 262 pp. 9p. 40k.
- N. A. YEGIZAROVA, *Agrarian Crisis by the End of the Nineteenth Century in Russia*. Academy of Sciences of the U.S.S.R., 1959. 192 pp. 7p.

NOTES AND COMMENTS (continued from page 46)

Prehistoric Archaeology. Professor Piggott also read a short paper by Mr R. B. K. Stevenson, Keeper of the National Museum of Antiquities of Scotland, who was unfortunately unable to attend. After lunch in the University Union, the afternoon session opened with a paper by Mr Malcolm MacSween on A Geographer's Approach to Agrarian Change in Scotland after 1700, and he was followed by Mr J. A. Symon, who spoke on the Boom and Slump in Scottish Agriculture in the Early Nineteenth Century. The conference concluded with a visit to the School of Scottish Studies during which tea was served.

ARRANGEMENTS FOR BINDING

Messrs Hill & Pavier, of 47 Ouseley Close,

Marston, Oxford (telephone number Oxford 49343), have been appointed binders of the AGRICULTURAL HISTORY REVIEW. They will bind Volumes I-V in one case and Volumes VI and VII in one case. In the future the Society will issue a title-page with every second volume in order that they may be bound in units of two volumes. The case will be green cloth board embossed with 22-carat gold and bearing the words "The Agricultural History Review" at the top and the volume numbers and date at the bottom. There will be a line of gold decoration at the top and bottom. The cost per binding will be 24s. plus postage. Members who wish to take advantage of this arrangement should send their copies of the REVIEW direct to Messrs Hill & Pavier, together with the title-pages.

Rural England 1086-1135

A STUDY OF SOCIAL AND AGRARIAN CONDITIONS

R. Lennard

'... an austere but, in an unobtrusive way, a stimulating study of every aspect of rural England in the first two generations after the Conquest. . . . Everything in this book has the air of having been long and deeply pondered. It embodies the results of a lifetime of quiet, meticulous work. . . . He writes with the familiarity of one who has lived with his material, and what he says can be trusted unreservedly.' *THE ECONOMIST*

45s. net

OXFORD UNIVERSITY PRESS

FOLK

AN ANNUAL JOURNAL PUBLISHED BY
DANSK ETNOGRAFISK FORENING
Danish Ethnographical Association, Copenhagen

Vol. II, to appear in the spring of 1960, will contain:

Kaj Birket-Smith: Jens Kraft. A Danish pioneer of Ethnology. *Niels Fock*: South American Birth Customs in Theory and Practice. *M. I. H. Davidsen*: Quelques observations sur le folklore égyptien. *Klaus Ferdinand*: The Baluchistan Barrel-vaulted Tent. Supplementary material from Iranian Baluchistan and Sistan. *Inger Wulff*: The so-called Priests of the Ngadju Dyaks. Balian and Basir. *George Nellesmann*: Mitârneq. A West Greenland Winter Ceremony. *Gottfried Polykrates*: Einige Holzschnitzereien der Kashuena-Indianer. *Torben Monberg*: Research on Rennell and Bellona. A preliminary report. *Fridolin Weis Benzon*: Notes sur la vie musicale d'un village sarde.—Annual Report 1958 of the Ethnographical Department of the National Museum (in Danish).—Selected Bibliography of Danish Anthropologists 1959.—Meetings of the Danish Ethnographical Association in 1959.

Editor: JOHANNES NICOLAISEN, Dansk Etnografisk Forening,
Nationalmuseet, København K.

Price of subscription per year is 20 Danish Kr., or equivalent in other currency. Subscription should be ordered through RHODOS Forlag, Wiedeweltsgade 55, København Ø.

SCOTTISH HISTORICAL REVIEW

VOL. XXXIX

NO. 127

APRIL 1960

CONTENTS

ARTICLES

The Covenanters in the First Civil War

By C. VERONICA WEDGWOOD

The Scottish Australian Company 1840-50

By DAVID S. MACMILLAN

Two John Crabbs

By E. W. M. BALFOUR-MELVILLE

DOCUMENT

The Execution of Mary, Queen of Scots

By G. R. BATHO

REVIEWS

Thomas Ferguson, *Scottish Social Welfare*, 1864-1914

Reviewed by Professor G. S. PRYDE

Miscellany of the Scottish History Society

Reviewed by RANALD NICHOLSON

SHORT NOTICES

NOTES AND COMMENTS

The Scottish Historical Review is published twice yearly (in April and October) by Messrs Thomas Nelson & Sons Ltd, Parkside Works, Edinburgh 9; it may be obtained from any bookseller or direct from the publishers. The annual subscription is 21s. post free; single issues, 10s. 6d. (postage 6d.).

THOMAS NELSON & SONS LTD
PARKSIDE WORKS, EDINBURGH 9

THE ECONOMIC JOURNAL

No. 277

MARCH 1960

VOL. LXX

I. ARTICLES

How Much Science?

J. JEWKES

Progress in British Manufacturing Industries in the Period 1948-54

W. B. REDDAWAY and A. D. SMITH

The Structure of Macro-Economic Models

R. G. D. ALLEN

Growth Models, Capital and Stability

H. A. J. GREEN

Notes on some Controversies in the Theory of International Trade

J. BHAGWATI and H. G. JOHNSON

The Short-term Effect of the Lowering of Import Duties in Germany

J. WEMELSFELDER

The Social Choice between Home and Overseas Investment

A. E. JASAY

Production Functions and Land—A New Approach

SIR RALPH HAWTREY

II. REVIEWS

III. NOTES AND MEMORANDA

IV. RECENT PERIODICALS AND NEW BOOKS

MACMILLAN & CO. LTD, LONDON. W.C.2

Application for Fellowship to
ROYAL ECONOMIC SOCIETY
21 Bentinck Street, London, W.1

The British Agricultural History Society

PRESIDENT: SIR KEITH MURRAY

TREASURER: PROFESSOR EDGAR THOMAS, C.B.E.

EDITOR: H. P. R. FINBERG

SECRETARY: J. W. Y. HIGGS

Oxford University Department of Agriculture, Parks Road, Oxford

Executive Committee: George Ordish (*Chairman*), Miss H. A. Beecham, M. W. Beresford, G. B. Bisset, W. H. Chaloner, G. E. Fussell, Alexander Hay, R. H. Hilton, W. G. Hoskins, W. E. Minchinton, F. G. Payne, Mrs Joan Thirsk.

The Society aims at encouraging the study of the history of every aspect of the countryside by holding conferences and courses and by publishing *The Agricultural History Review*. Its constitution is printed in Vol. I of this *Review*, p. 53.

Membership is open to all who are interested in the subject and the subscription is ONE GUINEA due on 1 February in each year. Details may be obtained from the Secretary.

The Agricultural History Review

Editorial Board

H. P. R. FINBERG

W. E. MINCHINTON

G. E. FUSSELL

JOAN THIRSK

J. W. Y. HIGGS

R. TROW-SMITH

The Review is published twice yearly by the British Agricultural History Society and issued to all members. Single copies may be purchased from the Secretary for 12s. 6d. Articles and letters offered for publication should be sent to the Editor, 34 Sheffield Terrace, London, W.8, accompanied by a stamped addressed envelope for return if necessary. The Society does not accept responsibility for the opinions expressed by contributors, or for the accidental loss of manuscripts.

Printed at The Broadwater Press, Welwyn Garden City, Herts.

The AGRICULTURAL HISTORY REVIEW



VOLUME VIII 1960

PART II

*

PRINCIPAL CONTENTS

Chalk, Heather, and Man

by A. S. THOMAS

*

The Pattern of Settlement on the Welsh Border

by G. R. J. JONES

*

Sources for Scottish Agrarian History before the
Eighteenth Century

by GORDON DONALDSON

*

Selion Size and Soil Type

by H. M. CLARK

PUBLISHED BY
THE BRITISH AGRICULTURAL HISTORY SOCIETY

THE AGRICULTURAL HISTORY REVIEW

VOLUME VIII PART 2 · 1960

CONTENTS

Chalk, Heather, and Man	<i>A. S. Thomas</i>	page 57
The Pattern of Settlement on the Welsh Border	<i>G. R. J. Jones</i>	66
Sources for Scottish Agrarian History before the Eighteenth Century	<i>Gordon Donaldson</i>	82
Selion Size and Soil Type	<i>H. M. Clark</i>	91
The Long and Short Hundred in Agrarian Statistics	<i>Reginald Lennard</i>	99
Regional Farming in Seventeenth-Century Yorkshire	<i>W. Harwood Long</i>	103
Reviews:		
<i>The Brewing Industry in England, 1700-1830</i> , by Peter Mathias	<i>W. H. Chaloner</i>	116
<i>De agrarische geschiedenis van West Europa (500-1850)</i> , by B. H. Slicher van Bath	<i>G. E. Fussell</i>	116
<i>Scottish Farming Past and Present</i> , by J. A. Symon	<i>Alexander Fenton</i>	117
<i>The Agrarian Origins of Modern Japan</i> , by Thomas C. Smith	<i>K. Ugawa</i>	119
<i>The Place-Names of Derbyshire</i> , by K. Cameron	<i>Joan Thirsk</i>	120
<i>Bibliography of British History: Tudor Period</i> , by Conyers Read	<i>A. M. Everitt</i>	121
<i>The New Cambridge Modern History</i> , Vol. XII	<i>Norman Scarfe</i>	122
<i>The Story of Cheese-Making in Britain</i> , by Val Cheke	<i>Alexander Hay</i>	122
<i>Traction Engines</i> , by Philip A. Wright	<i>J. Simmons</i>	123
<i>The Agricultural Register. Changes in the Economic Pattern, 1957-9</i>	<i>Edith H. Whetham</i>	123
<i>A History of the County of Oxford</i> , Vol. VI, ed. Mary D. Lobel	<i>G. H. Martin</i>	123
<i>Cockle Park Farm</i> , by H. Cecil Pawson	<i>W. Harwood Long</i>	124
Periodicals received		126
Letter to the Editor		98
Notes and Comments		90, 102, 114
Notes on Contributors		115

Chalk, Heather, and Man

By A. S. THOMAS

THE beautiful English chalk downs, south of the River Thames, are of special interest to archaeologists and botanists; yet there is a great difference between the ways in which the downs are regarded by these two groups. The archaeologists recognize the downs as a centre of intense and prolonged human settlement; Curwen pointed out that the system of upland corn-growing persisted on the Sussex downs for 1,200 years, from the Late Bronze Age to Saxon times. Furthermore, Bowen has shown that there has been much sporadic ploughing on the downs in medieval and later times, so that the pattern of 'Celtic' fields has been altered or effaced in many places. Cornwall considered that "In our region, the plough has frequently spared only such structures and deposits as lay beyond its reach."¹

Many botanists, however, tend to stress the wild nature of vegetation on the downs; some even talk of "virgin downland." Perring in a survey of the literature on chalk grassland included the human factor merely in relation to the effect of grazing and made no mention of cultivation.² Disregard of cultivation has led to the suggestion that chalk heaths—areas where plants typical of acid soils are found on chalk downs, as described by Tansley³—might be formed on wind-blown loess-like material laid down over the chalk in the Bronze Age.⁴ But the area of chalk heath at Lullington is covered with a pattern of 'Celtic' fields and cultivation probably continued there until the coming of the Saxons.⁵ Wind-blown deposits might be expected to accumulate on level ground, but most remaining patches of chalk heath are on slopes, as the chalk plateaux have largely reverted to arable land.

The Nature Reserve at Lullington is one of the largest surviving patches of chalk heath in the south of England. It has altered greatly since myxomatosis exterminated the rabbits which swarmed there until 1954; where there used to be short grass and bell heather (*Erica cinerea*), which is unpalatable to rabbits, the grass is now much longer and the bell heather is being overshadowed by ling (*Calluna vulgaris*), formerly closely grazed by rabbits.

¹ E. C. Curwen, *The Archaeology of Sussex*, 1954, p. 165; H. C. Bowen, 'The Study of Ancient Fields', *The Advancement of Science*, LVI, 1958, pp. 366-8; I. W. Cornwall, *Soils for the Archaeologist*, 1958, p. 49.

² F. Perring, 'A Theoretical Approach to a Study of Chalk Grassland', *J. Ecol.*, XLVI, 1958, pp. 665-78.

³ A. G. Tansley, *The British Isles and their Vegetation*, 1949, p. 551.

⁴ R. M. S. Perrin, 'Nature of Chalk Heath Soils', *Nature*, 178, 1956, p. 31.

⁵ A. S. Thomas, 'Nature of Chalk Heath Soils', *Nature*, 179, 1957, pp. 545-6.

Gorse and other shrubs are spreading rapidly and are tending to obscure the pattern of the heath; the heathers and other plants which need acid soils are not evenly distributed over the level ground, as they would be if growing on deposits laid down over the chalk, but are concentrated on the scarps of the 'Celtic' fields and on the lower sides of the fields, just above the scarps.

A typical scarp near the north-west corner of the Lullington reserve is shown in Fig. I; it faces almost due south. Many years of ploughing must

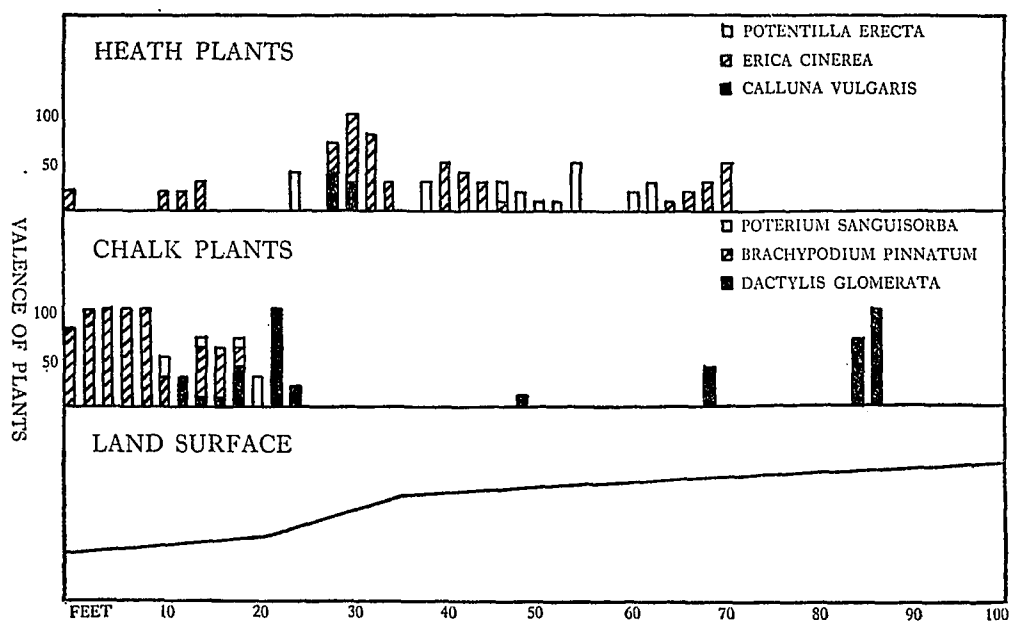


FIG. I

Lullington, 'Celtic' field scarp.

have been needed to build up the bank of earth and chalk rubble at the lower side of the field; the land which was cultivated is still not level, having a slope of 3 degrees above the scarp and of 5 degrees below it; the scarp itself has a slope of about 16 degrees. To get an objective indication of the vegetation, a steel tape was laid down over the scarp, a standard point-quadrat frame was placed at intervals of two feet along it, and all the flowering plants which touched each point were recorded.

Many of the plants were species which grew under a wide range of soil conditions. In order to demonstrate differences in the vegetation along the short transect, in Fig. I there are summarized the valences (the proportions of points which touched any given species) of three plants of heath soils—ling (*Calluna vulgaris*), bell heather (*Erica cinerea*), and tormentil (*Potentilla erecta*)—and of three plants typical of chalky soils—cock's foot (*Dactylis*

glomerata), tor grass (*Brachypodium pinnatum*), and salad burnet (*Poterium sanguisorba*). The diagram illustrates two points:

1. In grassland which has remained undisturbed for a long time, species which require an acid heathy soil may often grow very close to plants which need a soil rich in lime.
2. The greatest concentration of heath plants was not on the nearly level plots, formerly under the plough, but on the upper part of the scarp, on a slope of 16 degrees, and on the land just above the scarp. By contrast, the greatest concentration of chalk-loving plants was at the bottom of the scarp and in the field just below it, where the plough had penetrated deepest into the chalk.

Ploughing has obliterated most of the 'Celtic' field systems in the south of England; in spring and autumn, when the ground has been cultivated for seed sowing, the pattern of soil and chalk will show how many ancient small fields may be combined in one large modern one. But wherever untouched 'Celtic' fields still persist, any heath on them is associated with the tops of the scarps rather than with the more level ground. This fact is well demonstrated on Newtimber Hill, the beautiful National Trust property in Sussex.

The slopes of Newtimber Hill are covered with rather coarse grassland, in which species typical of chalk downs predominate, and the top of the hill is covered with scrub intermixed with grasses such as Yorkshire fog (*Holcus lanatus*) and sweet vernal grass (*Anthoxanthum odoratum*), which often grow on wetter, less alkaline soils. On the west side of the hill, near the top of the slope, there is a large scarp on which ling is plentiful, although there is little of it either below or above the scarp.

At one place below the main scarp there is a small patch, only about twenty yards long, where heath plants cover a series of small scarps, as shown in Fig. II. As at Lullington, the heath plants—ling and tormentil only, for no bell heather was recorded—were most abundant on the scarps and just above them, especially on the steepest and highest scarp, lying between 60 and 70 feet on the transect, and having a slope of 35 degrees.

A second transect was recorded on Newtimber Hill, about fifty-five yards south of the first, on the same part of the slope, with the same aspect, but where there were no scarps—only a fairly uniform slope of about 13 degrees or 14 degrees. The results, shown in Fig. III, demonstrate great differences between the vegetation on the smoother hillsides, typical of Newtimber Hill, and that on the small terraced patch shown in Fig. II. Chalk grassland, such as was growing below the terraces, was also growing on the same contours as the terraces and only a short distance from them. The only feasible explanation seemed to be that much of the hillside had been terraced by ancient

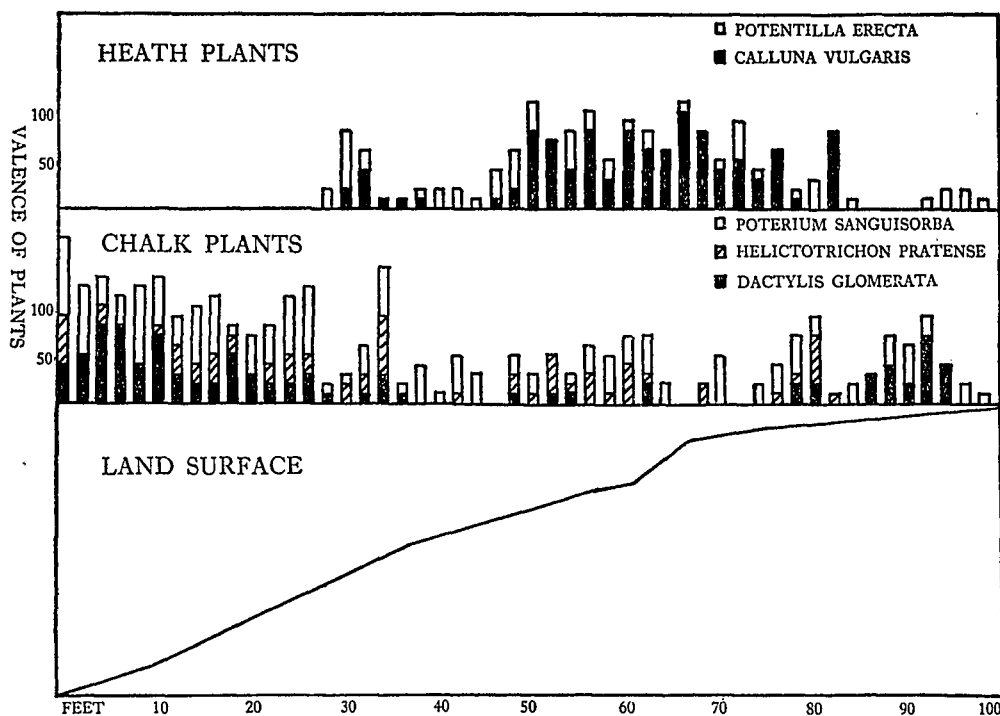


FIG. II

Newtimber, terraces.

cultivation and was largely covered with heathy plants, but that later cultivation had effaced the terraces and, by bringing up some of the chalk, had made the surface soil less acid. This explanation was confirmed by Mr H. C. Bowen, who inspected the site. But why had one patch been left unploughed? Had there been a building on it?

There are very many other instances where patches of ling and other heath plants are growing on mounds or banks, but are absent from smoother downland turf nearby. One of the most interesting stretches of downland in the south of England is that which covers the escarpment on the north side of the Pewsey Vale in Wiltshire; the great differences between the vegetation on some of the hills, close to each other, having the same aspect and derived from the same layers of chalk, show that the turf must have been greatly altered by human influence.¹ No bell heather was found on the escarpment and only a few patches of ling, which were on some mounds on Milk Hill, at the top of the gully to the west of it, and on a bank—possibly of Iron Age date—below Gopher Wood.

¹ A. S. Thomas, M. Rawes, and W. J. L. Banner, 'The vegetation of the Pewsey Vale escarpment', *J. Brit. Grassl. Soc.*, XII, 1957, pp. 39-48.

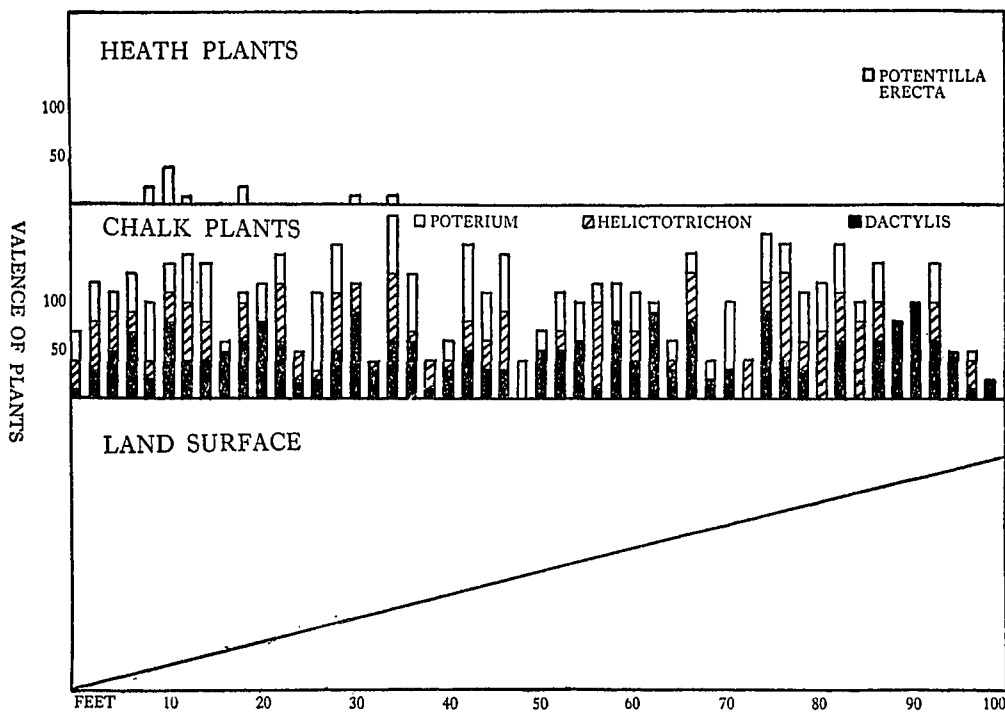


FIG. III
Newtimber, hillside.

Similarly on Overton Down, about four miles to the north of Milk Hill, air photographs show ridges of ploughing over 'Celtic' fields;¹ and no heather or ling was to be found there, except on some mounds of one small shoulder, protruding from the general line of the down and on that account left unploughed.

Most of the land at the base of the downs, even the bottoms of narrow valleys, has been under the plough in recent years. Kingley Vale, near Chichester, is one of the few valleys which have escaped recent cultivation and this Nature Reserve protects many ancient fields and many patches of heather, as well as the magnificent yew trees. There is much heath on the clay and gravel which covers the plateau, true chalk heath at the edge of the escarpment; and there is ling and dwarf furze (*Ulex minor*), a typical heath plant, growing on some scarps near the bottom of the valley.

In many of the examples cited above, the heath plants were growing on well-defined scarps, approximately on the contour. They have also been found on low, ill-defined banks running down chalk slopes, banks less than a foot high, but broad; to the botanical eye, these banks are obvious from the

¹ O. G. S. Crawford and A. Keiller, *Wessex from the Air*, 1928, p. 124.

heath plants growing on them and not from their topography. These heathy banks are quite different from the high banks of cross-ridge dykes, on none of which definite heath vegetation has been noted, and which are usually covered with chalk-loving plants.

The bands of heath were first noted on the spur in the south-east corner of the Kingley Vale reserve. There were low banks about twenty yards apart, running southwards on a slope of about 8 degrees, and on them were growing not only ling and bell heather, but also trees and shrubs such as bramble, hawthorn, and yew. One band of heath was especially interesting, for a bowl barrow lay across it, and heather was growing on this barrow; there was no heather on the large bell barrows which dominate the skyline of Kingley Vale, or on many other barrows which have been searched.

A transect across the band of heath, about twenty-five feet north of the barrow, is shown in Fig. IV. Heath plants were sparsely scattered in the grassland, but they were concentrated on the low bank between 20 feet and 30 feet on the transect; conversely, chalk plants were scarce on the bank. The idea that chalk-loving trees might grow on the same low bank down a chalk slope as were the patches of heath, served to throw light on the puzzling occurrence of heath on the sides of the main gully at Kingley Vale, where bell heather was noticed at the base of a yew tree on a slope of 22 degrees, and by itself on a slope of 25 degrees. It seemed unlikely that chalk heath should be formed on so steep a slope, for inversion of the soil as it moved downhill was likely to prevent acidity at the surface. And then it was noted that the patches of heath were usually in line with irregular lines of yew trees; this was well shown by a line of yews down the head of the gully.

The same idea explained the puzzling distribution of plants on a steep slope near the north-east corner of the Old Winchester Hill Nature Reserve near Petersfield. It had been noted that the trees in a young yew wood near the base of the slope tended to be in lines; and then it was found that in some cases there were patches of ling on slopes above, as steep as 23 degrees, and that there might be hawthorns near the top of the slope, all in the same line. Furthermore, the lines tended to be parallel. Where the slope faced west, the lines ran straight up and down; but where the hill curved around to face south-west, the lines were inclined and ran diagonally down the slope. One of the larger banks, with yews at the bottom, with a large patch of heath on a slope of 16 degrees near the centre, and with a yew and hawthorns above, was at an angle of 13 degrees with a line directly up and down the slope. Once one bank had been seen, traces of others at distances of about ten yards west and twenty yards east could be discerned. Not only heath and shrubs, but the rabbit holes also tended to be in the same lines, evidence of made-up soil, for

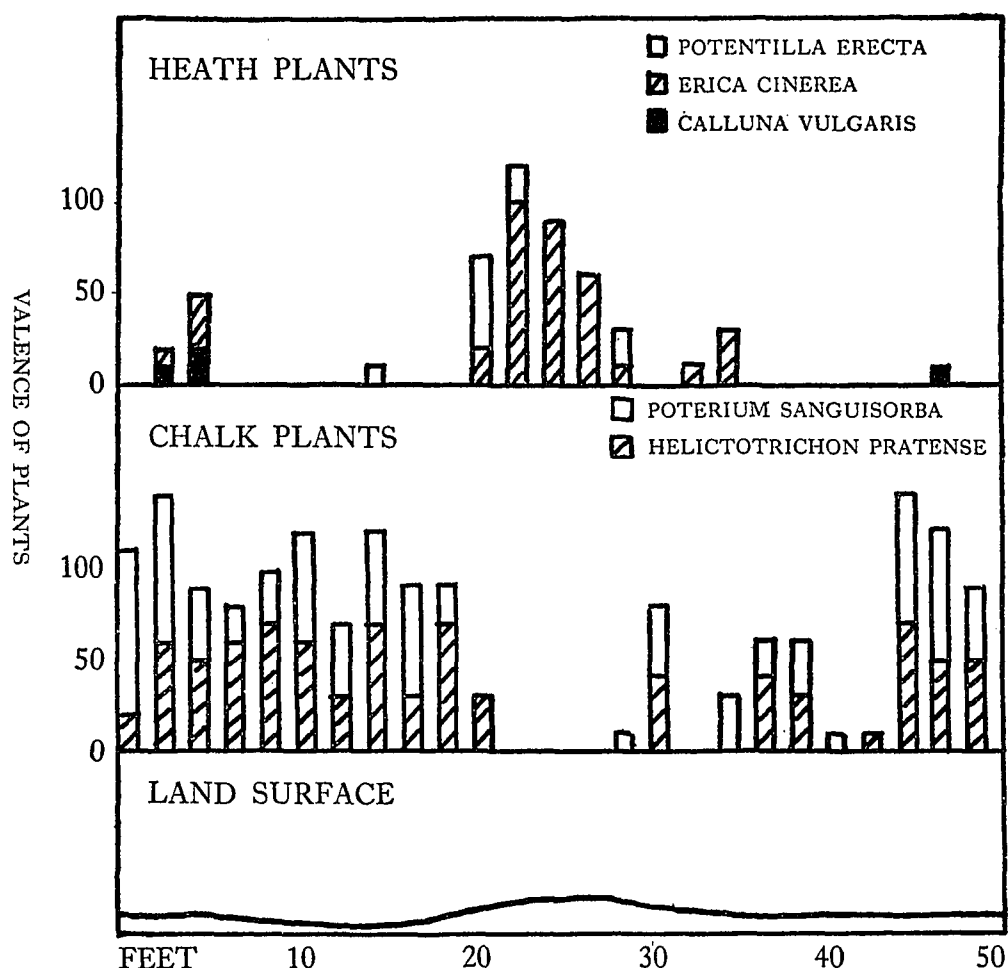


FIG. IV
Kingley Vale, belt of heath.

many of the rabbit burys on the downs are on tumuli or the scarps of fields.

The sparser lines and patches of heath on steep slopes at Kingley Vale seemed also to show the same tendency to be parallel, and to be inclined to the slope on the east side of the gully. Even better examples of bands of heath running down a chalk slope were found on Turnworth Down, about a mile south of Okeford Fitzpaine in Dorset; dark strips of heath, about twelve yards apart and separated by pale strips of grassland, ran down a north-facing slope of about 15 degrees. On a slope east of that bearing the heath, belts of shrubs such as elder and hawthorn ran down the slope.

Belts of heath down steep slopes seem rare on the Sussex downs, where most of the searching for them has been done; lines of shrubs are frequent,

and they often show the tendency to be parallel and inclined to the slope. Even where shrubs are absent, there may be a tendency for lines to show in the grass, as on Windover Hill near Eastbourne, where the lines run up and down the head of the gully, but are inclined where the slope curves around.

What is the cause of these lines? They do not follow the strata of the chalk; they can hardly be caused by wind. They do not seem to arise from paths; man-made paths are usually at the heads of gullies or at the ends of spurs; sheep paths have much influence on the vegetation but tend to be on the contour;¹ badger tracks tend to fan out over the slopes.

In tropical Africa, where steep slopes are cultivated by hoes, the rubbish is thrown into rows like the belts of trees and shrubs to be seen on the chalk in England. Therefore it seems possible that many of the chalk slopes of southern England, too steep for ploughing, have been cultivated by hand at some time; Bowen has said that some of the slopes were hoe-tilled in Romano-British times. Some of the bands of heath and shrubs may date from this time; some, like the one associated with the bowl-barrow at Kingley Vale, may be older. Not only the plough, but the hoe also may have had much influence on soils over the chalk.

Denudation of chalk has probably been much more rapid than was formerly supposed,² and this fact will help to explain the formation of chalk heath on level sites; it will not fully explain the preponderance of heath on some slopes. Is it not possible that the acid surface soil is not derived from the chalk, but from plant remains deposited on top of it? This theory would explain the growth of heath in bands down some slopes and on the scarps of 'Celtic' fields, for it is on the scarps that the weeds would be dumped when the fields were weeded by hand. And it might explain the absence of heath from areas of level ground over the chalk, known to be undisturbed, such as the east part of Hod Hill which is only three miles from the heathy slope of Turnworth Down.

A very puzzling phenomenon has been the presence of patches of ling on the steep south or south-west faces of Iron Age embankments; at Old Winchester Hill the ling is growing on a slope of 33 degrees and at Cissbury Ring on a slope 30 degrees; and in both cases the slopes must have been much steeper when the embankments were built of chalk rubble. Even if there had been rapid denudation of chalk when exposed to the full heat of the sun and the full force of driving rain, yet it is surprising that acid surface soils should have been formed on these embankments, when none has been obvious on

¹ A. S. Thomas, 'Sheep paths', *J. Brit. Grassl. Soc.*, XIV, 1959, pp. 157-64.

² P. A. Jewell, 'Natural History and Experiment in Archaeology', *The Advancement of Science*, LIX, 1958, pp. 165-72.

much older Neolithic camps. Is it not possible that the acid shallow surface was derived from a rotting palisade and not from the chalk?

Experience at Old Winchester Hill has shown that a thin layer of organic material may allow heath plants to grow above the chalk. After myxomatosis killed off most of the rabbits in 1954, dead grass accumulated on the turf inside the camp, so that by 1957 the living grasses were being suppressed and were being replaced by other plants, including heath plants like tormentil. Now, after two seasons of winter grazing, the layer of dead grass has gone and the turf is reverting to that of normal chalk downland. The animals seemed to eat little of the dead grass; it was mostly destroyed by their treading, a fact that may partly explain the persistence of chalk heath on slopes which are not grazed and trodden so much as level ground. Once patches of heath had been formed, might they not have maintained themselves under the British climate, unless destroyed by burning, cultivation, or treading?

Nearly all the level ground and the more gentle slopes on the chalk of southern England are now under arable crop or leys; repeated ploughing has smoothed out the 'Celtic' fields, even some of the larger lynchets. Heavy tractors, bulldozers, and winches are now being used to clear many of the steeper slopes. It is highly desirable that a study should be made of the patterns of heath, shrubs, and trees, on these slopes, and of the soils, before it is too late.

SUMMARY

In many cases where heath plants are growing on shallow soil over the chalk in southern England, they are concentrated on the scarps of 'Celtic' fields, on banks, or on mounds. In a few cases, the heath plants are in patches or bands on low banks running down the slope, sometimes at an angle; shrubs and trees may frequently be seen in lines on slopes too steep for ploughing.

It is suggested that the lines of heath and of shrubs on slopes must indicate former cultivation by hand; and that the shallow acid soils on which the heath plants are growing may be derived, not from the chalk, but from plant residues accumulated during the work of clearing land for crops, or of weeding the crops while they were growing.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made of all the help received from Mr H. C. Bowen, both in the field and in the writing of this paper; and of the kind permission of the National Trust to record the vegetation on Newtimber Hill.

The Pattern of Settlement on the Welsh Border

By G. R. J. JONES

IN the zone which incorporates the western border counties of England and the adjoining marcher lordships of Wales the existence of an important cultural frontier has long been recognized, although like all such boundaries it cannot everywhere be defined precisely in topographic terms. To Seebohm, in his study of the English Village Community, it was clear "that in the eleventh century, as it had done previously for 400 years, the river Wye separated by a sharp line the Saxon land, on which the manorial land system prevailed, from the Welsh land on which the Welsh tribal land system prevailed."¹ Likewise Gray, in his analysis of English Field Systems, attempted to demonstrate that the boundary between the Celtic System and the Midland System passed through this zone.² The purpose of this paper is to reveal some of the major factors which underlie the arrangement of farmsteads within the zone. As the references to Seebohm and Gray imply, however, such an analysis must be based not simply on the patterns of farmsteads as they exist today, important though these are both as starting-points and as links in the chain of evidence, but also on the social and economic aspirations of the communities which created these patterns and modified them through past ages.

For the student of settlement this border zone, where the tides of struggle between English and Welsh ebbed and flowed over centuries, presents an embarrassment of problems, but adequate answers have hitherto been all too few. Why, for example, should the isolated farmstead, often set in the midst of its own fields, abound on the Welsh side of the border and yet co-exist there alongside small nucleated hamlets? How was it that both these forms of settlement were associated until recently with unequivocal traces of open field? Were the Welsh hamlets simply a product of late and sporadic diffusion from the counties on the English side of the border where in Domesday times the hamlet of one or two ploughlands was by far the most frequent unit of settlement, or were these hamlets of an earlier origin? Similarly on the English side, for example, can the contrasts between the three-field system formerly associated with the hamlets of Herefordshire and the irregular

¹ F. Seebohm, *The English Village Community*, 1905, p. 208.

² H. L. Gray, *English Field Systems*, 1915, pp. 83-271.

open-field system of 'forest' areas be explained away simply as an expression of early, as opposed to late, colonization?

The attempt made in this paper to answer these questions will be based almost entirely on Welsh evidence. The English evidence, examined and re-examined since the late nineteenth century, is already sufficiently familiar to members of the British Agricultural History Society. To English eyes, on the other hand, the Welsh evidence is still obscured in something akin to a Celtic twilight. The Welsh countryside is still too readily interpreted as a pastoral reserve where Welsh Abrahams with their tribes roamed at will until the late Middle Ages, and the scattered farms of modern Wales are interpreted as a direct expression of these arrangements. This is in part due to the oversimplified equation of pastoralism with the accidented relief and moist climate of Wales, an equation all too easily made, given the predominance of animal husbandry in modern Wales. A moment's reflection on the need for grain in a self-sufficing economy during the Middle Ages should have been sufficient to cast doubts on this interpretation, but in the nineteenth century, when studies of rural settlement were initiated, the theory of unilinear social evolution held sway. Since this theory emphasized, in Darwinian terms, that pastoralism inevitably preceded cultivation, no such doubts arose. Nor were these earlier views unpalatable to Welshmen, for, well versed in Biblical lore, they were not unwilling to link their oldest traditions with those of the Hebrews of old. Welshmen readily imagined their forbears as free tribesmen, practising an almost exclusively pastoral economy, with some no doubt looking down in contempt upon the settled servile cultivators of the English plain. Englishmen on the other hand found solace in the belief that their Saxon forbears were at a more advanced stage of social and economic evolution than the tribal Welsh. For these reasons, and perhaps also because of prejudices against the "primitive communism" envisaged by Morgan and Engels,¹ earlier investigators have consistently underestimated the importance of the evidence for social stratification in early Celtic society, and in particular for the existence of a settled servile population. Closer examination of the Welsh evidence within recent years has revealed that there was not simply one Celtic system, as Gray would have it, but, in the centuries following 1100 A.D., two fairly distinctive Celtic systems. On the one hand there were communities of bondmen who normally resided in small nucleated hamlets; on the other hand there were corporate groups of freemen, which can be described technically as agnatic 'clans', whose members frequently resided in more widely dispersed homesteads.

¹ Cf. E. E. Evans, 'The Ecology of Peasant Life in Western Europe', in W. L. Thomas (ed.), *Man's Role in Changing the Face of the Earth*, 1956, p. 231.

I

Pride of place in this account can be given to the second of these systems, since this is probably the least familiar to students of agrarian history. Each clan occupied a resting place, otherwise known in Latin as a *lectus* and in Welsh as a *gwely*. This resting place was a permanent stake of arable land which entitled the clan members to grazing rights over extensive common pastures. Sometimes one resting place was confined within the limits of a single township or vill, but often one resting place would embrace land within a number of widely scattered townships.¹ Frequently, as a result, any one member of a clan might hold his stake of arable land in a number of townships often several miles apart; but even within any one township the arable 'lands' (*selions*) of any one clansman were usually scattered through a number of small patches of open-field arable, known as sharelands.

The average endowment of the typical member of a free clan at the close of the thirteenth century was less than ten acres of arable land, a figure which implies that even the most widely scattered 'lands' could not be neglected because of their remoteness or difficulty of access. Sometimes distant 'lands' were held and cultivated by undertenants, but usually these problems of distance were overcome by means of co-operation. Individuals would frequently undertake to plough 'lands' for each other so as to obviate frequent journeys to and from distant sharelands. The other major aspects of agrarian co-operation concerned the grazing of animals. The prevalence of spring cereals, mostly oats, meant that the arable sharelands were available as common fallow pastures in winter. Similarly the common pastures within each township were preserved for use in winter, a practice made possible by the grazing in summer of large upland wastes which, like the shire-moors of Northumbria or the wealds of Kent, were common to a large number of townships.

Each resting place had originated when the eponymous ancestor of the clan, or his immediate predecessor, was permitted to appropriate arable land in a place often referred to as the Old Settlement (*Hendref*). This arable land, subject to equal division *per stirpes* among male heirs, soon became an open-field shareland (*rhandir*). Partible inheritance, by reducing the share of any one heir in the first area occupied, made necessary a territorial expansion away from the Old Settlement on to sites commonly less favourable from a physical standpoint within the territories over which the nascent clan exer-

¹ T. Jones Pierce, 'The Gafael in Bangor Manuscript 1939', *Transactions of the Honourable Society of Cymmrodorion*, 1942, pp. 162-88; G. R. J. Jones, 'Some Medieval Rural Settlements in North Wales', *Transactions and Papers 1953, Institute of British Geographers*, 1954, pp. 51-64; 'Medieval Open Fields and Associated Settlement Patterns in North-West Wales', in X. de Planhol (ed.), *Géographie et Histoire Agraires*, 1959, pp. 314-22.

cised rights of pasture. With most heirs links of sentiment, reinforced by a shrewd awareness of the superior quality of the Old Settlement lands, led to an early fragmentation of the typical Old Settlement. As a result, the largest shares of most heirs came to lie in the newer sharelands and it became convenient for many an heir, on first inheriting, to establish his homestead away from the Old Settlement. To economize on arable land, which has always been the scarce factor of agricultural production in Wales, the homesteads of many heirs were frequently built on the outer edges of the newer sharelands. Since the average shareland rarely contained more than 100 acres, there frequently developed what may be described as girdle patterns of dispersed dwellings, the shape of each girdle flexibly adapted to that of the contour and its dimensions dependent on those of the nuclear shareland.¹

Few of these girdles have survived, for the resting place contained within itself the seeds of a fairly rapid decline. Partible inheritance appears to have encouraged a high rate of population growth, and thus the perpetuation of the *gwely* system was dependent upon the opportunities for territorial expansion. There were obvious geographical and technical limits to this process, and as soon as this stage was reached the continued operation of *gavelkind* reduced the arable stakes of some heirs below the economic minimum. At this stage, some individuals with greater resources could buy up the holdings of any one heir, and as a result adjoining 'lands' were gradually consolidated into compact blocks.² In most areas this consolidation had already taken place by the opening of the sixteenth century and many of the consolidated blocks had been enclosed with hedges or banks. Similarly, if not simultaneously, enclosed pastures were carved out of the hitherto undivided common pastures within the townships. Estate consolidation transformed many sharelands, and notably the oldest sharelands on the best soils, into large, consolidated, and thus isolated farms often of 250 acres or more, with, for Wales, correspondingly large enclosed fields. To this day, however, remnants of sharelands and girdle-patterns, fossilized at the partial stage of consolidation, are still to be found, especially in that northern portion of the border zone which lies west of the present national frontier.

II

Hamlets inhabited by small groups of bondmen were the characteristic units of settlement under the first Celtic system, which as we shall see was

¹ G. R. J. Jones, *op. cit.*, 1959, pp. 316-17: 'The Distribution of Medieval Settlement in Anglesey', *Anglesey Antiquarian Society Transactions*, 1955, pp. 27-33, 68-73, 77-9.

² *Ibid.*; T. Jones Pierce, 'Agrarian Aspects of the Tribal System in Medieval Wales', in X. de Planhol, *op. cit.*, pp. 329-37.

certainly the older of the two systems. Although it would be rash to claim that every bond settlement was invariably a hamlet, Welsh law makes it clear that the ideal bond settlement of the Middle Ages was a unit containing nine houses closely grouped together. The complement of this ideal hamlet was one plough, one kiln for the drying of corn, one churn, one cat, one cock, one bull, and one herdsman who cared for the common herd. Each hamlet was encompassed or adjoined by an open-field shareland, beyond which lay the common pasture, parts of which were 'mountain land' (*terra montana*) periodically subject to temporary cultivation.¹ Thus constituted, the hamlet was the local unit of both pastoral and agricultural co-operation, but in addition every hamlet was part of a wider group known as a *maenor*, which for agrarian purposes was subject to the control of a land mayor (*prepositus*). In return for their labour services and rents, which were heavy as compared with those of the freemen but light by English manorial standards, bondmen of these hamlets were allowed by the lord of each commote or administrative neighbourhood to exercise rights of occupation over their small areas of arable land and permitted to graze their livestock on the lord's wastes. These rights were shared equally *per capita* among the adult males of each hamlet community; thus the arable land was subject to re-division and re-allocation with any change in the size of the adult male population of the hamlet. The lowly status of these bondmen was emphasized by the control to which they were subject even for the most mundane farming activities. The land mayor was responsible not only for allocating lands to the bondmen but also for deciding which crops were to be grown and which plots were to be cultivated. The actual cultivation was conducted by all tenants in common but the mayor was responsible for allocating to each a rôle in the common tillage, and until this was done no cultivation could be commenced. Each bondman garnered the produce of his own plots, but thereafter all plots became common once more and served as pasture until the next tillage.

Within each commote there were a number of bond hamlets, but by far the most important was the hamlet where the mayor resided and which was known therefore as the mayor's settlement (*maerdref*). Within a short distance of each mayor's settlement was the court (*llys*) of the lord of the commote; accordingly the lands of each mayor's settlement embraced fairly large areas of demesne land or board land (*tir bwrdd*) used for the sustenance of the court. Such land, normally the most suitable for cultivation within the commote, was worked on behalf of the lord by the bondmen of the *maerdref* and the outlying hamlets of the commote working under the supervision of the land mayor.

¹ G. R. J. Jones, *op. cit.*, 1959, pp. 320, 327-8.

Few of the bond hamlets of Wales have survived, for reasons which are closely bound up with the conditions of bond-land tenure. The rents and services imposed on each hamlet were a communal obligation, so that if but one tenant survived he was to have the whole hamlet in return for all the rents and services imposed on the hamlet. A decrease in the bond population such as occurred during the Great Plague meant a corresponding increase in the burdens of the survivors. Not unnaturally many bondmen took advantage of the turmoil of the later Middle Ages to escape their obligations by flight, so that many bond lands and demesnes, now held by the English Crown or by Lords Marcher, fell into decay.¹ As a result these lands provided a favourable field for the activities of estate-consolidators who by means of legitimate leases, or even illegitimate encroachments from adjoining *gwely* land, gradually converted bond land, or intermingled bond and demesne land, into compact farms. Consequently most of the bond hamlets in medieval Wales have disappeared. Nucleated settlements survived only where there were favourable local conditions to promote such a survival. The two extremes of survival and disappearance are best illustrated by reference to the northern borderland.

The mayor's settlement of Meliden, home manor of the bishop of St Asaph, provides clear evidence of the survival until relatively recently of medieval and even older arrangements (Fig. I). In 1357 there were no less than 358 acres of arable in demesne, the greater part being on those soils rich in lime and having a favourable crumb structure which are known today to the soil scientist as brown earths of high base status. Some two-thirds of this arable, which was divided between the bishop and the Chapter, lay intermingled in the open fields with the selions of the tenants, but 134 acres of arable, 12 acres of meadow, and an orchard were held in severalty by the bishop. This land in severalty presumably lay in the vicinity of the Old Court (Hens Llys) about a quarter of a mile north of the hamlet; for here by 1839 a large and fairly well consolidated farm of the same name had emerged, although field names like *Maes-y-dre* (the Township open field) and *Talard hirion* (*sic*) (Long headland) make it clear that this land too had once lain in open field.² As late as the eighteenth century the court rolls reveal that the community of the hamlet still exercised certain communal responsibilities, for in 1734 the township was fined for not having a pinfold and stocks. Appropriately enough, in the same year one inhabitant of the hamlet was fined

¹ T. Jones Pierce, 'Some Tendencies in the Agrarian History of Caernarvonshire during the Later Middle Ages', *Transactions of the Caernarvonshire Historical Society*, I, 1938, pp. 1-27.

² P.R.O., Ministers' Accounts, 1143/23; Tithe Redemption Commission, Apportionment and Map, Meliden Parish, 1839.

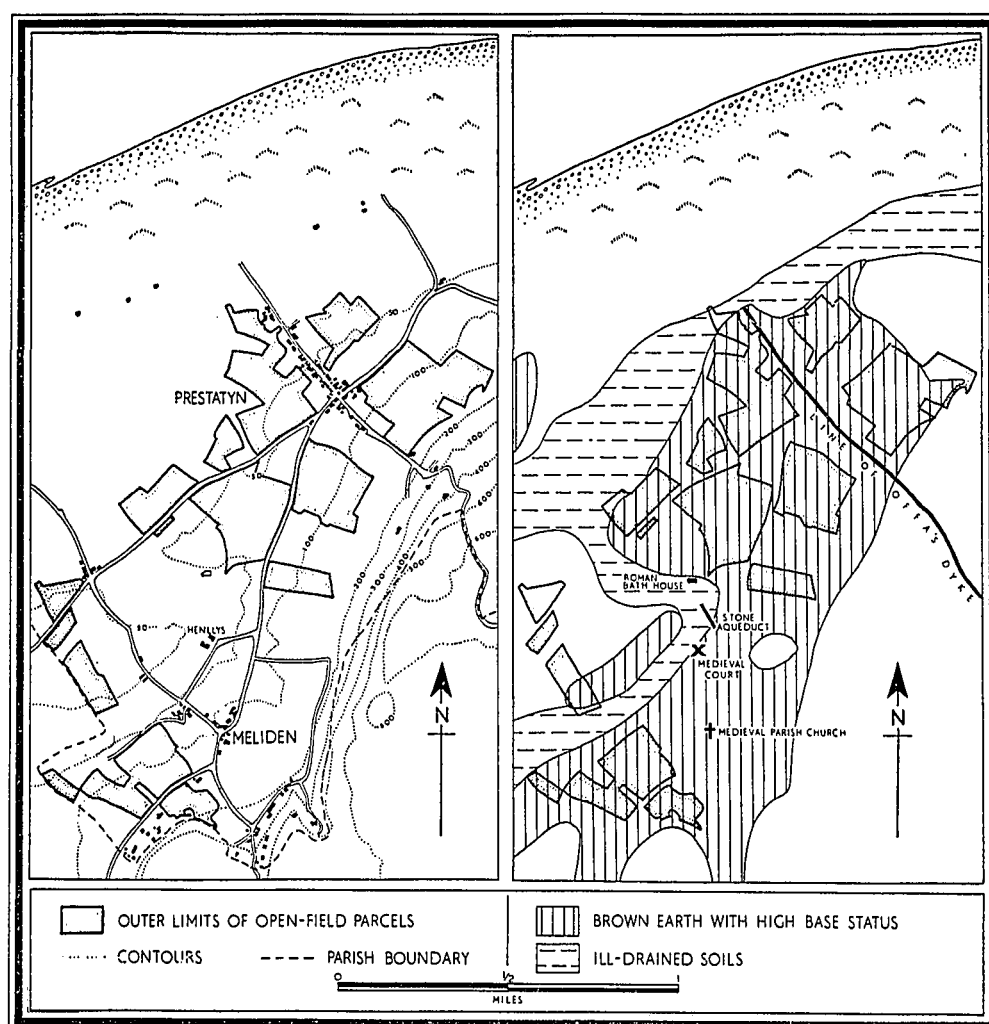


FIG. I

for not laying open three enclosures.¹ Enclosures were however permitted on payment of fines, and by 1839 open-field arable was confined to the southern part of the township. The hamlet of Meliden, which in 1699 had contained twelve houses "by the church,"² survived despite these changes, though by 1839 it was being increasingly overshadowed by the squatters' cottages erected on the common upland pasture to the east and the dispersed farmsteads which had been established in the west as a result of the consolidation and enclosure of the open fields. At Meliden, as in the neighbouring secular mayor's

¹ National Library of Wales: E.C.E. MSS., 215790; N.L.W., MSS., 4353, 14542 F; Plymouth MSS., 158.

² R. H. Morris (ed.), *Parochialia*, 1909, pp. 55-6.

settlement of Prestatyn (which provides an even more striking instance of late surviving open field), the persistence of a community of smallholders in the initial nucleus of settlement was closely bound up with opportunities to combine agriculture with other activities. Not only were conditions here favourable for the production of corn, but in addition the smallholders were not entirely dependent on the produce of their scattered 'lands', for the copper mine in the south of Meliden was an important source of supplementary income.¹

By way of contrast, at Dinorben, seven miles to the south-west, conditions were less favourable for the development of supplementary activities, for the mayor's settlement occupied an interior site on the southern flank of a low limestone ridge (Fig. II). As a result the arable lands of the hamlet community which in 1334 had lain intermingled with some 50 acres of demesne, were already at an advanced stage of consolidation by the sixteenth century. By the eighteenth century these lands had been incorporated into a single farm known appropriately as Fardre (a mutated form of the name *Maerdref*). Where formerly had stood a small hamlet, adjoined by a church and corn-drying kiln, there now stand but the substantial buildings of a single large farm.²

III

Strictly speaking, the sharp distinction between free clans and bond communities, drawn for the sake of clear exposition in earlier sections of this paper, was not true of medieval Wales. Earlier investigators assumed that resting places resulted from the settlement of one or more freemen on lands which somehow or other had escaped settlement or even permanent cultivation until a late date, variously interpreted as ranging between 900 and 1400 A.D. Even Jones Pierce, who was the first to demonstrate that the resting place was an institution which developed only after 1100 A.D., adhered to this virgin-land theory.³ Closer examination of the evidence, however, has shown that resting places frequently developed on land formerly occupied by bondmen, who were often granted along with the lands they tilled to the free founders of clans. Significantly enough, the oldest resting place of which we

¹ Tithe Redemption Commission, Tithe File 14338; P.R.O., Home Office, Enumerators' Returns, Meliden Parish, 1841.

² P. Vinogradoff and F. W. Morgan (eds.), *Survey of the Honour of Denbigh*, 1914, pp. 230-3; P.R.O., Miscellaneous Books Land Revenue, 235, ff. 21-6; T.R.C., Tithe Apportionment and Map, St George Parish, 1840.

³ T. P. Ellis, *Welsh Tribal Law and Custom in the Middle Ages*, I, 1926, p. 147; T. Jones Pierce, 'Medieval Settlement in Anglesey', *Anglesey Antiquarian Society Transactions*, 1951, pp. 7-9.

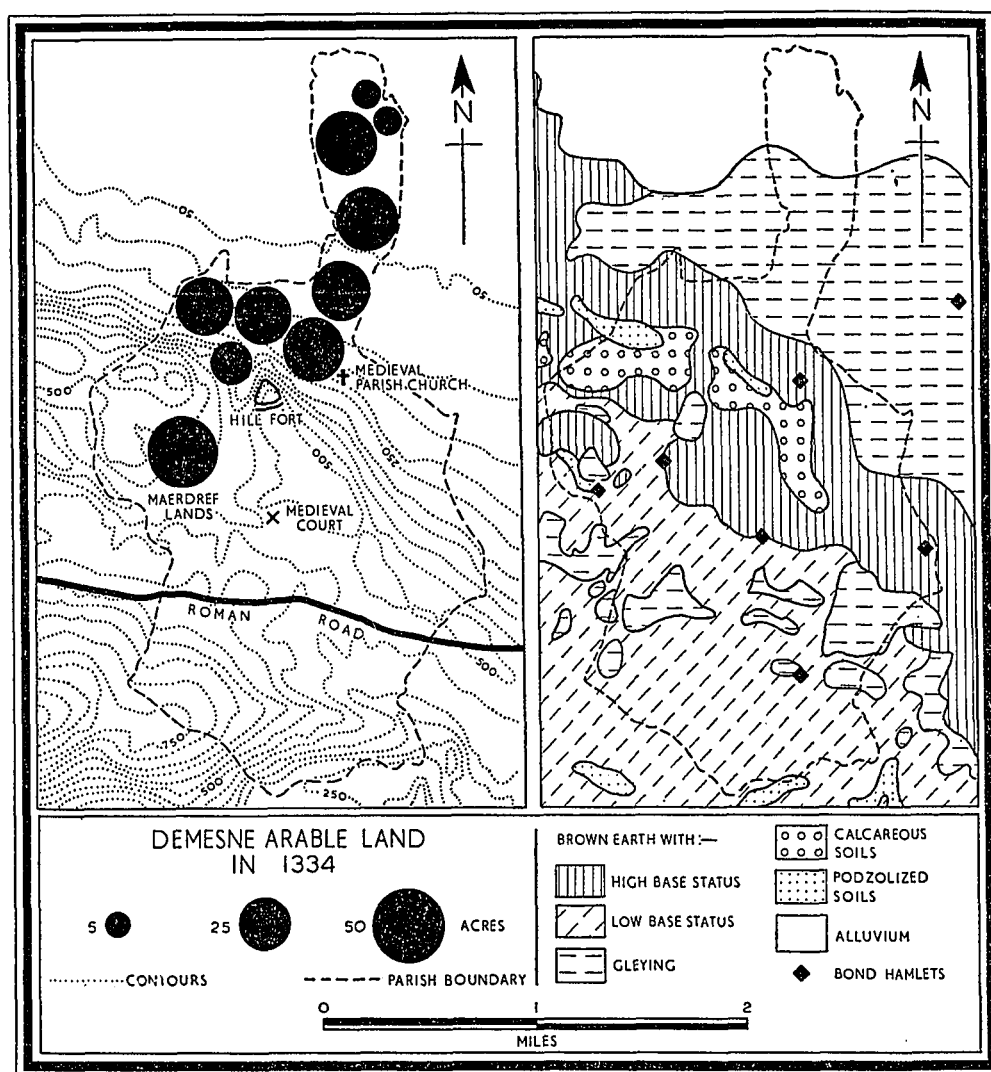


FIG. II

have record is that which developed after Elidyr, son of the prominent free-man Rhÿs who held Erbistock in 1066, was allowed to appropriate land on the border of the mayor's settlement of Llandegla in the years following the first Norman impact on the northern border of Wales. From this *pied à terre* west of the Clwydian Hills his descendants looked eastwards for lands to settle, and by 1315 the 97 adult males of this clan held land in no less than ten other settlements in an area often exposed to the ravages of war and formerly tributary to the mayor's settlement of Wrexham.¹

¹ Illustrated in G. R. J. Jones, 'Rural Settlement: Wales', *Advancement of Science*, xv, 1959, pp. 338-42.

The emergence of such resting places caused the disappearance of many bond hamlets. A parallel process whereby some bond communities were enfranchised and permitted to hold land by resting-place tenure had a similar result. It follows therefore that before 1100 A.D. bondmen were probably more numerous and freemen were certainly less numerous than is indicated in late medieval records. Domesday Book provides ample testimony to this effect for the area of the border. Each of the Welshmen described as living by Welsh law at Caerleon had one plough team,¹ and should be regarded as 'notables' (*uchelwyr*), or prominent freemen, rather than as humble freemen characteristic of later centuries when large clans had emerged and landed resources had been subdivided. The same is probably true of the individual Welshmen recorded for the border as paying substantial rents and frequently owning whole plough teams. Suggestion hardens into certainty in Gwent (Monmouthshire) where Berddig, a Welshman and the king's minstrel, held in 1086 three villas containing five plough teams on the same easy terms as had been imposed by the Welsh king Gruffydd. These and seven other villas had formerly been part of a *maenor* of fourteen bond hamlets which had been broken up in order to endow prominent freemen.² But that such freemen were but a small minority is indicated by the existence alike in Gwent, Archenfield, and Moldsdale of *maenors* embracing 7, 13, or 14 bond hamlets, some of which were still under the control of Welsh land mayors left undisturbed in office.³

Although Domesday Book provides concrete evidence for the existence of groups of bond hamlets, and even records a unit named Maenor (Mainaure) in Archenfield, this alone is unlikely to satisfy those who adhere to the belief that the vast majority of Welshmen were free tribesmen and in economy semi-nomadic pastoralists. Fortunately therefore it can be demonstrated that the two mayor's settlements of Meliden and Dinorben considered above are of some antiquity.

The hamlet of Meliden was the oldest settlement in the parish of Prestatyn, for here was located the parish church recorded in Domesday Book. In 1086 Meliden was linked to Prestatyn and both were small bond settlements, but their earlier history was quite distinct. According to an account recorded in the medieval records of St Asaph, Meliden was granted to St Kentigern by the Welsh ruler Maelgwn Gwynedd in the sixth century A.D.⁴ Although it is

¹ *Domesday Book*, I, p. 185b. ² *Ibid.*, p. 162a.

³ *Ibid.*, pp. 162a, 181a, 267b; J. E. Lloyd, *A History of Wales from the Earliest Times to the Edwardian Conquest*, II, 1948, pp. 357-99.

⁴ National Library of Wales: Peniarth MS. 231.B., *Liber Ruber Asaphensis*, 200-2; St Asaph MS. B/22, *Alter Liber Pergamenus*, f. 1 verso.

difficult to substantiate this claim, Meliden does appear to have been old-established. Its name, like that of all other settlements in this area west of Offa's Dyke, is of Welsh origin, whereas neighbouring Prestatyn was originally known by the English name Preston.¹ Nor is it unlikely that this Preston was named after the pre-existing priest's *tun* immediately to the south-west. For defensive reasons the Preston which became Prestatyn was a long narrow settlement built along the line of Offa's Dyke, the frontier work constructed in the late eighth century,² which still underlies the High Street. It follows therefore that Meliden was certainly in existence before this date. But a still greater antiquity is implied for Meliden by the discovery, to the north of the Old Court, of traces of a Roman bath-house and other structures which have been interpreted as the remains of a villa associated with the fortress at Chester.³ The Old Court, ascribed here by local tradition to Maelgwn Gwynedd, occupied a site so close to that of the villa that one is tempted to equate the court with the villa and ponder the question whether the social stratification between the Welsh lord and his bondmen did not already exist on Welsh soil in Roman times.

A conclusive answer to this question would undoubtedly be regarded as premature on the basis simply of the Welsh evidence, yet the evidence already available for Dinorben indicates that the answer should be in the affirmative. As the prefix *din* indicates, Dinorben, like a significant number of other bond settlements in Wales, was named after the immediately adjoining hill-fort. Dinorben, which had been a centre of importance in the Dark Ages,⁴ appears in 1334 as a manor and *caput* of the commote of Rhos Isdulas. All the freemen of this commote were responsible for the upkeep of the buildings of the court, but the actual construction of these buildings was a duty borne by the bondmen of five hamlets appendant to Dinorben.⁵ The medieval court was sited to the south of the hill-fort, then known as Pendinas, but in earlier centuries was probably within the ramparts, where the spade of the archaeologist has revealed a succession of substantial huts.⁶ One was a circular structure (of Little Woodbury type) dated to the third and fourth centuries A.D., when it was inhabited, or so numerous coins would suggest, by an affluent

¹ B. G. Charles, *Non-Celtic Place-Names in Wales*, 1938, pp. 230-1.

² C. Fox, *Offa's Dyke*, 1955, pp. 5-28.

³ R. Newstead, 'The Roman Station, Prestatyn', *Archaeologia Cambrensis*, xcii, 1937, pp. 208-32; *Ordnance Survey Map of Roman Britain*, 1956, and Introduction, p. 33.

⁴ J. G. Evans (ed.), *The Black Book of Carmarthen*, 1906, p. 69.

⁵ *Survey of the Honour of Denbigh*, pp. 215-16, 220, 222-3, 225-8, 239, 268-9.

⁶ H. N. Savory, 'Excavations at Dinorben Hill Fort, Abergele (Denbs.)', 1956-7, *Bulletin of the Board of Celtic Studies*, xvii, 1958, pp. 296-309.

household.¹ In later layers, possibly of the fifth and sixth centuries A.D., there is evidence to suggest a large rectangular hall of the kind described in the Welsh laws and medieval extents as characteristic of a lord's court. The medieval court on the outskirts of each mayor's settlement in Wales was sometimes encompassed by a protective wall;² we can therefore envisage that the ramparts of a hill-fort served a similar purpose at an earlier stage of Celtic social development. Dinorben provides a clear answer to that question which for so long has puzzled archaeologists:³ what kind of social organization in the Early Iron Age made possible the construction of such large structures as this hill-fort, which embraced within multiple ramparts an area of no less than five acres? An undertaking such as this would have required control over the resources of an area far larger than the lands of one hamlet. The rents and labour services levied by the lord of Dinorben on the tenants of the appendant hamlets of his *maenor* provide testimony as to how the requisite control over the resources of a wide area was effected.

The evidence for Dinorben, moreover, gives some pointers as to the siting of these appendant hamlets in the sub-Roman period. For the manor as a whole detailed post-medieval records make it possible to locate with precision the arable demesne lands described in the survey of 1334. At that date there were some 300 acres of demesne arable which lay in three distinct types of physical setting. In the north the arable was located on brown earths subject to gleying, or in other words imperfectly drained; this imperfection of drainage was probably caused by the adverse effects on soil-water circulation of woodland clearance undertaken after 1311,⁴ for the area of arable demesne recorded in that year was less than half the figure for 1334. In the south the

¹ The site at Little Woodbury (Wiltshire) was interpreted as a lone steading of the type now commonly accepted as the unit of that dispersed settlement which many archaeologists regard as characteristic of the Early Iron Age in Britain. Analogy with Dinorben suggests, however, that Little Woodbury could equally well be interpreted as the *llys* of the local lord who ruled—probably among others—the adjacent lowland hamlet of Britford (the ford of the Britons).

² G. R. J. Jones, 'The site of Llys Aberffraw', *Anglesey Antiquarian Society Transactions*, 1957, pp. 5-7.

³ S. Applebaum, 'The Agriculture of the British Early Iron Age as exemplified at Figheldean Down, Wiltshire', *Proceedings of the Prehistoric Society*, xx, 1954, p. 14.

⁴ A. Muir, 'The Post-Congress Excursion Round Britain', *Transactions of the Third International Congress of Soil Science*, III, 1936, p. 266. I am indebted to Dr Muir, of the Soil Survey of England and Wales, not only for this observation concerning the effects of forest clearance on soil drainage, but also for permission to incorporate in my illustrations some hitherto unpublished results of the Soil Survey. Mr E. Roberts, formerly of Bangor, was kind enough to permit access to the unpublished maps of the Soil Survey.

Maerdref lands were sited on a slope at an elevation of about 450 ft, but some at least of these lands were favoured for grain cultivation alike by their south-facing aspect and their inherent quality as brown earths of high base status. Thus the state of affairs described in the survey of 1334, when the 52 acres of arable demesne at *Maerdref* were valued at only 6d. per acre (as compared with 1s. and 1s. 3d. per acre for the arable north of the ridge), and because of their exhaustion were used only as sheep pasture, is best attributed to long-continued cultivation. Cultivation of the *Maerdref* lands was probably initiated in fact when the site on which the hill-fort stands was first occupied in the fifth century B.C. For the remaining intermediate zone under demesne cultivation, evidence of a different kind suggests that lowland cultivation had an early beginning at Dinorben. The recent excavations of the hill-fort revealed an asymmetrical winged ploughshare in a layer containing numerous objects of late Roman and sub-Roman character. As Payne has demonstrated, such winged ploughshares were devised for the cultivation of heavy lowland soils.¹ This example at Dinorben was probably used for the cultivation, at the very latest by the sub-Roman period, of the band of lime-rich brown earths which extends along the northern foot of the limestone scarp. Taken in conjunction with that for Meliden, this evidence for the cultivation of the northern scarpfoot at Dinorben makes it clear that some of the appendant hamlets, like Cegidiog (St George) where the parish church was sited, could well have been established by the early centuries A.D. on those same fertile lowland sites they occupied in the Middle Ages.

IV

One question of critical importance for the student of settlement is whether this *maenor* organization, whereby a court was maintained by a network of appendant hamlets, existed on the English side of the border as well as in Wales. Seebohm envisaged a sharp division between English and Welsh social organization in this borderland and deliberately chose the manor of Tidenham, which was east of the Wye and in his opinion had probably been English since the battle of Deorham in 577 A.D., as a singularly useful example of the Saxon manorial system. Yet the feature which obtrudes from the evidence which he quoted for Tidenham is the similarity between this manor and the Welsh *maenor*. The rents and services demanded of the *geburs* or servile tenants of Tidenham were akin to those of Welsh bondmen; they were far lighter than the burdens imposed on the *geburs* of the pre-Con-

¹ F. G. Payne, 'The British Plough: Some Stages in its Development', *Agricultural History Review*, v, 1957, pp. 74-84.

quest *Rectitudines* of England or the burdens imposed on the villagers of the English Midlands in the Middle Ages.¹ Moreover, like the Welsh *maenor*, Tidenham was a discrete estate containing more than one significant settlement; interestingly enough one of the outlying hamlets of Tidenham was sited on and named after a Roman road, and a second bore the name Lancut which indicates that it was a Welsh church hamlet.

Elsewhere along the border the similarity between social arrangements and settlement patterns on both sides of the border was equally pronounced as late as 1086. Maesbury in north-west Shropshire was described in Domesday Book as a manor of 7 hides for geld with 5 berewicks where 10 Welshmen and a priest had 8 ploughs, and where 6 ploughs more could have been at work.² Later records make it clear that this Domesday description merely conceals a *maenor* at a late stage of development, where small free clans were about to emerge over and above the bond substructure. By the thirteenth century this lordship, now known as Oswestry, was composed of a large number of appendant villis inhabited by resting-place clans, and a small number of bond hamlets held by conditions reminiscent of Welsh bond tenure but modified by the superimposition of heavy labour services.³ The hill-fort of Old Oswestry enhances the parallel with Dinorben; as with Dinorben, its construction was probably made possible by that discrete organization (represented here in 1086 by the 5 berewicks of Maesbury and perhaps also the 8½ berewicks of the larger royal manor of Whittington) which enabled the resources of a wide area to be mobilized.

A little way to the south a "district of Wales" (probably Ceri and Cydwain) belonged in 1086 to the castellany of Montgomery, as also did 52½ hides for geld in 22 appendant hamlets.⁴ No less than 5 of these hamlets were still inhabited by bond communities holding land by Welsh bond tenure as late as 1540.⁵ Among them was Thornbury, named no doubt after the scrubby vegetation on the remains of the Roman fort built to protect the ancient Severn ford known as Rhyd Chwima. That this small settlement adjoining a strategic Roman fort should still house a Welsh bond community in 1540 is strong presumptive evidence that the network of hamlets focused on the new castle of Montgomery in 1086 was in being, at least in embryo, when the hill-

¹ F. Seebohm, *op. cit.*, pp. 148-59; see also W. Rees, *South Wales and the March*, 1924, pp. 165-73; A. J. Robertson (ed.), *Anglo-Saxon Charters*, 1939, p. 204; R. Lennard, *Rural England, 1086-1135*, 1959, pp. 364-8.

² *Domesday Book*, I, p. 253b.

³ W. J. Slack (ed.), *The Lordship of Oswestry, 1393-1607*, 1951, pp. 21-37, 142-171.

⁴ *Domesday Book*, I, pp. 253b, 254a.

⁵ J. R. W. Whitfield (ed.), 'The Lordship of Cause (1540-41)', *Transactions of the Shropshire Archaeological Society*, LIV, 1953, pp. 63-8.

fort of Ffridd Faldwyn, which towers above Montgomery Castle, was constructed during the Early Iron Age.

Similarly Domesday evidence can be advanced for many of the Iron Age forts of Shropshire, alike in the southern uplands and the northern lowlands. Of some twenty major forts,¹ not less than thirteen were adjoined by important lowland settlements which were either the heads of territorial hundreds or the centres of discrete estates with outlying members or berewicks; sometimes they combined both these attributes. Alberbury, below the Breiddin, was the head of a hundred whereas Wrockwardine, below the Wrekin hill-fort, was the head of a hundred and also the focus of $7\frac{1}{2}$ berewicks. Doubtless Wrockwardine was responsible for that organization of wide territorial resources which the construction of Wrekin hill-fort demanded. That Wrockwardine was overshadowed in 1086 by Shrewsbury, head of its own hundred and the focus of no less than 57 berewicks scattered in various parts of the county, is perhaps merely the result of those rearrangements which followed the supersession of the Wrekin and Wroxeter by another centre in the lowlands west of Haughmond hill-fort yet well protected by a pronounced meander of the Severn.²

Throughout the borderland a similar relationship between the Iron-Age hill-fort and the administrative arrangements which existed in 1086 can be discerned, but nowhere perhaps is this more striking than at the hill-fort of Abington near Leominster in Herefordshire. The great royal estate of Leominster, a *manerium* with 16 members of which some were up to six miles distant, was worked in 1086 by 29 ploughs on the demesne and no fewer than 201 ploughs of the tenants.³ Almost everywhere along the border a striking continuity in the administrative arrangement of settlements can be demonstrated between the prehistoric and medieval periods. This continuity appears to be more closely associated with the Iron-Age hill-fort, and to a lesser extent with Roman military installations, than with the relatively few Roman villas to be found along the border.

¹ L. F. Chitty, 'How did the Hill-Fort Builders reach the Breiddin?', *Archaeologia Cambrensis*, XCII, 1937, pp. 129-50.

² I am indebted to Dr Finberg for allowing me a preview of his forthcoming paper on 'The Political Background of Settlement in the Welsh Border'. This accords far more readily with the new thesis on the history of settlement advanced in this paper than any previous interpretation. The supersession of Wroxeter and Wrockwardine by Shrewsbury was probably not direct. Miss Chitty has recently suggested that Pengwern, the traditional early capital of Powys, was not at Shrewsbury as hitherto accepted by some authorities, but at the fort known as the Berth on an island site near Baschurch.—'Introduction to Shropshire Archaeology', *Archaeological Journal*, CXIII, 1956, p. 182. Baschurch, however, no less than Wrockwardine and Shrewsbury, was the head of a hundred in 1086.

³ *Domesday Book*, I, pp. 180a-181a.

The discrete estate or federal manor of England, though known to have been old-established, has always been ascribed to the outward expansion of settlement from villages first established by Anglo-Saxon pioneers.¹ Seebohm and all subsequent workers have assumed that the patterns of settlement in England and Wales were distinct *ab initio*, but the evidence presented in this paper shows that the patterns of settlement on the English and Welsh sides of the border had a common origin which dates back at least to the Iron Age. On both sides of the border the fundamental unit of settlement was the hamlet surrounded by its small patch of open field. In some areas favoured in their physical setting, for example parts of Shropshire, these hamlets developed into larger villages encompassed by more extensive open fields and were worked by an increasingly complicated field system until enclosure supervened. In Herefordshire on the other hand the three-field system emerged in association with the small nucleated hamlet. In forest areas like Morfe in eastern Shropshire clear traces of Celtic hamlet arrangements survived as late as the sixteenth century, though increasingly blurred by assarting and the creation of severalties.² On the Welsh side of the border hamlets survived far less frequently, as the large isolated farmstead on the site of Thornbury suggests. Sometimes this was a direct result of the consolidation of bond land which followed the flight of bond communities, but frequently the conversion of bond hamlets into the resting places of groups of kinsmen was an intermediate stage in this process alike in North and South Wales. But in the Welshries of the marcher lordships of South Wales large free clans did not emerge and the girdle of dispersed farmsteads rarely developed. The large clans with which earlier investigators were wont to people the whole of Wales emerged only along the more exposed frontiers of the late surviving independent principality of Gwynedd. That these large clans should have emerged here, rather than elsewhere in Wales, serves as a reminder that the geographical factors which condition the development of patterns of settlement are invariably very complex. In a border zone such as the one with which we have been concerned in this paper they include not only such factors as relief, soils, climate, and vegetation, which condition the various means of wresting a living from the soil, but also those space relations and lines of movement of importance to warring groups of men.

¹ For a recent example see T. H. Aston, 'The Origins of the Manor in England', *Transactions of the Royal Historical Society*, 5th Ser., VIII, 1958, p. 75.

² H. L. Gray, *op. cit.*, pp. 37-9, 93-7, 108, 139-56.

Sources for Scottish Agrarian History before the Eighteenth Century¹

By GORDON DONALDSON

FOR the period from the thirteenth century to the sixteenth a good deal of information about Scottish agriculture in certain parts of the country can be extracted from the records of the monastic houses. T. Bedford Franklin, *A History of Scottish Farming* (Nelson, 1952), makes use of this material, most of which is printed in the various cartularies,² though a certain amount is still unprinted.³

There are, however, regions for which material of monastic origin does not exist, either because there were no religious houses there or because houses existed for which no records have survived. It may, further, be taken as generally true that there are no records of lay landlords comparable to those of the ecclesiastical estates, and such information as is available about tenants, services, and holdings on lay estates can be obtained only from charters and similar documents among private muniments.⁴

The one important source from which supplementary information can be obtained for the late medieval period is the *Exchequer Rolls of Scotland*. These records, relating to the income of the Scottish crown, are in print down to 1600, but remain among the least exploited of the Scottish printed records. Being the record of the crown revenues, they state the income derived from the crown lands, which extended from Ross and Orkney in the north to the Borders in the south, and which included a great variety of types of land, including some in the west, like Kintyre and Bute. They touch on

¹ I am very greatly indebted to Mr J. D. Imrie, an Assistant Keeper of the Scottish Records, for the help he has given in the preparation of this article, the substance of which was read at the Conference on Scottish Agricultural History in Edinburgh, 26 September 1959. The sources mentioned are, except when otherwise indicated, in H.M. General Register House, Edinburgh. For detailed descriptions of them, see M. Livingstone, *A guide to the public records of Scotland*, 1905, and 'Accessions of public records to the Register House since 1905', in *Scot. Hist. Rev.*, xxvi, pp. 26-46. Reference may also be made to J. M. Thomson, *The public records of Scotland*, 1922.

² For lists of the printed cartularies, see *Sources and Literature of Scots Law*, Stair Soc., 1936, pp. 260-1, and G. R. C. Davis, *Medieval Cartularies of Great Britain*. There is similar material in *Melrose Regality Records* (3 vols., Scot. Hist. Soc.).

³ e.g., there is material relating to Scone in the possession of the earl of Mansfield.

⁴ As mentioned below (p. 87), many of these muniments are now in the Register House. Attention should also be drawn to the Register House Charters, a large collection, formed artificially, beginning in the twelfth century and calendared to 1600, with indexes of persons and places.

parts of the country for which the monastic records are silent, and the area covered is broad enough to allow of comparative figures for different regions. Primarily, the material consists of statements of the rents of the crown lands, showing the produce in some detail. The MSS. include nine volumes of rentals, of dates from 1476 to 1588 (included in the printed volumes), which show how the lands were let to tenants, on what terms, the extent of the holdings, and the sums paid in rents. As the series of rentals is consistent for a period of more than a century, sustained study is possible. There are also inventories of stock, and occasionally some items which present a vivid picture of the management of land in the fifteenth and sixteenth centuries.

Some examples may be given. We find in 1499 how the Grange of Bothkennar, containing $27\frac{1}{2}$ oxgangs, was let to eleven tenants, with holdings ranging from one to four oxgangs,¹ and we find in 1502 how the lands of Wester and Easter Ardet were let to fifteen tenants for various money rents along with 'carriages' and other services.² An account of the Grange of Darnaway, in 1505, shows that there were 11 stacks of oats, out of which payment of oats was made to the ploughman, the shepherd, the watchman, and so forth; there were five stacks of bear and two and a half stacks of wheat (the other half of one stack being made up with oats); in five ploughs there were fifty oxen; there were cows, stirks, and a bull, 116 ewes, 42 wedders, 64 hogs, and nine year-old sheep.³ The account of the chamberlain of Glamis in 1538 shows that 12 oxen were purchased to plough the lands of Glamis and Baikie.⁴ The accounts of the chamberlain of Galloway in 1456, relating to the Grange of Sannik, record the crops of oats, bear, and wheat, the payments to labourers, and the cost of horses for such operations as threshing and harrowing.⁵ In the accounts of Menteith for 1508 we see what looks like an attempt to improve stock, for nine white cows and a bull were to be purchased and pastured in the new park of Stirling.⁶

There are also in these records regulations to ensure good husbandry. Thus in 1541 the following conditions were to be inserted in grants of lands in Fife and Strathearn: each tenant had to build a substantial house, consisting of a hall, chamber, pantry, kitchen, and other office houses, with barn, byre, and dovecote; he was to have a good large yard, well dyked, and planted with hawthorn or alder; he was to plant a specified minimum number of trees, so that the yards might be completely encircled; hemp and lint were to be sown outside the kailyard and not within it; alder, willow, and hazel were to be planted in bogs.⁷ Again, entries relating to 'steelbow' tenancies record

¹ *Exchequer Rolls*, XI, p. 409.

² *Ibid.*, XII, p. 640.

³ *Ibid.*, pp. 672-3.

⁴ *Ibid.*, XVII, p. 143.

⁵ *Ibid.*, VI, p. 206.

⁶ *Ibid.*, XIII, p. 60.

⁷ *Ibid.*, XVII, p. 719.

the stock provided by the landlord to his tenants, and the remissions of rent sometimes noted allude to adverse conditions caused by flooding, drifting sand, and civil disorder.¹

Apart, however, from the information to be derived from the *Exchequer Rolls*, it seems very doubtful if much can be found for the medieval period which has not already been used. But that period we may take as ending in the sixteenth century, roughly with the reformation. Thenceforward, in the late sixteenth century and the seventeenth, we enter on a period of which little investigation has been made and which most accounts of Scottish agriculture ignore—a period which ends only when it becomes possible, in the eighteenth century, to take up the tale of the improvers.

The main task should be to try to fill in that gap, and the relevant material is to be found in three main sources: (1) the records of testaments; (2) court books; and (3) estate papers.

THE RECORDS OF TESTAMENTS

These records are extant from dates before 1600 for several parts of the country, although there are other areas, notably Aberdeenshire, where they do not begin until very much later. It must be explained that a 'testament' does not imply the existence of a 'will'; only if it is a 'testament testamentary' is there a will, otherwise it is a 'testament dative'. But the important element in either type of 'testament' is the existence of an inventory of the movable property—"goods, gear, debts and sums of money"—of the person deceased, and it is those inventories which are of importance to the student of agrarian history as of social history generally. It should also be emphasized that testaments are to be found for persons at every level in the social scale, from the very rich to the very poor.

Two examples of inventories may be given, taken quite at random. Thomas Stalker of Easter Drylaw, who died 3 January 1584, had 11 "draw-and oxin," valued at £10 13s. 4d. each; six cows at £6 13s. 4d.; 60 sheep at £1; four horses at £13 6s. 8d.; six young cattle at £2 13s. 4d.; 18 bolls of wheat sown on his land—which, "estimated to the fourth corn" or valued in terms of a four-fold return, was assessed at 72 bolls at £3 a boll; and in his barn he had 24 bolls of wheat at £3 10s., 48 bolls of bear at £2 13s. 4d., 100 bolls of oats at £2, and 30 bolls of pease at £2 13s. 4d. David Mure in Bordland, who died 9 January 1583, was a much less substantial man, with three cows at 8 merks, 2 oxen at 10 merks, four young cattle worth in all £8 6s. 8d., eight hogs at 13s. 4d., a nag and a mare worth together 22 merks, and in his

¹ There is similar information about adverse conditions in the Accounts of the collectors of thirds of benefices, beginning in 1561 (printed down to 1572 by the Scot. Hist. Soc.).

barn 21 bolls of oats at 33s. 4d. and three bolls of bear at £2. Sometimes the list of possessions includes references to implements, e.g., cart wheels with "corn" bodies and "muck" bodies.

It is obvious that an analysis of a batch of testaments from the same parish or other small area would give a fairly accurate picture of the distribution of crops, of the balance of stock between cattle and sheep, and of the sources from which wealth was obtained in the Scotland of the period. There are quite sufficient inventories—hundreds and sometimes thousands for each generation in each area—to make it possible to work out reliable averages and standards. And, apart from information about the general picture, there are many incidental details which may emerge from the study of testaments. The size of a stack may be indicated, when we are told that two stacks of bear were estimated to contain 90 bolls; attention to the dates of deaths and the particulars about crops "sown on the ground" and "in the barn and barnyard" would disclose dates of sowing and harvesting; there are references to different types of oats—white oats, black oats, and "small hieland aittis." Any testament gives a general indication of the character of the deceased's farm and the relative importance of cultivation and stock-raising. Not the least important feature to emerge—though it is perhaps relevant to general social history rather than to agrarian history—is the extent to which agriculture was practised by the inhabitants of Scottish burghs, many of which were no more than villages and the inhabitants of which were often smallholders. For example, a burghess of Montrose had shares in two trading vessels and a fishing boat, but also possessed three bolls of wheat and three bolls of bear sown on the burgh roods of Montrose, along with a cow, a calf, and a quoy. In somewhat similar fashion, the rural clergy invariably had cattle and crops which formed an important proportion of their substance.

COURT BOOKS

These books are mainly the records of the sheriff, regality, and barony courts¹ (though, for reasons just mentioned, burgh court books are not to be ignored for agrarian history). Any one proposing to use those records for agrarian history must be warned that, while they do contain important material for his purposes, they also contain an inordinate amount of material which will be to him of no value or interest whatsoever. The student whose interests lie in the more general aspects of agrarian history would probably be justified only in making use of such court books as are available in print.² The

¹ For a list, see *Sources and Literature of Scots Law*, pp. 117–32.

² e.g., J. A. Symon, *Scottish Farming*, uses the *Court Book of Urie*, published by the Scottish History Society.

labour of working on MSS. would be justified only for an intensive study of local conditions.¹

From their nature, the court books inevitably throw a good deal of light on the relations between landlord and tenant, in connection especially with labour services, which it was sometimes the business of the court to enforce. The court was much concerned with the manifold matters which can be included generally under the heading of 'good neighbourhood', such as the maintenance of dykes and gates, disputes over boundaries, quarrels over peat-rights, the control of stock, the destruction of vermin, the marking of sheep and cattle, and the misdeeds of sheep-dogs. Sometimes proceedings arising from such matters disclose details which help to round off the picture: for example, in the *Barony Court Book of Carnwath* (Scot. Hist. Soc.), we find that some persons accused a man of "castin peits [cutting peats] in thair medow and spreid them in thair unmawin medow"—an incident which throws some light on the poor quality of the soil in land used as a meadow where the grass was to be mown; in the same volume, proceedings are recorded against a man for destroying green wood (a common offence, for which the death penalty was imposed), and he is said to have been cutting "wands" and to have had "twenty wands under his oxter [i.e. armpit]"; in the *Court Book of Balgair* (Scot. Record Soc.) there are several references to the payment of 'tod cess', a levy to pay for the destruction of foxes; and in the *Court Book of Shetland* (Scot. Record Soc.) there are acts to encourage the destruction of "earns and corbies," that is, sea-eagles and ravens.

More strictly criminal matters, likewise recorded in court books, sometimes yield incidental information. Thus, the quantities of produce stolen give some indication of the scale of production: e.g. 20 stones of butter and cheese, which seem a considerable quantity, were stolen from a single tenant in Glenelg. Cases of assault, again, give incidental information about implements and about agricultural operations: e.g. there is a case in the *Melrose Regality Records* where a plough was stopped by striking and beating the horses.²

In the general run of civil cases, the proceedings may disclose information about the quantity of seed sown on an acre, the size of individuals' holdings, and of course the prices of grain and the value of crops. About the value and

¹ For an example of the use of a court book for a local study, see G. Donaldson, *Shetland Life under Earl Patrick*.

² Similar evidence emerges from the *Privy Council Register*, which is mentioned below (p. 89). Selections from the records of the central criminal court, the Court of Justiciary, are printed in Pitcairn, *Ancient Criminal Trials*, 3 vols., Bannatyne Club, 1833, *Selected Justiciary Cases*, Stair Society, 1953, and *Records of the Proceedings of the Justiciary Court*, 2 vols., Scot. Hist. Soc., 1905.

yield of crops a good deal of information should be derivable from cases concerning teinds (*anglice* tithes), but as the records of the Teind Office were destroyed by fire in 1700, such cases are not extant in very great numbers. Sheriff court records may include "fiars' prices," giving the selling price of grain year by year.¹

Special mention should be made of proceedings relating to the division of commonty. When we reach the eighteenth century, sheriff court records may show cases of the consolidation of holdings and of the supersession of the run-rig system, as well as of the division of common grazings among tenants. But divisions were not unknown in earlier times. They could be made in the seventeenth century by contracts of division, with consent of the superior.² But it may be that, even earlier, court proceedings would disclose similar transactions: certainly in the Court Book of Orkney and Shetland for 1612-30 it is recorded that James Sinclair and Elizabeth Spence appointed four persons to designate two merklands out of the lands of Buay, to be enjoyed by the said Elizabeth heritably, "als mekill in quantitie and qualitie . . . as the twa merk uthall [i.e. udal] landis quhilkis lay rig and rendall [i.e. run-rig] of befor with and amangis the said James landis of Bua."

ESTATE PAPERS

Some of the private collections of papers which have been surveyed and recorded either by the National Register of Archives (Scotland) or by other agencies are still in the hands of the owners, others are deposited in the Register House. The general situation is that a substantial body of material for agrarian history does not exist for the period before 1700 and that detailed rentals, estate papers, and farm management records of earlier dates are rare. There are, however, certain exceptional collections, in which there is some material of this kind for at least the seventeenth century. The following examples may be given, all from collections in the Register House.

The Ailsa Papers (Ayrshire) contain some seventeenth-century rentals and a fine series of tacks [leases] from c. 1620.

The Breadalbane Papers (Argyll and West Perthshire) contain rental material from the late sixteenth century, and for the seventeenth century there are store books, giving particulars of holdings of cattle, sheep, and goats, chamberlains' accounts, and registers of tacks.

The Dalhousie Collection (Midlothian and Angus) contains some sixteenth-century rentals and many of the seventeenth century, a very large number of tacks from about 1610 onwards, factors' accounts from 1612,

¹ The Haddington fiars' prices from 1647 are printed in J. A. Symon, *op. cit.*, App. III.

² *Melrose Regality Records*, III, pp. xv, xx, 8.

grievances' accounts from 1650, and notes and accounts relating to the employment of harvesters and other labourers. This collection seems to be one of outstanding importance in this respect.¹

Legal papers in several private collections throw light on agricultural conditions. Precepts of removing give names and numbers of tenants in particular lands. There may also be building contracts. In 1587 a contract between the countess of Erroll and a tenant in Ardriffie stipulated that the latter should build a house 82 feet long and 19 feet broad, the walls to be 3½ feet broad and 3 ells high with two 'rounds' on the side for passages to lofts, two mid-walls, and four plaster walls on the gables and the said mid-walls (Erroll Charters, no. 1162).

Unfortunately farm and estate plans are not found until the eighteenth century, but these often represent conditions that had obtained for a long period before. A book of plans of farms on Eglinton estates in Ayrshire and Renfrewshire, drawn in 1789, has water-coloured representations of farm buildings which often show the ruins of older buildings.

OTHER SOURCES

It is noticeable that in several collections a series of tacks begins in the course of the seventeenth century. The very important subject—highly relevant to agrarian history—of the structure of the system of land tenure, can be only imperfectly explored in earlier periods. Yet there is some important material for the sixteenth century, well worth examination, contained among the very ample records relating to the conveyance of land in heritage—charters in private collections and the crown grants recorded in the *Register of the Great Seal*. (It should be noted, too, that a certain number of tacks of crown lands are recorded in the *Register of the Privy Seal*.) With the beginning of the seventeenth century there is a complete and consistent record of all heritable conveyances of land, in the Register of Sasines, from which the history of any piece of land in Scotland can be continuously traced and which could be used to show the changes in the composition of the land-owning class, the accumulation and breaking-up of estates, and the extension or contraction of the class of owner-farmers.

The process of feuing, or letting land in perpetuity for a fixed payment, had apparently been not unknown in church lands at a fairly early date, but its principal development in the fifteenth century was in the crown estates. It is important to determine how far crown lands were feued, in small lots, to actual farmers (who thus gained security of tenure) and how far in larger

¹ I am indebted to Mr P. Gouldesbrough, an Assistant Keeper of the Scottish Records, for drawing my attention to this collection.

holdings to men who would in turn lease smaller holdings to working tenants. Then in the sixteenth century, for reasons arising from the reformation, there was a rapid development of the feuing of church lands, and, as these feus were very often confirmed by the crown, they are recorded in the *Register of the Great Seal* and in a special Register of feu charters of kirklands (MS). It was a persistent complaint at the time that these ecclesiastical feus were too often granted, for a large lump sum and a small perpetual duty, to middlemen who proceeded to recoup themselves by rack-renting or evicting the old tenants. Yet a casual examination of the records shows that feus were, in fact, quite frequently granted to the existing tenants. The extent to which this applied is a subject which requires study, and probably if the material contained in the monastic cartularies were used in conjunction with the information supplied by the confirmations of feu charters it could be determined how severe the dislocation was which arose from the feuing of the church property in the sixteenth century.

While the sources already described are those to which it is most desirable that attention should be directed, there are other sources which are not to be ignored, and as many of them are printed and indexed, the incidental references to agriculture which they contain can be easily traced. Legislation is to be found in the *Acts of the Parliaments of Scotland*, which have an excellent index. There were many statutes which are at least indicative of good intentions, such as one of 1426 ordaining that every man tilling with a team of eight oxen should sow yearly a firloft of wheat, half a firloft of pease, and forty beans, and two (in 1501 and 1581) designed to protect from distraint a tenant's oxen and horses and other goods pertaining to the plough, besides many enactments intended in one way or another to promote good husbandry and protect crops from damage.¹ The privy council was another source of legislation, and the manifold acts in its voluminous *Register* (printed to 1689) often touch on matters relating to agriculture, while the council in its judicial capacity heard both civil and criminal cases. In 1579 a complaint came to the council from a man who had suffered through the slaughter of "horses that laboured the ground" and six oxen "gangand in his pleuch," as well as injury to his two ploughmen; the incident occurred in Midlothian, and the complainant observed that it was scandalous that such a thing should happen "in a cuntrie quhilk sould be peciabill, sa neir the seat of justice," although no better could be expected in "the far Hielandis and Bordouris."²

The accounts of the lord high treasurer (printed to 1566), the accounts of the comptroller, and the royal household books record expenditure on

¹ See the list of statutes in J. A. Symon, *op. cit.*, App. II.

² *Register of the Privy Council*, III, pp. 109-12.

supplies for the royal table, and some private collections include household books which give details of the consumption of farm produce: e.g., in the Breadalbane collection there are household account books from 1582. *The Household Book of Lady Grisell Baillie, 1692-1733*, was printed by the Scottish History Society. Such material lies on the boundary between agrarian and social history, and the same may be said of population records. There is nothing resembling census returns before the eighteenth century, except the poll-tax and hearth-tax records which exist for certain parts of the country in the 1690's. Resort may be had to the Registers of baptisms (which are in the custody of the Registrar General in the New Register House), but these exist for very few parishes before 1600 and not for by any means all even by 1700.

Finally, there are the voluminous records of the central civil court, the Court of Session, consisting of the original processes, the Acts and Decrees, and the Register of Deeds. It may be presumed that these contain relevant material, but the lack of indexes and other guides makes them virtually inaccessible.

It can be readily observed that, while the sources are numerous, few of them furnish anything in the nature of a corpus of material. And while diligent search may elicit a fairly complete picture of some aspects of the material situation and development, there is a dearth of the correspondence, memoirs, and treatises which would give an insight into the motives and plans of Scottish agriculturists. The contrast is very sharp with the position after 1700, when consistent series of records become available and a great deal was written by contemporaries about their opinions and policies.

Notes and Comments

EDITORIAL

With the co-operation of our excellent printers this REVIEW has been published at tolerably regular intervals ever since its foundation, the only exception being the second part of Vol. VII, which was held up by the printing strike last summer. The editor and the executive committee have prided themselves on this relative punctuality, especially when they compare it with the record of some other learned journals. But there is another side to the picture. Since the task of editing has to be carried

out in the intervals of a working life which most people would consider sufficiently well filled without it, unsolicited articles cannot be dealt with as promptly as they deserve to be. The editor tenders his apologies to intending contributors whose articles have to be kept in cold storage for what may seem an undue length of time. Having said this, he feels impelled to add that his task would be much easier if writers took a little more trouble to prepare their copy in accordance with the

(continued on page 102)

Selion Size and Soil Type

By H. M. CLARK

IN recent years the work of Professor Beresford has shown, from comparisons of strip maps with aerial photographs of the same areas, that ridge and furrow may be equated, under certain reservations, with the 'lands' or 'selions' of the former open fields.¹ It has, therefore, become possible to use air photographs together with documentary evidence to throw light on open-field farming.

The frequent use of air photographs as illustrations may perhaps have drawn attention to a point which has not so far received much notice. In many of these photographs the ridge and furrow rises and falls with monotonous precision, with apparently no variations in width to interrupt its regularity. In others, however, one or more ridges of noticeably greater or less width than the general are abruptly interspersed. Alternatively, the general width in one area varies widely from the general width in another. Dr Mead in his investigation of Buckinghamshire ridge and furrow found widths varying from 4 to 18 yards, with 9-10 yards as the most common. This variation in the size of selions is in any case familiar from documentary sources.

The varying size of selions or lands has been explained by the Orwins as a consequence of soil type.² In ideal conditions on a flat field with a light soil,

¹ M. W. Beresford and J. K. S. St Joseph, *Medieval England: An Aerial Survey*, 1958, pp. 21-40.

I have throughout this article used the terms 'selion' or 'land' for the basic unit of ploughland, or the single ridge, and 'strip' as the term for the unit of tenure in one place, which might contain one or more selions. This in spite of the plea for a revised terminology made by Professor Beresford, who suggested 'strip' for the single ridge, and 'block of strips' for the unit of tenure (*Economic History Review*, N.S., VII, 1955, p. 392). I have done so partly because it is essential to have two terms in frequent use in order to avoid confusion between the two concepts, and 'block of strips' seems a little cumbersome. It also seemed to me that if the revised terminology were adopted, the 'strips' of 'strip' maps would automatically be taken to represent individual ridges. In fact 'strip' maps fall into several categories: some show individual selions and give an indication of the tenure of each; some show units of tenure with an indication of the number of selions within each; and some show units of tenure with the acreage of each and no indication of the number of selions involved. The four maps published to accompany Vols. II and III of the *Quarto Memoirs of the Bedfordshire Historical Record Society* illustrate all these types. The kind of difficulty that arises from the confusion between them was found by Dr W. R. Mead, who compared a strip map showing units of tenure in Soulbury with ridge and furrow on the ground, and found that the two did not correlate.—*Geographical Journal*, CXX, 1954, pp. 34-42.

² C. S. and C. S. Orwin, *The Open Fields*, 1954, pp. 34, 43, 101.

the width of a ridge would not exceed 22 yards, because this is the distance at which it becomes uneconomic for beasts to traverse the top of the ridge each time in order to plough down the other side. On heavy, poorly drained soils, on the other hand, it might not exceed three yards, because the ridge should be much narrower to allow for better drainage off each 'top'. So the width of a land is dependent on the nature of the soil, which dictates the desirability of frequent or infrequent drainage, and also the ease with which it can be ploughed, and so the size of the unit which can most conveniently be ploughed.

This explanation seems to be generally accepted. It was not possible to test it until soil maps became available to local historians, and the first of these, of Wem in Shropshire, only appeared in 1954. During work on the field system of Longstanton, Cambridgeshire, I examined the correlation of the soil type with the selion size given in terriers. Single selions were of widely differing areas from $\frac{1}{8}$ to 1 acre, with the half acre predominating over the rood selion as the commonest unit of plough.¹ Air photographs showed ridge and furrow of a maximum width of 16 yards and a minimum width of 5 yards. According to the Orwins' theory, the narrower ridges should have been on the heavy, poorly drained clays, which are well represented in Longstanton, and the wider ridges on the imperfectly or freely drained sandy clay loams developed on the valley gravels on which the village stands. In fact, a comparison with the incomplete soil survey map of the parishes showed that no such correspondence existed.

It therefore seemed worth while to undertake a detailed examination to test the generalization in another region. The work of the Soil Survey of England and Wales still covers only a very small part of the former open-field zone,² and not all of the third edition sheets now being issued are based on mapping on the scale of six inches to one mile. Moreover, sheets appearing from now on, in the seventh edition, will mainly be mapped on a reconnaissance basis, so that any extensive field-by-field comparison of pre-enclosure parish land utilization and soil-type will be impossible. This is a disaster for the local historian, to whom large-scale soil maps would be invaluable.

The present survey of ridge and furrow was limited, then, to the few open-field areas for which six-inch soil maps existed, and I could not choose a region where little arable farming had taken place since enclosure, which would have been ideal for such a study. However, the parishes of Breadsall, Spondon, Mackworth, Markeaton, and Allestree, near Derby, were covered

¹ Cambridgeshire Record Office, R.56.5.85; R.52.18.86; R.52.18.85; R.52.18.90.

² Agricultural Research Council Soil Survey Research Board, *Soil Survey of Great Britain*, Report No. 11, 1958.

by a six-inch soil map, and proved to have enough pre-enclosure ridge and furrow to justify investigation. I also carried out more cursory investigations in the parishes of Ockbrook (enclosed in 1772) and Hopwell immediately east of Spondon, and Woughton-on-the-Green (enclosed in 1768) and the Brook End of Shenley (enclosed 1762) in Buckinghamshire, both of which were partially covered by a six-inch soil map.

Much enclosure in Derbyshire took place in the eighteenth century. The three manors of Allestree, Markeaton, and Mackworth, which made up the estate of the Mundy family, were enclosed in 1760 by an owner anxious to apply the methods of the New Farming,¹ but enclosure in Breadsall did not take place until 1815. The only Act surviving for Spondon, on the other hand, deals with under 200 acres, not including open-field arable, in 1792, and the very striking strip-like configuration of the fields round the village suggests much earlier enclosure. The only strip map which survives is that dealing with Allestree manor, and this satisfactorily confirms that the surviving ridges are pre-enclosure. Elsewhere, no ridge and furrow was worked on which could not be shown on the ground to ante-date the existing hedge pattern.

The principal mapping unit employed by the Soil Survey is the "soil series" which is defined as "a group of soils with similar profiles derived from similar material under similar conditions of development."² In the parishes under consideration, the soil series were derived from the Upper Carboniferous beds of the Millstone Grits, the Coal Measures, and the Triassic sandstones and marls, which to the east and south of Derby lie unconformably on the Carboniferous, together with some Triassic and Carboniferous drifts. The only points with which this study are concerned, however, are the differing drainage and texture of the various soil series, since it is the drainage and texture which should affect the size of the selion. The drainage and texture of the soil series is in no way related to the age of the parent material, but only to its chemical and physical composition. The soil represented may then be tabulated as shown on page 94.

Each parish provided examples of contrasting soil type both within itself and when compared to the other parishes. Mackworth and Markeaton contained the largest area of freely drained soil, but considerable outcrops of Hodnet

¹ Derby Borough Library, Derbyshire Collection Nos. 9354, 9743.

² The material of this and the following paragraph is taken from the manuscript of the memoir on the soil map (Sheet 125, Derby). I am particularly indebted to Mr E. M. Bridges for allowing me to use in this paper manuscript material both from the map and the memoir, as well as for his help and criticism. I am also indebted to Mr R. S. Seale, Mr C. A. H. Hodge, and Mr D. W. King of the Soil Survey, who have put much time and information at my disposal.

<i>Drainage Class</i>	<i>Soil Series</i>	<i>Texture</i>	<i>Parent Material</i>
Free	Kirkby Overblow	Sandy loam or loamy sand	Millstone Grit s.s.*
	Seacroft	Fine sandy loam	Millstone Grit or Coal Measures s.s.
	Bridgnorth	Medium grained sandy loam	Bunter s.s.
	Bromsgrove	Fine sandy loam or silt loam	Keuper and Bunter s.s.
Free to Imperfect	Hodnet	Silty loam or fine sandy loam	Interbedded Keuper s.s. and marl
	Risley	Sandy clay loam	Sandy and gravelly drift of Triassic origin
	Worcester	Silty clay loam	Keuper marl
Imperfect	Alton	Silty clay loam overlying shales	Limestone Shales
Poor	Windley	Silty clay loam overlying silty clay	Limestone Shales
	Hazlewood	Silty clay loam over clay	Millstone Grit Shales
	Hulland Ward	Sandy clay loam or silty clay loam	Mixed drift of Carboniferous and Triassic origin
	Dale	Silty clay loam	Coal Measure Shales

* s.s. = sandstone

and Worcester series lay next to the Bromsgrove series, and in the north of Allestree, the old Duffield Field lay on the Windley series. Breadsall had patches of Bromsgrove, Bridgnorth, and Kirkby Overblow series, but the poorly drained soils were much more strongly represented by the Dale, Hazlewood, and Hulland Ward, and the intermediary groups also appeared. Spondon provided the strongest possible contrast to Mackworth and Mark-eaton, the largest part of the parish lying on the Hulland Ward, but the Hodnet, Worcester, and Bromsgrove series also appeared, chiefly to the north of the parish. Ockbrook and Hopwell, immediately to the east of Spondon, lay almost entirely on free to imperfectly drained soils, with very small areas of the freely drained Bromsgrove series. The surveyed areas of Shenley Brook End and Woughton-on-the-Green were entirely covered by the poorly drained Hanslope series, developed from the Chalky-Jurassic

Boulder Clay, and the provisionally named Oak series developed from Jurassic Boulder Clay.

Investigation showed first that abrupt changes in selion size and width of ridge took place on the same soil series. The range of widths found in all the parishes varied from 11 to 4 yards, and on the Bromsgrove south of Mackworth widths from 11 to 5 yards were found. There were sudden variations from an average of 8 or 9 yards to small groups of ridges 5 yards wide and, in one case, the opposite. Similarly, on the single patch of Dale, ridges 5-8 yards wide were found. It seemed possible then that although the local variations could not be ascribed to soil type, the general tendency might be for ridges to narrow on the Hodnet and Worcester series (Fig. 1).

When, however, the small area of Allestree which suburban development has left uncovered was examined this general tendency in favour of the

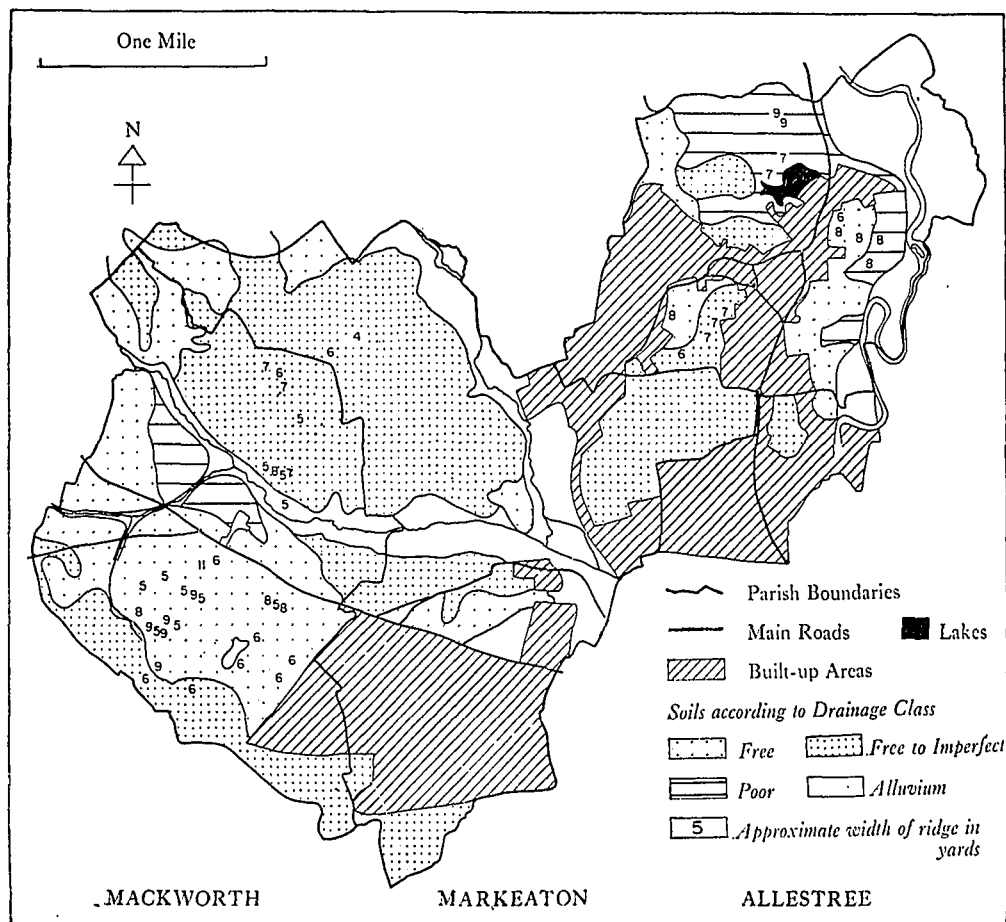


FIG. 1

Orwins' theory seemed refuted. Ridges 6 and 8 yards wide were found on the freely drained Bromsgrove, ridges 7, 8, and 9 yards wide on the poorly drained Windley. Similarly, in Breadsall, ridges 5 and 9 yards wide were found on the Bromsgrove and ridges 5, 6, 7, 9, and 11 yards wide on the Hulland Ward, Hazlewood, and Dale series (Fig. II).

Particular attention was paid during the field work to angle of slope, since obviously a steeper angle might compensate a poorly drained soil with better natural run-off, and so lead to wider ridges than might otherwise be the case. In most cases ridge and furrow lay up and down the slope, and so sudden variations in the widths could not be ascribed to slope. Where this was not so, particularly in Breadsall, which lies at the confluence of two brooks in valleys with sides rising some 100 feet, and also includes the scarp of the Derwent river-terrace, there appeared to be no correlation between steeper slopes and wider ridges on poorly drained soil. The narrowest ridges, of five yards, on the Hazlewood, lay on the steepest part of the slope nearest the Ferriby Brook. As the slope levelled off upwards, the average width of ridge rose. The 9-yard ridges on the Hazlewood lay on an almost level field.

Examination of Spondon appeared to disprove that any general tendency existed in the group of parishes towards narrower ridges on heavier soils (Fig. III). Immediately north of the village, on the Hulland Ward, the average width of ridge was 9, 10, or 11 yards, with isolated examples running up to 12 yards. The fields are low-lying, and have not much surface slope. On a

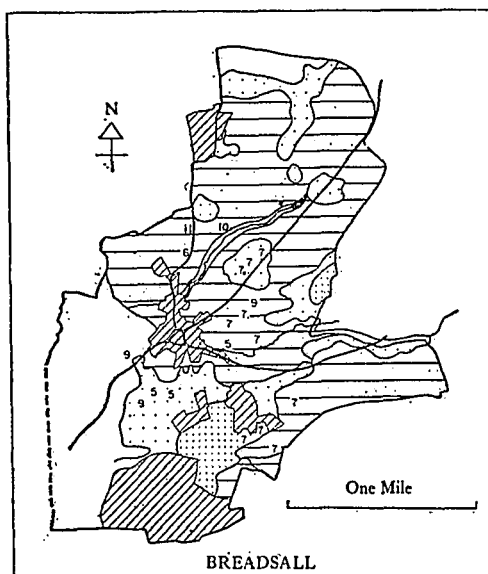


FIG. II

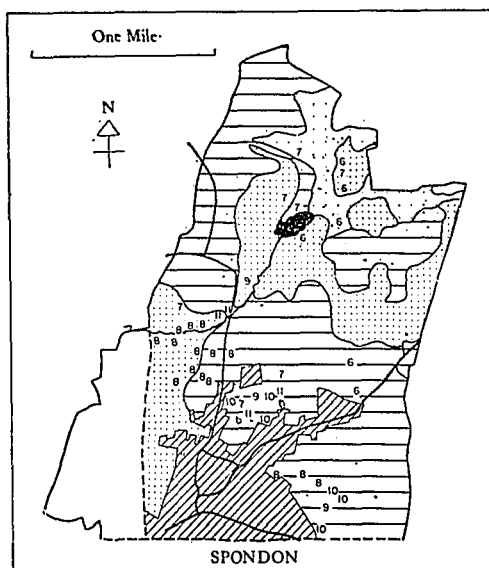


FIG. III

poorly drained soil, with little natural run-off, a rather greater average width is obtained than on a freely drained soil in an area with greater surface slope south of Mackworth. Elsewhere in Spondon, narrower ridges are found on the Hulland Ward, but the general average only falls noticeably in the north on the imperfect to freely drained soils. This fall is continued on the free, or free to imperfectly drained soils in Ockbrook and Hopwell, where the general range was from 7 to 5 yards. The classic theory is thus reversed.¹

Work in Buckinghamshire was inconclusive. Ridges tended to be wider in Shenley Brook End and Woughton than in any of the Derbyshire parishes except Spondon, from 8 to 10 yards. There were few abrupt local variations, except for one small area of ridges approximately six yards wide in Shenley. Outside the part of Shenley covered by the soil survey, ridge and furrow did exhibit sudden changes from 10 to 5 yards, but no useful observations could be made on this in the absence of a soil map, although the Hanslope is said to outcrop consistently over the whole region. It seems then that here the width of ridge is almost as unvarying as the soil types, and all that can usefully be said is that the ridges in these two parishes on poorly drained soil are often wider than on the areas of freely drained soil examined in the Derbyshire parishes.

This survey shows, first, that in two Cambridgeshire and seven Derbyshire field systems, local variations in the width of ridge and furrow are not caused by variations in soil type, and secondly, that there does not appear to be a tendency towards narrower ridges on poorly drained soils, although much more extensive field work would be needed to establish the second point with certainty.

Conclusions based on so small a region must necessarily be extremely tentative, and can only apply to the region itself. It is not, of course, surprising that there is not a minute correlation between the width of selions and soil type; to expect this is to expect a remarkable degree of sensitivity and science from the Anglo-Saxon peasant or his predecessors in the process of laying out lands at the first clearance. What one would expect are certain changes in selion width from area to area of the open fields where soils vary widely, as the limitations of environment made themselves so strongly felt that custom and habit became aware of them and made conscious steps to meet them. On the basis of observations made so far, these general changes did not take

¹ The air photographs on which these conclusions were based were taken from Sortie 58/RAF/1096, Library Number 1438, in the Air Photographs Library of the Ministry of Housing and Local Government. My thanks are due to the Air Photographs Officer for permitting me to make frequent use of the Library, and also to Miss Janet Brice for helping me with the field work which was a necessary adjunct to the use of the air photographs.

place, whereas other local changes apparently unrelated to the environment did. It seems that an explanation for these changes must be sought in custom rather than environment.

It is difficult to account for local custom which leads to an apparently haphazard arrangement of varying selion sizes within the same parish. Two possible explanations which might be explored are that lands may have been laid out irregularly at the clearance, or that the irregularity is connected with the late medieval consolidation of holdings. It is hard to imagine the irregular pattern emerging as a product of co-aration, unless the 'acre', or day's work, represented the individual holding, as is often suggested. In this case the 'strip' must frequently from the beginning have contained more than one selion, since selions even approaching 22 yards in width are so rare. It is just conceivable, then, that an individual might have been able to vary selion width within his own 'acre', originally. As to consolidation, it is true that if the selions of a parish as originally laid out were approximately equal and of a size well below the maximum possible for the environment, consolidation would permit the individual to subdivide further, or to plough two or three as one, at will. Examples of amalgamation and subdivision of this kind have been found at Longstanton and at Mackworth in positions where furlong shape did not demand it, and in which it was an interruption in the common pattern. Such suggestions can only stand, however, until an adequate solution to the problem is found.

Letter to the Editor

SIR,—May I make two comments on Dr Chaloner's review of my book on Dartington Hall? I hold the opinion that I am perfectly entitled to call the book "the history of an experiment," but of course it is also implied that it is the history *so far*. The experiment continues in various forms, not necessarily with the same emphasis, however. Secondly, in the unpublished report, upon which the

book was based, and which I also wrote, complete financial accounts are rendered of every aspect and activity of the estate. For various reasons, it was considered undesirable to publish these, but they are available (subject to the permission of the Trustees) to serious enquirers.

VICTOR BONHAM-CARTER
East Anstey, Tiverton, Devon.

The Long and Short Hundred in Agrarian Statistics

By REGINALD LENNARD

BESIDES the material examined in my article on medieval sheep statistics (AHR VII, 1959, pp. 75-81), a good deal of evidence on the relative frequency with which the long and short hundreds were employed is to be found in the *Inquisitiones Post Mortem* and for the few counties for which these have been published is readily available. It occurs almost entirely in statements about areas of arable which give the value per acre and the total value. Unfortunately the published inquests are given only in translation, and it is just possible that in a few cases the translator may have expressed as a 'hundred' what the original expresses as 'five score'; and such cases would have no bearing on the problem. Some statements too are made useless by discrepancies in the figures due to errors in arithmetic or transcription. Yet a brief summary of the data supplied by documents of thirteenth-century date may be helpful.

1. *Lancashire and Westmorland*. The evidence is very scanty mainly because in these inquests lands are commonly measured in carucates and bovates instead of acres; but these are counties for which I found no evidence at all in my previous article, so it seems worth noting. At Roseacre in Kirkham parish, Lancashire, 215 acres are described as "by the lesser hundred" and valued at £8 19s. 2d. (i.e. ten pence per acre). An inquest of 1298 lists 251½ acres of waste at West Derby "by the long hundred," another 234 acres "by the short hundred," and another 200 acres which the arithmetic shows to have been long hundreds though no statement to that effect is made. The same inquest also uses the long hundred without comment for some land at Wavertree. An inquest of 1247 values 200 acres in Patterdale (Westmorland) at £4: this suggests a use of the long hundred, but one cannot be sure.¹

2. *Nottinghamshire*. Eight cases of the short hundred and two of the long hundred, one of which is described as "of the greater number."²

3. *Staffordshire*. Nine cases of the short hundred and one which is said to

¹ *Lancashire Inquests 1205-1307*, ed. W. Farrer, Lancs. and Cheshire Record Soc., 1903, pp. 266, 285-6, 167.

² *Abstracts of the Inquisitiones Post Mortem relating to Nottinghamshire 1279-1321*, ed. J. Standish, Thoroton Soc., 1914, pp. 21, 33, 34, 61, 79, 81, 173, 176, and for the long hundred pp. 80, 109.

be "by the larger hundred" but actually assumes a five-score hundred in its arithmetic.¹

4. *Worcestershire*. Nine cases of the short hundred, one of the long—also one *probable* case of each.²

5. *Gloucestershire*. Forty-four cases of the short hundred, in two of which (Stinchcombe, 1256; Saintbury, 1300) the figures are stated to embody the "small" or "lesser" hundred. One inquest, of the year 1299, contains four cases of figures which are described as "by the greater hundred" and two (included in the total of forty-four) which employ the short hundred without comment.³

6. *Wiltshire*. Seventy-three cases of the short hundred, in thirteen of which its use is noted.⁴ The long hundred is used (without comment) in one case.⁵

7. *Dorset*. Ten cases of the short hundred, none of the long.⁶

8. *Bedfordshire*. Eight cases of the short hundred (in one of which its use is noted): also six probable cases of the same. Two cases of the long hundred, both accompanied by a statement to that effect.⁷

All the above figures are for measures of land: only in four of the counties do the inquests throw any light upon the methods employed in the enumeration of sheep. At Lechlade in Gloucestershire some pasture for 200 sheep is valued (*temp.* Henry III) at 16s. 8d., which suggests a short hundred as the

¹ *Inquisitions Post Mortem etc., Staffordshire 1223-1327*, W. Salt Collections, 1911, pp. 146, 222, 243, 244, 247, 248, 249, 250, and for the alleged 'larger hundred', p. 243.

² *Inquisitiones for Worcestershire*, Part I, ed. J. W. Willis Bund, Worcestershire Hist. Soc., 1894, pp. 16, 20, 26, 31, 42, 56, 60, 61, 62, 64, and for the "probable" cases, pp. 33, 55.

³ *Inquisitiones Post Mortem for Gloucestershire*, Vol. IV, ed. S. J. Madge, British Record Soc., 1903, pp. 21, 27, 41, 55, 61, 92, 96, 102, 103, 123, 124, 132, 133, 135, 137, 138, 140, 141, 142, 147, 148, 150, 158, 168, 169, 170, 172, 174, 175, 179, 180, 181, 188, 192, 193, 195, 198, 201, 220, and for the last-named inquest, pp. 202-9. A few cases refer to lands outside Gloucestershire.

⁴ *Abstracts of Wiltshire Inquisitiones Post Mortem, 1242-1326*, ed. E. A. Fry, British Record Soc., 1908, pp. 2, 8, 23, 43, 51, 60, 62, 63, 64, 68, 71, 75, 77, 81, 87, 92, 100, 104, 106, 107, 111, 128, 132, 134, 138, 139, 141, 142, 145, 146, 147, 151, 156, 157, 167, 169, 170, 171, 174, 175, 182, 192, 201, 206, 210, 214, 215, 216, 218, 223, 227, 228, 229, 230, 232, 233, 235, 236, 242, 250, 252, 268, 277.

⁵ *ibid.*, p. 245.

⁶ *Dorset Inquisitiones Post Mortem, 1216-1485*, reprinted from *Notes and Queries for Somerset and Dorset*, 1916, pp. 52, 53, 137, 185, 202, 214, 299, 300, 302. This volume is not complete for the county as it is arranged in alphabetical order of the owners and only extends from A to C.

⁷ *Calendar of Inquisitions Post Mortem*, ed. G. H. Fowler, Beds. Hist. Record Soc., v (Part II), pp. 207, 243, 248; XIX, pp. 117, 118, 130, 135, 136, 137, 139, 140, 141; and, for the long hundred, v, p. 235; XIX, p. 114. The published calendar does not extend beyond the year 1286.

total comes to a penny per sheep on that assumption.¹ In Wiltshire the short hundred is used (without comment) in 18 cases, and in five others the figures suggest its use without proving it.² One Dorset inquest values pasture for 150 sheep at 6s., which might be an approximation, based on the short hundred and reckoning a half-penny per sheep, or else a rough valuation at 4s. the hundred.³ Bedfordshire provides one case of sheep enumerated by the short hundred and that without comment.⁴ In none of the counties is there any certain example of the long hundred in sheep statistics; but its use is suggested by the figures at Fittleton and Mere in Wiltshire and, though certainty is precluded by arithmetical errors, the inquests reveal two other probable cases in this county.⁵ In Dorset, pasture for 200 sheep is valued at 4s. at Steeple, and pasture for 100 is said to be worth 2s. at Child Okeford and 1s. at Iwerne Courtney; but whether these figures imply a six-score hundred or are rough valuations per hundred of five score must be regarded as doubtful.⁶

To sum up: the evidence of these inquests supplements that cited in my former article by showing that there was, perhaps, a tendency to favour the long hundred in Lancashire and that it was used occasionally in several counties where its employment had not previously been noticed. But, apart from Lancashire and possibly Westmorland (for both of which the evidence is very slight), the inquests reveal a preponderance of the five-score hundred which tends to confirm my conclusion that in the west a "hundred" should be understood in that sense unless the contrary appears. It should be noticed that the counties to which this applies now include Staffordshire and Worcestershire—counties previously omitted for lack of evidence.

ADDENDUM. Some evidence for another part of the country is afforded by the Yorkshire Inquisitions published by the Yorkshire Archaeological Association in their Record Series. Thirteen of those of thirteenth-century date contain seventeen clear cases of land measured by the long hundred (I, pp. 48, 143, 146, 192, 240, 242, 247, 255, 259; II, p. 108; III, pp. 57, 68, 100). Only in ten cases, contained in six inquests, is it clear that the five-score hundred was employed (I, pp. 40, 68, 160, 169, 222, 223, 224; III, p. 128). It is, however, remarkable that in six of the former examples the use of the

¹ *op. cit.* (Gloucestershire), p. 55.

² *op. cit.* (Wiltshire), pp. 2, 23, 24, 64, 65, 75, 88, 92, 98, 108, 111, 127, 133, 142, 168, 170, 254; and, for the probable cases, pp. 42, 60, 68, 82, 85.

³ *op. cit.* (Dorset), p. 202.

⁴ *op. cit.* (Bedfordshire), XIX, p. 117.

⁵ *op. cit.* (Wiltshire), pp. 107, 277; also Calstone, p. 77, and, more doubtfully, Cherhill, p. 43.

⁶ *op. cit.* (Dorset), pp. 302, 326, 347.

greater hundred is specifically noted, while the five-score hundred is always used without explanation. The method used in enumerating sheep is only illustrated by a single entry: it includes a statement that the reckoning is by the long hundred (I, p. 41).

NOTES AND COMMENTS (*continued from page 90*)

usages adopted in the REVIEW. It is surprising how many articles are sent in with illustrations or tabular matter that obviously will not fit into our page, and with spelling, punctuation, or style of footnote reference which departs in one or more respects from our established practice.

THE AGRARIAN HISTORY OF ENGLAND

The inception of this great undertaking was announced four years ago in Vol. IV of the REVIEW, and a brief report on progress appeared in Vol. V, p. 11. Since then much solid work has been done, particularly on Vol. IV, the pilot volume, which is being edited by Dr Thirsk and covers the period from 1500 to 1640. It is expected that contributors will begin sending in their copy towards the end of this year. Meanwhile, in order to assist the organization of research for other volumes, the Nuffield Foundation has made a further grant of £12,000 to the University of Leicester, whose Department of English Local History is the headquarters of the undertaking. A number of meetings have been held in London, Oxford, and Leicester, to plan the work on Vols. I, III, and VI, and editors have been appointed as follows: Vol. I, Dr H. P. R. Finberg (general editor of the History); Vol. III, Professor M. M. Postan and Dr R. H. Hilton jointly; Vol. VI, Mr J. W. Y. Higgs.

THE BRITISH AGRICULTURAL HISTORY SOCIETY

The Annual Conference for 1960 was held at Harper Adams Agricultural College, Newport, Shropshire, and was attended by about forty members of the Society. The Conference opened on Thursday, 7 April, with a

tour of the College farm, followed by dinner at which the Society was welcomed by the Principal of the College, Mr W. T. Price, M.C. After dinner a paper was given by Miss Dorothy Sylvester on The Open Fields of Shropshire. On the Friday morning members heard papers by Mr Glanville R. J. Jones on The Pattern of Settlement on the Welsh Border and Mr W. T. Price and Mr T. O. Wilson on Recent Changes in Shropshire Agriculture. In the afternoon Miss Sylvester led a tour of west Shropshire. The Conference concluded on the Friday night with a paper by Mr Michael Madden on Agricultural Trades Unionism in England and Wales.

The chair at the annual general meeting on the Friday morning was taken by the Treasurer, Professor Edgar Thomas. The officers of the Society, namely the President, Sir Keith Murray, the Treasurer, Professor Edgar Thomas, and the Secretary, Mr J. W. Y. Higgs, were re-elected, and to fill the places on the Executive Committee vacated by Miss H. A. Beecham, Mr George Ordish, and Mrs Joan Thirsk, the meeting elected Mr George Houston, Mr W. Harwood Long, and Mrs C. S. Orwin.

In the unavoidable absence of the Chairman of the Executive Committee, Mr George Ordish, its report was presented by Professor Edgar Thomas, who said that in the past year membership had risen from 559 to 586. He also reported on the three conferences in the previous year, including the Scottish Conference held in the autumn of 1959, which was a new venture.

In presenting the Treasurer's report, Professor Thomas explained that the financial

(*continued on page 114*)

Regional Farming in Seventeenth-Century Yorkshire

By W. HARWOOD LONG

THE study of regional agriculture in this country has been handicapped by the paucity of records on peasant farming, which nevertheless represented the typical husbandry of most districts of England until the Hanoverian enclosures. Manorial records relate mainly to the demesne, and although it is known that there were, for instance, concentrations of sheep on some coastal marshes, and that cattle raised on the Welsh hills were already fattened in the English midlands in the sixteenth century, the only source from which a quantitative assessment of differences in farming practice in different districts can be made is the probate inventories which many peasants left behind them with their wills.

Peasants' inventories relate to the period 1530 to 1830, but they were much more numerous in the sixteenth and seventeenth centuries than at any other time. Though they are best used in association with other sources of information for studying the farming of a district, they have the considerable advantage of being almost unlimited in numbers, so that they provide a fairer cross-section of the farming of a district than would be possible by any other means.

The amount of agricultural information contained in an inventory depends on the type of farm, the conscientiousness of the appraisers, and to some extent on the month in which the inventory was made, those made between seed-time and harvest usually providing useful information on cropping which those made at another time of the year necessarily lack. Although more of the inventory is invariably given up to valuing the household goods than the farm stock (which nevertheless usually represent a much larger proportion of the total), considerable information is usually provided under the headings of: Crops (in barn or granary, and growing), cattle, sheep, horses, pigs, poultry, bees, gear, sundries.

In the investigation of seventeenth-century farming which forms the subject of this essay nearly a thousand inventories were examined. Most of them were at the time housed in the Probate Office at York, but those relating to the Archdeaconry of Richmond were in the Leeds City Library. The records for the years 1688 and 1689 or thereabouts easily outnumber those of any other date, and mainly for this reason they were the years selected for study.

Two alternative ways of using these inventories in order to study the re-

gional characteristics of the farming suggested themselves. One was to group together those farms which appeared to show some similarity in system in order to see if they were mostly situated in one part of the county. The other was to group them on the basis of geographical features on the assumption that this would throw up contrasts in the systems. The latter is empirical and, in fact, on *a priori* grounds assumes the result that might be expected. Nevertheless, the physical features of the Yorkshire landscape vary so sharply that it would be surprising if any tendency towards regionalization were not associated with them. Moreover, the Board of Agriculture surveyors for the North and East Ridings, writing only a little more than a hundred years after the period of this study, used the physical features of the county as the basis for studying the farming systems.¹ Both these reasons seemed to justify adopting the same method as a first approach to the present problem, and the records were consequently divided into eight groups, as follows:

Dales. 116 farms. Pennine farms in the North Riding, or northern part of West Riding.

Craven. 95 farms. Farms in the Craven part of the West Riding between the Dales group and the Industrial West Riding group.

Cleveland. 31 farms. Mixed farms on low ground between the Cleveland hills and the river Tees.

North Yorks Moors. 49 Moorland farms between Cleveland and the Plains of York and Pickering.

Wolds. 38 farms on the hills in the East Riding between Holderness and the Plain of York.

Holderness. 79 farms between the Wolds and the sea.

West Riding Industrial. 33 farms in the hills of the industrial West Riding. These holdings were often occupied by weavers and clothiers in what is now the industrial West Riding.

Plain of York. 430 farms, all in the Plain of York.

In all, 997 inventories were extracted, but only 871 of them were suitable for grouping. Those rejected include 83 in which the total valuation was £12 or less. Even at the prices ruling at the end of the seventeenth century a total valuation of no more than £12 seems too low for a holding depending mainly on agriculture, and it was assumed that these were part-time holdings where farming was comparatively unimportant.

At the other end of the scale, some valuations were so high that to include them in a group average might have distorted it. A farm valuation of £400 was made the upper limit. Four farms had valuations that were higher than

¹ J. Tuke, *Agriculture of the North Riding of Yorkshire*, London, 1794, 1800; I. Leatham, *Agriculture of the East Riding of Yorkshire*, London, 1794.

TABLE I
VALUATIONS PER FARM
Eight regional farming groups

	Dales	Craven	Cleveland	North Yorkshire Moors	Wolds	Holder- ness	West Riding Indus- trial	Plain of York
<i>No. of Records</i>	116	95	31	49	38	79	33	430
<i>Valuations per Farm</i>	£	£	£	£	£	£	£	£
Hay	4	3	2	$1\frac{1}{2}$	$1\frac{1}{2}$	$4\frac{1}{2}$	$2\frac{1}{2}$	3
Corn	1	7	16	4	54	19	10	$23\frac{1}{2}$
Cattle	20	$27\frac{1}{2}$	29	22	$22\frac{1}{2}$	$33\frac{1}{2}$	21	$24\frac{1}{2}$
Sheep	12	6	6	13	$17\frac{1}{2}$	10	5	$5\frac{1}{2}$
Horses	5	$6\frac{1}{2}$	$9\frac{1}{2}$	$3\frac{1}{2}$	13	$10\frac{1}{2}$	5	$8\frac{1}{2}$
Pigs, Poultry, Bees	—	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	3	1	$1\frac{1}{2}$	1
Gear	$1\frac{1}{2}$	4	4	$2\frac{1}{2}$	$6\frac{1}{2}$	$4\frac{1}{2}$	4	5
Sundries	$1\frac{1}{2}$	$1\frac{1}{2}$	—	1	1	$1\frac{1}{2}$	2	1
TOTAL:	45	55	67	47	119	$83\frac{1}{2}$	50	72
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Hay	9.0	5.5	1.8	1.3	1.2	5.4	4.9	4.2
Corn	2.2	12.7	25.1	8.5	45.5	22.7	21.0	32.7
Cattle	44.3	50.0	42.8	46.5	19.1	40.1	42.2	34.0
Sheep	27.0	10.9	8.9	27.3	14.6	12.0	9.5	7.6
Horses	11.4	11.8	14.4	7.4	10.8	12.6	10.1	11.8
Pigs, Poultry, Bees	0.3	0.9	1.0	1.5	2.4	1.2	1.0	1.4
Gear	3.0	7.3	6.0	5.5	5.4	5.4	7.6	6.9
Sundries	2.8	0.9	neg.	2.0	1.0	0.6	3.7	1.4

£400, and they were all discarded. Finally, a few records were discarded for other reasons—usually lack of sufficient data.

The average sizes of the farms in four of the groups—Dales, Craven, North Yorks Moors, West Riding Industrial farms—were approximately the same at about £50 per farm. The Cleveland and Plain of York farms were larger, and the Holderness farms were larger still. But easily the largest farms were on the Wolds, with an average valuation of nearly £119.

The significance of the table so far as system of farming is concerned lies in the percentage distribution of the valuation rather than in its total amount. Every group, except the Wolds, had a larger percentage of its valuation in cattle than in any other item. The Wolds relied chiefly on corn, and in the Plain of York the valuation of corn was almost as high as cattle.

Most inventories gave the numbers as well as the value of the livestock. With some classes, this has made it possible to follow through the livestock

farming in more detail than can be done from the valuations only (Table II). Nearly all records gave sufficient particulars of cattle to compare the numbers of oxen, cows, and other cattle in each group. With horses, the detail was only sufficient to divide them into 'young' and 'old', and with sheep no classification of any sort was possible. Numbers of pigs and poultry were not sufficiently great to justify any attempt at classification.

TABLE II
AVERAGE NUMBERS OF LIVESTOCK PER FARM

	Dales	Craven	Cleveland	North Yorks Moors	Wolds	Holderness	West Riding Industrial	Plain of York
<i>Cattle</i>	no.	no.	no.	no.	no.	no.	no.	no.
Cows	4.6	4.8	6.5	5.0	4.7	6.0	3.9	4.8
Oxen	0.2	1.5	1.5	2.1	2.8	1.9	1.5	2.2
Other Cattle	9.4	8.4	7.9	8.1	5.6	8.6	5.3	6.8
TOTAL:	14.2	14.7	15.9	15.2	13.1	16.5	10.7	13.8
<i>Sheep</i>	54.2	26.7	29.2	72.5	96.3	37.1	19.3	26.2
<i>Horses</i>								
Adult	1.9	2.1	2.4	1.3	4.7	2.9	1.7	2.9
Young	0.7	0.8	1.1	0.7	0.7	0.6	0.2	0.9
TOTAL:	2.6	2.9	3.5	2.0	5.4	3.5	1.9	3.8
Oxen and adult horses	2.1	3.6	3.9	3.4	7.5	4.8	3.2	5.1

The small variation in the total numbers of cattle per farm in each group is an interesting feature of Table II. Except for the small farms in the Industrial West Riding, the range was from 13.1 cattle per holding on the Wolds to 16.5 in Holderness. Large teams of working oxen were seldom encountered, and on most groups the average number of oxen was about two. The Dales group, with very little arable land, however, was very low in its numbers of working oxen; Craven, Cleveland, and the West Riding Industrial farms were all low, which is not surprising taking into consideration the small farms and the system of farming. On the other hand, the average numbers of oxen on the North Yorks Moors group was surprisingly high. The reason is not evident, but it is interesting to note that this was the only group on which the numbers of oxen exceeded the numbers of adult horses.

Since oxen and adult horses are to some extent complementary animals,

their combined numbers probably form the most satisfactory measurement of the strength of the plough teams group by group. This comparison shows larger variations than are revealed by the study of either horses or oxen separately, and indicates a fairly close correlation between power and size of holding (in terms of valuation).

Several groups had a ratio of cows to 'other' cattle of about 1 to 2 which suggests that they followed a system of rearing their own calves without any attempt at buying stores. On the Wolds, however, there were nearly as many cows as young stock.

Variations in the numbers of sheep per farm were much greater than in cattle. The big Wolds farms had the largest numbers, and they were followed by the North Yorkshire Moors group which exceeded the Dales by more than would have been expected from a comparison of the valuations. Compared with these groups there were very few sheep in the Plain of York in spite of its relatively large farms.

There were more horses on the Wolds than on any other group, but relatively little horse-rearing was done on them, judging by the low ratio of young horses. The Cleveland area, on the other hand, had a high ratio of young to old horses, and this suggests that horse-breeding was already a feature of Cleveland farming before the seventeenth century closed.

The only groups in which the valuation of pigs was at all important were the Plain of York, the Wolds, and Holderness (Table III). But even in them less than half the inventories included any pigs at all, or at any rate a sufficient number to justify including them in the valuation.

TABLE III
INVENTORIES SHOWING PIG-KEEPING ON A COMMERCIAL SCALE

Group	Records with:			No. of inventories with 4 and more pigs*	Per cent of total	No. of inventories with 10 or more pigs*	Per cent of total
	No pigs	Pigs	per cent				
Plain of York	292	139	32	39	9	6	1
Wolds	20	18	47	9	24	2	5
Holderness	42	37	47	9	11	3	4

* excluding sucking pigs

Poultry were not quite so unimportant as pigs in the Dales, Craven, and the West Riding Industrial area, but nevertheless only about one inventory in ten recorded any (Table IV). They occur in between about a quarter and a third of the inventories in the Plain of York and Cleveland, and in more than

half those on the North Yorkshire Moors, the Wolds, and in Holderness. The average valuation was about 5 shillings per farm. The maximum was £1, but most groups did not exceed 10 shillings. Except on the Plain of York and

TABLE IV
INVENTORIES SHOWING POULTRY-KEEPING ON A COMMERCIAL SCALE

Group	Records with:			Average valuation	Flocks valued at more than 6s.		Maximum valuation of poultry per farm		
	No poultry	Poultry	per cent		no.	per cent			
				s. d.			£	s.	d.
Dales	106	10	9	4 4	3	3		10	0
Craven	84	11	12	5 2	3	3		8	6
N. Yorks Moors	20	29	59	3 1	3	15		10	0
Cleveland	22	9	29	4 6	2	7		8	0
Wolds	16	22	58	4 8	4	10		12	0
Holderness	33	46	58	6 0	18	23	1	0	0
Plain of York	326	104	24	7 9	57	13	1	0	0
West Riding Industrial	29	4	12	4 7	1	3		10	0

in Holderness, there were practically no farms where poultry were kept on what could be regarded as a commercial scale.

Having established that there are some grounds for grouping the farms according to region, it remains to consider whether the eight groups chosen do in fact represent eight different systems of farming or whether more than one of the eight regions followed the same system. Alternatively, do the regional averages conceal two or more systems of farming? Two very similar groups are the Dales and the North Yorkshire Moors. On *a priori* grounds the investigator acquainted with present-day conditions might expect to find a good deal of similarity in their systems, and from the information contained in the table it is apparent that in size and in the distribution of the capital in the inventories the systems were similar. In fact, the only items in which there was a significant variation were in gear and in the proportion of the crops in hay and corn respectively. Both these differences suggest that the greater emphasis on arable farming which is known to characterize the North Yorkshire Moors today was also a feature of farming there 300 years ago.

Two other groups which show a considerable degree of similarity in the distribution of their capital, though not in its total amount, are the Holderness group and the West Riding Industrial group. The Holderness group

relies rather more on crops, sheep, and horses; the West Riding group on cattle, gear, and sundries, but the differences are only slight. It is much less easy to reconcile oneself to the similarity in structure of these two groups than it is to the Dales and North Yorkshire Moors groups. Holderness is a low-lying, heavy land district, now regarded as one of the best in the whole country for arable farming. The West Riding Industrial district is, on the other hand, high-lying, hilly, with a climate which is less adapted for arable cropping than for grass. Today few districts show bigger contrasts than these two. Yet all the evidence in Table I, including the proportion of arable crops to hay in the records that provided this information (91 per cent on both), emphasizes the similarity in the structure of the farming of these two groups. Later tables take this subject further.

However, to study the structure of farming in a region in this way is an empirical approach, and in spite of any characteristics in the farming that it may throw up, it gives no assurance that the group averages are composed of farms each of which follows a system similar to the average, rather than a hotch-potch of farms following two or more systems, with the group average representing the actual farming of no farm (or only a very small proportion of the farms) in the group. When the individual records in each group were scrutinized from this point of view, it rapidly became evident that on most of them only a proportion of the farms exhibited a structure similar to the group average.

This is not altogether surprising. If the farms in a region today are grouped, it is always found that however homogeneous the region may appear to be, a considerable proportion of the farms follow systems which differ markedly from the average. Thus a recent investigation into the systems of farming in the Boroughbridge district of Yorkshire (selected as an area where the farming is as uniform as any in Yorkshire) showed that out of 339 holdings in 29 parishes, 103 are of less than 10 acres, and 18 exceed 350 acres. The number of holdings over 50 acres (178) was slightly greater than the number under 50 acres (161). The systems of farming were studied on the holdings over 50 acres. On 91 of them (51 per cent) the system was based on arable farming (including at least 10 per cent of cash roots), with feeding or rearing cattle, but no dairy herd. The remaining 49 per cent followed a variety of systems, including arable with a dairy herd; non-intensive arable; grass farms with a dairy herd; and grass farms with no dairy herd.¹ As this area had been selected for its relatively high degree of homogeneity, it will be appreciated that considerable variation from the group average on the part

¹ J. B. Butler, *Profits and Purpose in Farming; a Study of Farms and Smallholdings in part of the N. Riding*. Univ. of Leeds, Dept of Agriculture, Economics Section.

of individual holdings must be allowed before the possession of the characteristics of regional farming are denied it. Probably there are reasons for more and wider variations in the systems of farming within a region today than there were in the seventeenth century. The advantages of applied science can only be properly exploited when farming systems conform to the pattern which natural and economic factors dictate, and modern transport has made possible a degree of regional specialization which would often have grave risks for a self-subsisting community. Nevertheless, it would be unreal to insist on a high degree of homogeneity for the purposes of this study when present-day standards have to be so low. It must be admitted, too, that the system adopted for comparing the structure, i.e. relative percentages of the main items in the inventory, is one that is not altogether reliable. An individual farm may have a larger than usual investment in one relatively unimportant item, say, horses, which will upset the percentages of all the other items in that farm. Further, the total amount of the investment in some farms is so small that the difference between even one or two head of stock, or a few quarters of grain, will upset the pattern of farming constructed in this way. All this emphasizes the limitations of this method of study. They are limitations which can, however, be overcome by the use of large numbers of records and critical examination of each to see that it can be justifiably used to build up a group.

By examining the individual records it became clear that each group (except the Wolds) contained a number of farms where the system differed markedly from the average. In some groups, however, the majority showed the characteristics of the average, and these groups have been refined by omitting the farms which did not conform to the popular pattern. Elsewhere it became evident that the groups were not representative of any widespread type of farming. Thus the Plain of York, Holderness, and Cleveland groups showed no signs of homogeneity, but some farms throughout these areas were found to be following similar systems. It was obvious that a considerable reconstitution of several groups was required.

The regrouping which was necessary to allow for the effect of those farms in each group which followed a 'minority' system resulted in the production of ten groups under three main headings, Highland farms, Lowland farms, and Others. The average inventories for each group, and their percentage composition, appear in Table V. The greater importance of corn on the lowland groups than elsewhere is very apparent, and the relatively higher valuation of corn on the larger than on the smaller farms suggests that corn-growing was a function of size. It is also likely that the state of drainage of the land affected the system of farming. Arthur Young found Holderness a very

TABLE V
VALUATIONS PER FARM: MAIN SYSTEMS IN EACH FARMING GROUP

No. of Records	North Yorks Moors				Wolds † 54	460 Lowland Farms			West Riding Industrial	
	Dales 55	Craven 44	Trend 21	Craven Trend 19		Mainly Corn 134	Mainly Cattle 212	Corn and Cattle 114	With Sheep 17	Without Sheep 16
Hay	£ 4½	£ 1½	£ 1	£ ½	£ 2½	£ 3½	£ 4	£ 4	£ 2½	£ 2½
Corn	½	5½	5	4	52½	53	13	23	11½	9
Cattle	20½	33½	23	27	22	23½	33	23	21½	20½
Sheep	21	3½	23	7½	17½	3½	7	5	9	—
Horses	7	6½	3½	4½	12	8	8½	8½	5	4½
Pigs*	neg.	½	½	1	2½	1½	1	1½	1	neg.
Gear	1½	4	3	3	7	6½	4	5	4½	3½
Sundries	1	neg.	1	1½	1½	1	½	½	2	1
TOTAL:	56	55	60	49	117½	100½	71	70½	57	41
	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
Hay	8	2	2	1	2	4	5	5	5	5
Corn	1	10	9	8	45	53	19	33	20	22
Cattle	36	61	38	55	19	23	46	33	38	50
Sheep	38	7	38	16	15	4	10	7	16	—
Horses	12	12	6	9	10	8	12	12	9	11
Pigs*	neg.	1	1	2	2	1	1	2	1	—
Gear	3	7	5	6	6	6	6	7	8	9
Sundries	2	—	1	3	1	1	1	1	3	3
TOTAL:	100	100	100	100	100	100	100	100	100	100

* includes also a small amount for poultry and bees.

† includes 16 "Plain of York" Wolds-type farms.

unproductive district at the end of the eighteenth century owing to its wetness. Yet in the Middle Ages numerous Acts of Parliament were passed for draining Holderness or for embanking it against the sea. These ceased abruptly in Henry VI's reign, and were not resumed until 1709. It is unlikely that no farmers or lords maintained the drainage on their holdings or estates, but evidently a large number paid little attention to it. This difference in management must have influenced the productive capacity of the land enormously, and may well have been the prime cause of the difference in the farming systems in Holderness in the seventeenth century.

But probably the outstanding feature of the farming is the importance of cattle in all groups. On five of them the valuation of cattle exceeded the

valuation of any other individual item, and on three others it was practically equal to the highest item. Only on the Wolds and the Mainly Corn Lowland group did cattle definitely take second place. Their importance in seventeenth-century farming is very well illustrated by the inventories, and it is probably not too much to say that cattle formed the backbone of the farming of the times.

The information on regional farming in Table V gives the average valuations of farming groups, each of which consisted of farms following the same system. Generally, however, the number of holdings smaller than the average was greater than those which exceeded the average. The modal farm in each group would, therefore, be one smaller in size than the average appearing in Table VI. Frequency distributions have been plotted in order to show what,

TABLE VI
NUMBERS OF LIVESTOCK AND DEADSTOCK AND QUANTITIES OF PRODUCE
on "model" farm in each of Ten Farming Groups

	Dales Craven		North Yorks Moors		Wolds	Lowland			West Riding	
	no.	no.	no.	no.		Corn	Cattle	Corn and Cattle	With Sheep	Without Sheep
<i>Cattle</i>										
Cows	4	5	4	5	4	3	5	4	3	4
Oxen	—	2	2	2	2	2	2	2	2	1
Others	8	9	8	10	5	5	8	7	4	5
TOTAL:	12	16	14	17	11	10	15	13	9	10
Sheep	90	30	70	40	*	20	20	20	40	—
<i>Horses</i>										
Working	1	1	1	1	3	2	2	2	1	1
Young	—	—	—	—	—	—	—	—	—	—
Pigs	1	1	1	1	Sow	1	1	1	1	1
Hens	—	—	12	12	9	6	6	6	—	—
Wains	—	—	1	1	1	1	1	1	—	—
Coups	—	2	—	1	—	—	—	—	1	1
Ploughs	—	1	1	1	2	2	1	2	1	1
Harrows	—	1	1	1	2	2	1	2	1	1
Hay Stack	2	—	—	—	—	—	2	1	1	1
Wheat qrs	—	—	—	—	30	8	—	10	—	—
Barley qrs	—	—	—	—		5	5	5	—	—
Oats qrs	—	5	5	5		5	—	5	12	8
TOTAL	£44	£42	£45	£45	£61 or £89	£57	£47	£55	£41	£30
VALUATION:										

* Wolds farms were equally likely to have about 30 or 150 sheep.

in fact, was the most usual occurrence, and from them a 'model' has been constructed for each group to show the sort of farm which would be most representative. This information is presented for all groups in Table VI.

The total number of cattle varied from nine per farm on the West Riding farms with sheep to 17 in Craven, and was usually made up of a pair of oxen and nearly twice as many young cattle as cows.

Numbers of sheep varied more widely than cattle but only three groups were likely to have more than 40 sheep on the representative farm.

The number of horses was influenced by the size of farm and the importance of corn, but it was unusual to find more than two working horses except on the Wolds.

Most farms were likely to have a pig, but few had more than one, and a dozen hens was usually the maximum number of poultry.

Equipment was usually very simple, and seldom exceeded a wain or coup, a plough, and one or two pairs of harrows, with a variety of hand tools and dairy utensils.

The amount of crops on hand varied, of course, during the year, and the quantities which appear in Table VI are no more than an attempt to indicate the relative amounts of the different groups.

As already indicated, the total valuation of the model farm was less than the average on each group. It just exceeded £60 on the Wolds—on the Wold farms with larger sheep flocks it could easily be half as much again—but on most groups it was less than £50.

This investigation shows quite clearly that farming in seventeenth-century Yorkshire varied according to district. It is equally evident, however, that other important factors influenced it. In such districts as the Plain of York and Holderness the type of farming even in those days varied widely, and it seems probable that drainage, or the lack of it, was the main cause of the difference. But it is easy to exaggerate the variations in farming, for present-day experience shows no more homogeneity in districts which had been picked for this factor.

The highland districts of Yorkshire relied more on cattle and sheep, while the lowland districts grew more corn. The importance of cattle, however, was considerable on all farms, and cattle can be regarded as the backbone of seventeenth-century Yorkshire farming, almost irrespective of district.

By building 'models' the structure of the 'representative' farm of each group has been studied, and the amount of variation between the districts judged, by comparing the numbers of stock and the amounts of corn and hay on representative farms group by group. On the ten types of farming groups the total valuation varied considerably—from £30 on the West Riding In-

dustrial farms without sheep to £61 on the Wolds (or £89 if the larger sheep-flocks are taken as typical of the Wolds), although no less than six groups had models of just over £40 total valuation—which provides little scope for showing wide variations in type of farming. Nevertheless the variations which appear in the models, as well as those in the larger groups of Table I, provide an individuality to each group which reflects very clearly the influence of region on the system of farming in the seventeenth century.

NOTES AND COMMENTS (*continued from page 102*)

situation of the Society was satisfactory and the balance brought forward had risen from £229 to £347.

At a meeting of the Executive Committee held later in the day, Mr W. Harwood Long was elected Chairman.

FUTURE CONFERENCES

The One-Day Joint Conference with the Association of Agriculture will be held in the Institute of Education, University of London, on Saturday, 3 December, when papers will be read by Mr Michael Havinden on Agricultural Progress in Open-Field Oxfordshire and Mr John Saville on Public Opinion and Agricultural Depression, 1880-1900. It is hoped that the chair will be taken by the President.

The Annual General Meeting and Conference for 1961 will be held at Seale Hayne Agricultural College, Newton Abbot, Devon, from 5 to 7 April. Among those giving papers will be Professor B. H. Slicher van Bath of the Department of Rural History at the Agricultural University of Wageningen and Mr J. Z. Titow. Mr S. T. Morris of the Department of Agricultural Economics, 1 Courtenay Park, Newton Abbot, will act as local secretary.

EXHIBITIONS ON AGRICULTURAL HISTORY

There have been three recent museum exhibitions of interest to agricultural historians. The first was opened at the Castle Museum, Norwich, on 25 June by the Minister of Agriculture and is entitled 'Four Thousand Years of

Norfolk Farming'. In choosing this challenging title the staff of Norwich City Museums have set themselves a stimulating and difficult task, which they have carried through with very creditable success. In addition to the exhibition itself, the Museum has published an eighty-page illustrated catalogue which not only describes exhibits, but at the same time provides a short history of Norfolk farming. The exhibition closes on 2 October.

In connection with the meeting at Reading University this summer of the International Grassland Congress, the Museum of English Rural Life arranged a documentary exhibition of Grassland Husbandry in the last Two Hundred Years. It opened on 5 July and will close on 30 October. There is no published catalogue, but as an introduction to the exhibition the Museum has published an essay called 'Grassland Husbandry in the last Two Hundred Years' by Professor H. Cecil Pawson.

Under the auspices of the National Museum of Antiquities of Scotland, an exhibition of agricultural implements and techniques has been opened at the Museum Gallery, 18 Shandwick Place, Edinburgh. It comprises a number of sections dealing with various aspects of agriculture, some obsolete, some from current practice. The main feature is the section devoted to the history of the plough in Scotland. The organizers intend to hold a similar exhibition every summer, and they appeal for fresh materials from farmers, crofters, and

rural handicraftsmen, so that the present sections may be changed or enlarged from time to time.

ECONOMIC HISTORY SOCIETY
CONFERENCE

The Annual Conference of the Economic History Society will be held at the University of the South-West, Exeter, from April 7th to

April 9th, 1961. The theme will be Transport and Inland Trade. It has been arranged that the British Agricultural History Society Conference shall conclude at lunchtime on April 7th in order that members wishing to attend both conferences may have time to travel from Newton Abbot to Exeter for the beginning of the Economic History Society Conference.

NOTES ON CONTRIBUTORS

A. S. Thomas, B.Sc.(Hort.), M.Sc., D.Sc., formerly in the Colonial agricultural service, is now recording changes in vegetation for the Nature Conservancy. He has published many papers on ecological subjects in the *Journal of Ecology* and elsewhere.

G. R. J. Jones, M.A., lecturer in geography in the University of Leeds, is engaged on a full-scale study of the relationship between settlement patterns and land tenure in Wales.

Gordon Donaldson, M.A., D.Litt. (Edinburgh), Ph.D. (London), was an Assistant Keeper of the Scottish Records from 1938 to

1947, and is now Reader in Scottish History in the University of Edinburgh. In addition to several volumes edited for the Scottish Historical Society, he has published books on *The Scottish Reformation* and *Shetland Life under Earl Patrick*.

Miss H. M. Clark is a research scholar in the department of English local history, University of Leicester.

W. Harwood Long, M.A., is Provincial Agricultural Economist in the University of Leeds department of agriculture.

Book Reviews

PETER MATHIAS, *The Brewing Industry in England, 1700-1830*. Cambridge University Press, 1959. xxviii+596 pp. 85s.

The Industrial Revolution has been presented for the most part in terms of changes in the mining, metallurgical, and textile industries. Now we have for the first time a detailed and scholarly account of the 'revolution' in an industry of the food and drink group, and one which was wholly dependent for its raw materials, barley and hops, on native agriculture. By the end of the seventeenth century the terms 'ale' (originally a sweetish, unhopped malt liquor) and the newer 'beer' (a bitter, hopped malt liquor) had come to describe more or less identical products following the victory of the latter drink. Beer brewing was already to a great extent a factory industry in London and the larger towns. There was even a certain amount of automation, based on horse-driven pumps and gravity feed, and there existed a mass retail market for beer similar to that served by the flour miller and baker. But expansion in the larger breweries was limited by the cost of transport and the risk of deterioration in the finished product. Then in or about 1722 came the invention of porter and the subsequent growth of porter brewing, particularly in London; in fact Mr Mathias's book deals mainly with the period during which the cheaper and hardier porter reigned supreme. "The appearance of the new beer should be seen . . . as an event of the first importance, or as an invention exactly equivalent in its own industry to coke-smelted iron, mule-spun muslin in textiles, or 'pressed-ware' in pottery." After the application of the rotative steam engine to the trade from 1784 onwards it became possible to speak of 'power-loom brewers', and in 1796 Samuel Whitbread brewed "for the first time in any brewery in the world, over 200,000 barrels of porter in a single season." The basis of this industry was 'John Barleycorn'. As Mr Mathias remarks, wheat, "the queen of

cereals, has exercised a far wider dominion over the textbooks of farming history than she has ever enjoyed in the fields." In the early eighteenth century the national output of barley, which, unlike wheat, could be grown profitably in every county in England and Wales, was almost certainly greater in bulk than that of wheat. (An unfortunate error in line 18 on page 390, where 'bushels' should read 'quarters', makes nonsense of Charles Smith's estimate of 1766 for English oat, rye, and wheat production.) Mr Mathias's chapters on national and regional barley farming, malting, and the hop industry and its markets are in themselves a first-class contribution to the history of English agriculture. This scholarly book is, however, packed throughout with well-digested information, drawn very largely from hitherto unquarried business archives, and it is difficult to see how it can ever be superseded.

W. H. CHALONER

B. H. SLICHER VAN BATH, *De agrarische geschiedenis van West Europa (500-1850)*. 416 pp. Aula-Boeken, Het Spectrum N.V. Utrecht: Antwerp, 1960. f. 3.50 (about 7s.). Paper back.

Ever since I read André J. Bourde, *The Influence of England on the French Agronomes, 1750-1789*, I have been convinced that one of the most neglected factors in the history of the development of farming is the relation with each other between the various systems practised in the different countries of western Europe, and at a later date those of the world. My studies for the last two volumes of the *History of Technology* underlined, at least in my own mind, this conviction. The most familiar nexus amongst all of these is that between Flanders and this country which I have discussed in a minor way in an essay 'Low Countries Influence on English Farming' (*English Historical Review*, Oct., 1959). There are many others: the persistence of the classical tradition along the Mediterranean littoral,

the influence of the Arabs in Spain and Sicily, the development of a four-course rotation in Piedmont and the Moselle highlands, the relation between Denmark, Schleswig, Friesland, and north-west Germany, both in cattle-breeding and crop rotation.

Such studies as those of Dr Bourde and my own only sketch the fringes of the subject. Now comes to hand Professor Slicher van Bath's elaborate and careful study. It is a major work in a minor dress, covering more than a thousand years in time, and an equally wide area in space. By the year 500 A.D. the economy of the *Pax Romana* had collapsed; by 1850 the modern period of mechanical industrial production was well established, and new transport facilities had made the importation of overseas foodstuffs possible. Times had changed. This is not to say, of course, that industry had not been developed, and that the exchange of manufactured goods for foodstuffs did not exist before that date; but the recovery of a money economy had been slow in appearing. It took nearly a thousand years.

Professor van Bath has described in detail the so-called natural economy of western Europe between the collapse of the Roman Empire and the Middle Ages. He describes the slow emergence of feudality, and he brings to our notice many documents of the early middle ages that are not, I suspect, too well known to agricultural historians in this country. He has compiled convincing figures showing area yield and kinds of grain cultivated in different districts, and he has discussed the feeding habits of people dependent for their nutrition on their systems of agriculture and the crops cultivated.

The recovery and increase of population between the ninth and the thirteenth century is familiar ground, as is the general effect of the Black Death. From this time onwards there have been innumerable local-period studies, and the general outline of the progress of western Europe is perhaps better known. It would be supererogatory to re-sketch it here. It is enough to say that a comprehensive description of what happened from the limits of east Germany to the Atlantic, with some

glances at Scandinavia and occasional references to Spain and Italy, is provided. The progress in land reclamation, the change in the relation of landlord and tenant, the effects of economic, demographic, and industrial development are not neglected, and instructive statistical tables, when the material allows, are provided. The development of new techniques in farming is discussed. A glance at the bibliography shows a remarkable acquaintance with the vast literature of the subject. This is a book that has long been wanted, is most admirably designed, and should be translated into English without delay.

G. E. FUSSELL

J. A. SYMON, *Scottish Farming Past and Present*. Oliver and Boyd, 1959. 476 pp. 42s.

As Mr Symon puts it at the beginning of Chapter XVIII: "From the agricultural standpoint Scotland is not one but several countries, each with varying conditions of soil and climate determining its system of farming." This is what gives rise to the difficulty of writing, in one volume, a comprehensive and satisfactory account of Scottish agriculture from earliest times till the present day, even when in this case the writer is one who has upwards of fifty years of experience behind him as a practical farmer, a lecturer on agriculture, and a representative of the Government concerned with agricultural education and research. This difficulty becomes evident from those chapters of the book which deal with the eighteenth century onwards.

The first hundred pages bring the story through the feudal and monastic periods up to the beginning of the eighteenth-century improvements. Much valuable material is set before us, for example on early leases (pp. 67 ff.) and teinds (81 ff.). By combing through the *Acts of the Parliament of Scotland* and such works as the *Rental Book of the Cistercian Abbey of Coupar-Angus*, Mr Symon has amassed a deal of useful statistical information about exports of cattle, sheep, hides, and wool, exports and imports of grain, the value of fishery products, the numbers of animals and hens, and the quantities of produce rendered as rent

in kind (from which an idea of the agricultural output for some parts of the country may be gained).

The first two chapters are illustrated by seven Figures, the sources of only two being given. The sickle plough on p. 7 looks like a poor copy of the one shown in Maclean's *History of Mull*, 1925, II, p. 112, or in J. Macdonald's *General View of the Agriculture of the Hebrides*, 1811, p. 156, and the caschrom is too awkwardly shaped to be workable (*caschrom* is invariably spelt wrongly throughout the book with a grave accent above the *a*). The "cuppled house" on p. 27 should also be better represented. The illustrations are not as closely linked with the text as one would like, and this also applies to most of the photographs, in themselves excellent, which ornament the latter part of the book.

For the eighteenth century, a certain diffuseness of treatment is evident. Thus, to get anything like a complete story one must read Chapters VII, IX, XVII, and XIX, and, for the Highlands and Northern Islands, Chapters VIII and XVII. The emphasis is on the individual achievements of "leading personalities." It is not easy to get the pattern of eighteenth-century agriculture clear for the various parts of the country, and Mr Symon is too apt to generalize for all of Scotland what is in fact characteristic of only a small area, as can be seen from the concluding paragraph of almost every chapter in the book. Considering the enormous wealth of material at the disposal of the eighteenth-century agricultural historian, his somewhat scanty treatment of the period is surprising. For this period, and throughout the chapters which take the story of Scottish agriculture through the periods of depression and prosperity caused by the wars of the nineteenth and twentieth centuries, Mr Symon tends to paint pictures of unrelieved gloom or of all-embracing rosiness. The mixture of grain crops and beef-production gives Scottish agriculture considerable elasticity, even when times are very bleak.

The two chapters on the Highlands and Northern Islands are in many respects inadequate, and in some points inaccurate.

Machairs, incorrectly described on p. 119 as "peat-covered lands," are properly tracts of bent-covered sandy soil. In a book of this size and scope one would expect a better source than John Gunn's *Orkney Book* (1909) for information on the complicated story of udal land tenure in Orkney. The great part played by the beef industry in the Western and Northern Islands, and its considerable influence on agriculture, is not mentioned. It is also worth remembering that the clearances, which turned much cultivable land into sheep-runs, gave a considerable boost to the herring industry from the re-settlement of displaced persons at the coast. As always, however, we are given a lot of handy statistical information; but a full treatment of agriculture in those areas really demands a separate volume by a specialist.

Chapter XVIII, on land settlement, deals with crofting agriculture among other things. Since 50,000 of the 75,000 agricultural holdings in Scotland are under 50 acres arable (p. 424), one would like to see a somewhat fuller treatment of the subject. Crofting, even more than farming, is a way of life rather than an industry, and since the geography of Scotland will probably always make crofting agriculture an essential part of its economy, the ideal type of land settlement would seem to be that in which, by a series of holdings of graded sizes, a young man of enterprise and ability could climb the ladder of agricultural success without any great initial outlay of money. It is well to be reminded that a Lowland croft, which is run like a miniature farm, is very different from a Highland croft, though both to some extent come under the definition of a croft, on p. 287, as "any self-contained and separately occupied small unit of from one to ten or more acres, exclusive of outrun."

This meaning of the word *croft* came into use towards the end of the eighteenth century and became firmly established after the *Crofters Commission Report* of 1884. In the days before enclosures, the word was applied to the infield, or cultivable land around the buildings, or a portion of this, but not to the whole agricultural unit. When this has been realized, the problems raised about medieval "croftis"

on p. 287 and elsewhere become non-existent.

The chapters dealing with twentieth-century agriculture, bringing the story up to the present day, and those dealing with specific topics—livestock, poultry and bees, grasslands, the potato, etc.—are the best parts of the book, and will have the widest appeal to the farming public. The great and ever-increasing part which the government has played in all branches of agriculture, chiefly from the time of the 1914-18 war, is here documented by one who has inside knowledge of the department most intimately concerned with agriculture. His keen interest in experiment and research on subjects which, like bees and horticulture, are not exclusively agricultural, and in the diffusion of knowledge through instructors, advisers, group discussions, etc., results in a readable and informative section. The story of the Highland and Agricultural Society, of the various Research Institutes and Associations, of the ramifications of their work, and of the increasing influence these bodies are exerting on all branches of food production (and thereby on the social well-being of the nation) makes very interesting reading.

The appendices are of considerable value. The first, giving a chronological list of books relating to Scottish agriculture down to 1850, should, when used in conjunction with the similarly large bibliographical appendix in J. E. Handley's *Scottish Farming in the Eighteenth Century*, make it unnecessary for future writers on Scottish agriculture to use up space on book lists. The other appendices give a list of the Acts of Parliament relating to agriculture from David I to George VI; the fiars prices of oats from 1647-1956, thus supplying a need which Malcolm Gray felt in *The Highland Economy* (1951); and a group of tables containing agricultural statistics relating to crops, labour, production, distribution of different types of farms, and so on. In a book so generously endowed with appendices, one might also wish for a glossary, since a number of Scots words, such as *muirburn*, *winning*, *shielings*, *haining*, *mashlum*, etc., are not al-

ways glossed in the text, and will not all be found in English dictionaries.

The book as a whole is well produced and pleasant to look at. It is to be hoped that the fair number of misprints and minor errors will be corrected in a later edition.

ALEXANDER FENTON

THOMAS C. SMITH, *The Agrarian Origins of Modern Japan*. Stanford University Press, 1959. xii + 250 pp. 40s.

The author, an associate professor of history at Stanford University, considers that the rapid modernization of Japan after the Meiji Restoration of 1868 was prepared and determined largely by agrarian development in the Tokugawa period. In the first part of this book he studies the traditional seventeenth-century village with respect to its land system, social organization, farming practices, and the structure of political power. Then in the second part he traces the process of transformation of the village from the eighteenth century onwards, through the growth of markets, rising agricultural productivity based on technical advances, changing farming system and class structure, and political conflict in the village; and he stresses the importance for Japanese history of agrarian changes, the central feature of which was a shift from co-operative to individual farming, "perhaps justifying comparison with the agricultural revolution in Europe." Finally he makes clear the significance of these agrarian changes for later economic and political development. Besides making full use of the researches prosecuted since the war by Japanese scholars, usually unfamiliar to foreign students by reason of linguistic difficulties, he also utilizes original materials himself. His work is a most attractive survey of the subject, and at the same time a clear and reliable summary.

The most interesting point of his study for English agrarian historians is that he always tries to compare the agrarian changes of the Tokugawa period with contemporary agrarian development in western European countries; but finding that they took entirely different courses, "despite the fact that the

starting points in the two cases were similar in important respects," he notices the inadequacy of the comparison. It seems to me, however, that an interesting and profitable comparison might have been possible had he tried to choose the counterpart of agrarian changes in Japan at the corresponding stage of economic development in European countries, instead of comparing directly two different developments merely because they happened during the same period.

K. UGAWA

K. CAMERON, *The Place-Names of Derbyshire*. English Place-Name Society, Vols. xxvii-xxix, 1959. lxxiv + 830 pp. £5 5s. (i.e. 35s. each).

Comparatively little work has yet been done on the farming history of Derbyshire. These three substantial volumes on the place-names of the county, therefore, are specially welcome. Mr Cameron contributes an interesting and informative introduction using the collective evidence of place-names to suggest the chronology of early settlement, leaving the reader the no less absorbing task of looking at each parish individually and speculating upon its later history of colonization and expansion. This labour is immensely rewarding, for most of the eastern half of the county as well as much of the north-west was originally densely wooded, and much clearance did not take place until the later Middle Ages. As Mr Cameron shows, the Anglo-Saxons skirted the forests by entering the county from the Trent valley and moving north and north-west along the Dove and Derwent valleys. A map showing the place-names suggestive of former woodland illustrates this argument better than words (though the purpose of the map could have been made more readily intelligible to the casual reader if it had been given a title. The same criticism can be made of all the maps, which, be it noted, are in the pocket at the end of Vol. III, not at the end of Vol. I as is stated in the table of contents and on the dust-jacket).

Many parishes in eastern Derbyshire, therefore, admirably illustrate assarting and

the growth of new settlements. Staveley, for example, itself meaning 'clearing from wood where staves were got', begot Staveley Woodthorpe by the twelfth century, Netherthorpe in the thirteenth, and The Hague by the fourteenth century. Alfreton parish acquired a new hamlet called Riddings in the mid-thirteenth century, and in the early fourteenth century Swanwick (a dairy farm) and Somercotes (summer shelters), both suggesting that they originated as the headquarters of summer dairy pastures and later developed into permanent settlements. In the Peak district of north-west Derbyshire, the *booths* of Edale parish likewise imply temporary summer pastures in the royal forest (the earliest documented reference dating from the mid-fourteenth century, at least a century after the first references to the booths of Rossendale and of Macclesfield Forest in Cheshire), which had been transformed by the mid-Tudor period, and probably much earlier, into permanent cattle stations, officially called *vaccaries*. As pressure on the land increased, colonists were found to populate even the most barren hills of the Peak. The parish of Hope Woodlands, lying in a region which is nowadays classed as land of little agricultural value, had attracted settlers to Ashop and Lockerbrook farms by the beginning of the thirteenth, and to Ronksley and Rowley farms by the mid-fifteenth century.

For a county which probably occupied almost as many of its inhabitants in its mines as in its fields by the beginning of the seventeenth century, there are surprisingly few place-names to suggest the importance of minerals, though some of the names of the groves, that deceptively alluring term for a leadmine, have survived. As for the absence of pre-English names in the leadmining area, Mr Cameron seeks to solve this problem by suggesting that the mines were worked only in the summer months and were temporary sites only. But the temporary use of land for summer pastures did not prevent other places from acquiring names that persisted into the era when they became permanent settlements. Place-name study, of course, is a

treacherous bog, and the most difficult propositions to defend are those which argue from silence. Mr Cameron is more aware of the dangers than we who look on, admire, and criticize. He treads most warily of all when considering the possibility of the survival of British villages into the Anglo-Saxon period. On this controversial issue, he seems to veer rather towards the side of those who think that few Celtic settlements survived except in the north-west. Many of his arguments, however, provoke retort. For example, even though it be accepted that "few of the names [containing the element 'walh'] bear the mark of any great antiquity," this does not prove that they were not old settlements. One would not expect such names to be of any greater antiquity than the Anglo-Saxon settlements around them. And if, as Mr Cameron believes, Walton still means a 'farm of the serfs', where, it may be asked, did the serfs come from? The stimulating debate on the survival of British villages can now continue with fresh arguments based upon Derbyshire. Mr Cameron can feel satisfied that his three volumes will start more discussion on this and other topics, for he has equipped his readers with much new knowledge enabling them to take another and more intelligent look at the Derbyshire countryside.

JOAN THIRSK

CONYERS READ (ed.), *Bibliography of British History: Tudor Period, 1485-1603*. Issued under the direction of the American Historical Association and the Royal Historical Society of Great Britain. Oxford University Press, 2nd edn, 1959. xxviii+624 pp. 63s.

The second edition of this familiar and invaluable work covers the new material on Tudor England published during the last 25 years. It is identical in form with the first, except for a rearrangement of the section covering Wales. "An exhaustive survey of the material in print has been made to 1 January 1957. Many entries have been made of books and articles appearing since that date, but no complete survey of this more recent literature

has been attempted." Altogether the volume contains over 6,500 items: some five thousand new titles were collected, of which about one-half were finally included. A comparison of the various sections thus provides an interesting if salutary conspectus of historical studies during the last generation. That on 'Political History' has expanded by nearly 60 per cent, on 'Cultural and Social History' by more than 100 per cent, but on 'Economic History' by only 30 per cent. Of the last 'Agrarian History' (under the title of 'Rural Conditions') comprises, with 102 entries, less than one-quarter, but 'Industrial and Commercial History' more than three-quarters. The problem in 'Economic History', we are told, has been rather one of "getting everything in than of leaving anything out." The present reviewer has not noted any serious omissions, though occasionally the editorial comments seem insufficient. Some further note than "The standard book on the subject" now seems called for against H. L. Gray's *English Field Systems*.

In the field of Local History the volume is open to more serious criticism. Everyone will sympathize with the editor's statement that "There is a real need for a critical bibliography of English local history, a field in which there are so many tares among the wheat. . ." It is therefore all the more pity that the present highly select entries have not been more carefully checked and sifted. It is one of the few sections not stated to have been submitted to the scrutiny of specialists, or of scholars in this country, and it is the one which most evidently requires it. The list of 'Other Works' now added under each county, generally consisting of half a dozen articles in local archaeological collections, which also appear generically under 'Local Societies', is too selective to be of much assistance. The choice of entries under 'Town Histories and Records' seems particularly haphazard, quite apart from the fact that many works so listed, like J. S. Brewer's *Hatfield House*, are not 'town histories'. To cite one county only: out of the seven items mentioned in this section under Kent, it is strange to include no less

than three works on Dover, Bridgman's *Sketch of Knole* (which is little more than a Regency guide-book), a history of Chislehurst, and nothing on either the episcopal city of Rochester or the county town of Maidstone. There are useful if old-fashioned works by J. M. Russell on Maidstone (1881) and F. F. Smith on Rochester (1928). If anything were to be included on Knole it should have been C. J. Phillips's *History of the Sackville Family* (2 vols. [1930]). The cross-references to items in Gross's *Bibliography of British Municipal History* and *Sources and Literature of English History . . . to about 1485* contain several unnecessary repetitions of items cited in full in the text, and no. 671 is an error for 677.

A casual examination, indeed, shows that the volume as a whole should have received more careful checking. Dr Finberg appears as an author on p. 364, but his name is not indexed; an index reference under Dr Hoskins's name (4335a) does not appear in the text; G. R. Batho's initials are wrongly given on p. 345; 'Deene' is mis-spelt in the index (p. 554); Dr Willan's name is mis-spelt on p. xii; Ireland's *History of Kent* remains garbled, as in the first edition, under the name 'Weland'; and Bridges's *Northamptonshire* was not compiled from "the manuscript collections of Sir Peter Whalley," but (as the title page indicates) from the manuscript collections of John Bridges by the Rev. Peter Whalley.

A. M. EVERITT

DAVID THOMSON (ed.), *The New Cambridge Modern History*, Volume XII, *The Era of Violence: 1898-1945*. Cambridge University Press, 1960. 602 pp. 37s. 6d.

Whoever may profit by reading this book, it will not be a student of agricultural history. A brief early chapter entitled "The Economic Map of the World" suggests some reasons for the general dissatisfaction with which this volume has been received. If Professor Allen had been able to concentrate on an Economic Map of Europe he might have succeeded. As it is, we can be told, of the agrarian story, only that

the first world war led to a shortage of food-stuffs in Europe, thence to over-production in Canada, Argentina, etc., to surpluses, "serious disequilibria," policies of protection, and industrial consumers paying higher prices for food. These are economic trends, not history. More interesting pieces of agricultural history may be found in the editor's own chapter on "The Transformation of Social Life." But if we are to read about agriculture in a passage on the failure of democratic political institutions in a chapter on social life, we clearly need a better index than is provided here. This volume contains a brilliant chapter on the Peace Settlement of Versailles. For the rest, one deplores that the editorial plan was not more definite and more capable of realization.

NORMAN SCARFE

VAL CHEKE, *The Story of Cheese-Making in Britain*. Routledge and Kegan Paul, 1959. xii+348 pp. 40s.

This is a delightful story of cheese-making and although historians may claim that it is not a history in the true sense, it is a book that will remain for long an important source of information. It is attractively written. The chapters on early history, more especially those dealing with cheese from Saxon to Tudor times and cheese-making in the seventeenth and eighteenth centuries, are of special interest to the local historian. In spite of the modern progress in cheese-making which the author refers to in great detail, it is unfortunate that economics and costs of production prevent us from having that rich flavour of a slowly matured and mellow blue-veined cheese. No longer do we see Blue Wensleydale in any quantity, Blue Vinney (the lovely Dorset blue) is no more, and the epicurean's dream, a Blue Cheshire, appears to have vanished entirely. It would almost appear that there is a small fortune to be made by an enterprising cheese-maker who will provide us with these delights of bygone days. A great deal of patient research has gone into the writing of this book, not only about cheese-making, but also about the lives and living conditions of those who made the British

cheeses in farm dairies throughout Great Britain.

The appendix is too scientific for the layman, and may not be detailed enough for the dairy technician; and its connection with the story of cheese-making is rather remote. Apart from this, it is a book that is a useful addition to the literature of agriculture.

ALEXANDER HAY

PHILIP A. WRIGHT, *Traction Engines*. A. & C. Black, 1959. xiv+90 pp., illus. 21s.

Little serious attention has yet been paid to the history of the steam traction engine, except by Mr Ronald Clark in his excellent studies of the firms that built them in the eastern counties. Mr Wright's book is therefore welcome as a brief general survey of the subject. Though it is primarily concerned, as its title implies, with the machines themselves, it discusses also the uses to which they were put. It has therefore something to offer to the historian who is interested in the mechanization of agriculture during the past century. The plates are useful, with a gorgeous frontispiece in full colour; and the book is admirably produced.

JACK SIMMONS

AGRICULTURAL ECONOMICS RESEARCH INSTITUTE. *The Agricultural Register*, New Series. *Changes in the Economic Pattern, 1957-9*. Oxford University Press, 1960. xii+148 pp. 25s.

This useful compilation is the second of the post-war series and follows much the same pattern as its predecessor. It has chapters on agricultural policy including the small farm scheme launched in 1959; on marketing and prices of the main products, including fruit and vegetables; and a general account of the place of agriculture in the British economy, as well as summaries of current information on rents, wages, employment, and other inputs.

Mr Frankel, the main author, has included much detail which is only of indirect concern to British agriculture, such as the international agreements on wheat and sugar, and the

negotiations between the Sugar Board and the refiners over the implementation of the agreed price for Commonwealth sugar. Future issues could be even more valuable if the text were rigorously pruned of these less important matters and all the sources quoted instead.

EDITH H. WHETHAM

MARY D. LOBEL (ed.), *A History of the County of Oxford*. Vol. VI, Ploughley Hundred. Oxford University Press, 1959. xxviii+390 pp. £6 6s.

Ploughley Hundred lies east of the Cherwell, on the borders of Northamptonshire and Buckinghamshire, and most of its thirty-odd parishes are on the belt of cornbrash between the oolite plateau and the Oxfordshire clay. Its uplands are rather bleak, and cornbrash soil is not the county's best. Although Bicester, its market town, is an ancient road junction, the Hundred is remote, and came into public notice only in times of crisis, which is why the district was pounced with skirmishes in the Civil War, and why Bayard's Green in Stoke Lyne parish was a tournament ground, and a great place for baronial intrigue, in the days before tournaments were made spectacular and respectable. Neither the Oxford canal, completed in 1790, nor the railways made much impression outside the Cherwell valley; apart from some quarrying and fishing the Hundred's staple was agriculture, and until the twentieth century its society stayed sharply divided between the parks and houses of its improving landlords and celebrated fox-hunters, and the village life so ably and movingly described in Flora Thompson's *Lark Rise and Over to Candleford*. Now, with the United States Air Force at Heyford, and a variety of other camps and bases spilling into Bullingdon Hundred, things are not what they used to be.

The Hundred's agrarian history follows an appropriately traditional pattern. There is evidence of pagan Saxon settlement at Oddington and elsewhere, and then of a gradual extension of the cultivated land that continued into the thirteenth century. There were often

two open fields made three before the sixteenth century; at Fritwell there were eventually seven, and at Islip six, but at Fringford strips and closes lay in one apparently undifferentiated maze until 1762. The Black Death did severe damage; Tusmore seems to have been depopulated by 1358, when it was emparked, and even conservative landlords like the abbot of Westminster, lord of Islip, had to grant leases and copyholds to their restless tenants. Charlton, where the plague caused fewer deaths, steadily lost its villeins by flight in the fifteenth century, and their lands were eventually absorbed by freeholders. Yet almost all the surviving medieval churches contain fifteenth-century work; the land was not a desert. There was some consolidation and private enclosure in the sixteenth century—enough to provoke an abortive rising at Hampton Gay in 1596—and sheep farms multiplied, but most of the ground remained arable until the great age of parliamentary enclosure, the latest act being that for Charlton, in 1858.

Despite the longer courses of rotation that multiple fields allowed, the arable showed signs of strain in the seventeenth century, when sainfoin was widely introduced to relieve the soil. The improving landlords, squires and rectors, who seized their chance after enclosure, often turned to dairy-farming and stock-rearing, with root crops and a Norfolk course on the dwindling arable. This was the normal pattern round Bicester, where the market flourished until the early eighteenth century, when the butter in which local estates began to specialize went to London by wagon; the town's cattle markets continued to prosper, but its general market declined in the face of plenty. So did the fortunes of the poor; the Bicester Emigration Committee even sent 111 of them to Liverpool in carts, *en route* for the United States on the rate-payers' money, but many of them worked their way back to destitution in Oxfordshire rather than perish in Eden.

This volume of the Victoria History follows the satisfactory pattern of its predecessor (reviewed *supra*, VI, pp. 117–18). Each parish

has an essay on economic and social history which sketches what is known of its farming; there are good field maps, and some pleasant illustrations. The introductory chapter on the Hundred is a little more general this time, although it is still overloaded with administrative history; there is some geology, which is an improvement, but the railways and the Oxford canal would be better noticed there than under the parishes, and so would the pattern of settlement. Certainly the book cannot be wished more expensive, even though its price represents a mere three shillings a parish, and if it were to be longer, then the extra space might best be given to longer quotations from Flora Thompson. If, after all, the reader wants to know what it felt like to live in Ploughley Hundred in the 1880's, *Lark Rise* is still his book.

GEOFFREY MARTIN

H. CECIL PAWSON, *Cockle Park Farm. An Account of the Work of the Cockle Park Experimental Station from 1896 to 1956*.

Oxford University Press for the University of Durham, 1960. xiv+262 pp. 35s. net. Cockle Park Farm of 461 acres became the Northumberland County Agricultural Experiment Station in 1896, and in 1917 60 acres adjoining, known as Paradise Farm, were added. Both were in poor condition when they were taken over, and, even in 1917, the rent paid to the landlord, the duke of Portland, was only 11s. 10d. an acre. In 1938, in order to facilitate arrangements for building improvements, the whole was bought on a 999 years' lease for £8,000. With the reorganization of the agricultural advisory service after the war, the Station was handed over in 1947 to King's College, Newcastle, by whom it has been administered ever since.

The subject of this review covers the whole sixty years of the Station's existence, practically up to the present time. It is written by Professor H. C. Pawson who has been associated with it personally for the last forty years, and in whose affections it obviously occupies the position of a favourite child. According to him, the book "presumes to be

history," and it is on this presumption that it can stake its claim for notice by agricultural historians. In fact, however, 188 of its total of 262 pages are a description of the Station's experiments during this period, and it is hard to believe that their contribution to agricultural knowledge is primarily historical. At the same time, they provide a first-class record of the experiments on which the Station has built its reputation, and they remind the reader that these deal not only with basic slag and wild white clover but with other subjects extending over the whole range of arable crops, of cattle and sheep, and even of horticulture and forestry. By 1954 there were no fewer than 1,500 plots running simultaneously.

No agricultural historian can read this book without profit. The contrast between the emphasis on basic slag for enriching the nitrogen content of the soil through clovers sixty years ago and the present-day reliance on synthetic nitrogen is an outstanding example of change. The idea that silage can provide an additional source of protein instead of merely replacing roots has a more recent origin. But the fact that experimental plots of wheat were yielding up to 60 bushels per acre in 1905 and over 30 cwt in the 'thirties indicates that today's yields have been attainable for many years under suitable conditions. In some other ways we have made remarkably little progress. Very early in his tenure of office Gilchrist found that there were big variations in the amounts of dry matter in swedes, due largely to variety, season, and soil. At Cockle Park 8 tons of swedes grown in 1904 had as much feeding value as 11½ tons grown in 1901. Yet the only tables of feeding-stuffs composition generally available to research workers today give a single analysis for swedes, with no indication what the deviations from it may be. This example draws attention to the lack of scientific data which handicaps so much agricultural research at the present time.

From the historian's point of view much the most interesting parts of the book deal with the history of the Station itself, the five-

hundred-year-old peel tower (a note on which appears as an appendix), and the biographies of the Station's first three directors. Each of these came from across the Border from farming stock, and it is possibly because of this that the early experiments at Cockle Park were related so closely to the financial side of farming. In addition, the times were depressed and the findings of science were unlikely to be followed in practice unless it could be proved beyond reasonable doubt that they would be successful financially. Somerville was fortunate in having chosen the application of phosphate (in basic slag) to poor grass land for his main experiments, for the results were spectacular in spite of the limitations of finance and staff under which he laboured.

But after three years at Cockle Park he left for Cambridge, and was succeeded by Middleton. Middleton's time there was short, too, and he was effective mainly in carrying on and extending the work Somerville had initiated. Middleton had already made a name for himself in India before he came to Northumberland, and he had a distinguished career subsequently at Cambridge and at the Board of Agriculture. But he spent long enough at Cockle Park for the fine scientific approach which he possessed to be recognized by his colleagues and successors.

Gilchrist, the third of the trio, made Cockle Park his lifetime's work and interest. His best known contribution to improved farming was the seeds mixture incorporating wild white clover, which made Cockle Park a worldwide name. In the Foreword, Sir John Russell writes that Gilchrist failed to receive the rewards that his work entitled him to. It was too empirical to attract the notice of universities, while the State bestows its honours not on professors of agriculture as such. Somerville and Middleton both received knighthoods, but they had left Cockle Park first, and they achieved fame in governmental work as well as in academic research.

The illustrations, which add to the pleasure of reading the book, include a photograph each of Somerville, Middleton, and Gilchrist. Somerville's is a reproduction of a painting

presented to him in 1923 by the Oxford University Plough Club. As those who can remember him personally must now be confined to his Oxford acquaintances, this choice is a particularly happy one.

For the rest, the references to prices and other conditions at the beginning of the century make an interesting comparison with those of today. There were instances of wheat being sold at 18s. a quarter, of rents at less than 10s. an acre, and linseed cake at £8 5s. a ton. The value of a calf was put at 40s. and cattle were usually valued at between 30s. and 40s. a cwt. Forty years ago a visit from Newcastle to Cockle Park, nineteen miles

away, took a full day and involved a train journey to Morpeth and a 4½-miles trap or horse-charabanc ride, and must have required a considerably greater sacrifice of the King's College students' time than is involved today. Communications with the College had to be by letter and a bedroom was reserved for the use, when he required it, of the Scientific Director. *Cockle Park Farm* is not a history book, but there is a lot of history in it. Moreover, the new emphasis on animal husbandry at Cockle Park is rapidly banishing those experiments which this book relates to the realm of history.

W. HARWOOD LONG

Periodicals Received

AGRICULTURAL HISTORY. Agricultural History Society. Edited at the University of Illinois. Volume XXXIII, No. 4, October 1959.

Wayne D. Rasmussen, *Forty Years of Agricultural History*.

ANNALES DE GEMBLOUX. Association des Ingénieurs Sortis de l'Institut Agronomique de l'Etat à Gembloux, Bruxelles. Volume 65, No. 4, 1959.

R. Georlette, *Les sociétés d'agriculture, en France, dans la seconde moitié du XVIII^e siècle*.

DANMARKS NATIONALMUSEETS ARBEJDSMARK. Copenhagen. 1959.

Hans Helbæk, *På Markvandring gennem Oldtidens Agre*.

FOLK-LIV. Acta Ethnologica et Folkloristica Europaea, Stockholm. Volume XXI-XXII, 1957-8.

Anders Nyman, *Hay harvesting methods on the Færoe Islands*.

Axel Steensberg, *Parallel ploughing with alternately sloping and upright ard in Columella*.

GWERIN. Basil Blackwell, Oxford. Volume II, No. 3, June 1959.

Francis G. Payne, *The retention of simple agricultural techniques*.

HISTORIA AGRICULTURAE. Yearbook of the Netherlands Institute for Agricultural History. Volume IV, 1957.

R. W. Kijlstra, *World bibliography of books and articles on agricultural history published in 1954*.

J. M. G. van der Poel, *Description of the farms in Friesland on the clay soil with some observations about the cattle-plague and the vaccination of the calves*.

J. M. G. van der Poel, *An early nineteenth-century description of farming on the islands of Hoekse Waard*.

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS. Organ of the Indian Society of Agricultural Economics. Volume XIV, No. 3, July-September 1959.

JOURNAL OF LAW AND ECONOMICS. University of Chicago Law School. Volume I, October 1958.

D. Gale Johnson, *Government and Agriculture: Is Agriculture a Special Case?* Volume II, October 1959.

LAND ECONOMICS. Madison, Wisconsin. Volume XXXV, No. 2, May 1959.

Edmundo Flores, *The Significance of Land-Use Changes in the Economic Development of Mexico*.

SCOTTISH STUDIES. Journal of the School of Scottish Studies, University of Edinburgh. Volume III, pt. 2, 1959.

Eric Cregeen, *Recollections of an Argyllshire Drover*.

Ian Whitaker, *Some Traditional Techniques in Modern Scottish Farming*.

WORLD AGRICULTURAL ECONOMICS AND

RURAL SOCIOLOGY ABSTRACTS. North Holland Publishing Co., Amsterdam. Volume I, No. 1, April 1959.

SOCIOLOGIA RURALIS. Journal of the European Society for Rural Sociology. Vol. I, No. 1, Spring, 1960. R. van Gorcum Ltd, Assen, Holland.

ULSTER FOLKLIFE. Vol. v, 1959.

THE ADVANCEMENT OF SCIENCE

THE ADVANCEMENT OF SCIENCE is designed to reflect progress in the whole field of science. While it contains articles of specialized scientific interest it is essentially a non-specialist journal which attempts to inform scientists of the progress of work in fields other than their own, and to interest students, upper form pupils of schools, and laymen who are anxious to understand something of the significance and the impact of scientific research and development.

Forthcoming issues will contain—in addition to notes and comments on matters of interest in the whole field of science, and reviews of selected scientific books and films—a wide, yet balanced, range of articles, including: *The Two Aspects of Science*, by Sir George Thomson, F.R.S.; *What the octopus makes of it*, by M. J. Wells; *Communicating with Caliban*, by Prof. H. J. Eysenck; *The Structure of the Universe*, by Prof. H. Bondi; *Twenty-five years of T.V.A.*, by Professor W. B. Fisher; *Plant Parasitic Nematodes*, by F. G. W. Jones; and *Pastoral systems in relation to world food supplies*, by Dr William Davies.

The annual subscription to *The Advancement of Science*, which is published six times a year and may be ordered from the British Association, 18 Adam Street, London, W.C.2, is 4os., post free.

SCOTTISH HISTORICAL REVIEW

VOL. XXXIX, 2

No. 128

OCTOBER 1960

CONTENTS

ARTICLES

The Battle of 'Sauchieburn'

Lothian and the Early Scottish Kings

David Livingstone the Scot

Scottish Commercial Factors in the Baltic

By ANGUS GRAHAM

By MARJORIE O. ANDERSON

By GEORGE A. SHEPPERSON

By T. C. SMOUT

REVIEWS

The Macleods; Modern Scotland

SHORT NOTICES

NOTES AND COMMENTS:

Accessions to the Register House 1959; *Surdit de Sergaunt*; 'Flitting Friday'; *Regesta Regum Scottorum*.

The Scottish Historical Review is published twice yearly (in April and October) by Messrs Thomas Nelson & Sons Ltd, Parkside Works, Edinburgh 9; it may be obtained from any bookseller or direct from the publishers. The annual subscription is 21s. post free; single issues, 10s. 6d. (postage 6d.).

THOMAS NELSON & SONS LTD
PARKSIDE WORKS, EDINBURGH 9

THE JOURNAL OF AGRICULTURAL ECONOMICS

VOL. XIV, No. 1

Price 17s. 6d.

JUNE 1960

CONTENTS

- The Local Banks in relation to the Financing of Agriculture G. S. COURSE
Value Problems in Farm Management GLENN L. JOHNSON
Commercial Horticulture in the British Economy R. R. W. FOLLEY
The Economic Theory of the Use of Pesticides—Part II
MISS PATRICIA M. HILLEBRANDT
A Farm Survey of the New Hawija Settlement P. E. NAYLOR
The Labour Utilisation Problem in European and American Agriculture
GLENN L. JOHNSON
Capital Investment in Horticulture L. G. BENNETT and R. R. W. FOLLEY

REVIEWS

ABSTRACTS

PERIODICALS

The Journal of Agricultural Economics is published twice yearly.

EDITOR: O. J. Beilby, Department of Agriculture for Scotland, St Andrew's House,
Edinburgh 1, Scotland.

SECRETARY: G. B. Bisset, Department of Agricultural Economics, University of
Reading, 7 Redlands Road, Reading, England.

MEMBERSHIP: £2 per annum.

THE ECONOMIC JOURNAL

No. 277

MARCH 1960

VOL. LXX

I. ARTICLES

- How Much Science? J. JEWKES
Progress in British Manufacturing Industries in the Period 1948-54
W. B. REDDAWAY and A. D. SMITH
The Structure of Macro-Economic Models R. G. D. ALLEN
Growth Models, Capital and Stability H. A. J. GREEN
Notes on some Controversies in the Theory of International Trade
J. BHAGWATI and H. G. JOHNSON
The Short-term Effect of the Lowering of Import Duties in Germany J. WEMELSFELDER
The Social Choice between Home and Overseas Investment A. E. JASAY
Production Functions and Land—A New Approach SIR RALPH HAWTREY

II. REVIEWS

III. NOTES AND MEMORANDA

IV. RECENT PERIODICALS AND NEW BOOKS

MACMILLAN & CO. LTD, LONDON. W.C.2

Application for Fellowship to

ROYAL ECONOMIC SOCIETY

21 Bentinck Street, London, W.1

C. S. DAVIES

The Agricultural History of Cheshire, 1750-1850

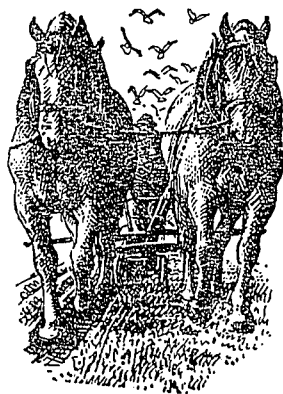
In the hundred years covered by this study the farming community of Great Britain was faced with the necessity of feeding a rapidly increasing population. This factor, together with the stimulus to agriculture provided, temporarily, by war with France, led to widespread enclosure, reorganization of the agrarian economy and improvements in farming technique.

The growth of population in Cheshire was remarkably swift and Dr Davies seeks to ascertain how far the history of agriculture in the county compares and contrasts with that of the country as a whole. She considers land tenure and conditions of tenancy, enclosure of land, the farming community and agrarian economy. Much of her information has been taken from original documents. Many of these are quoted at length in the appendices.

*F'scap 4to., Cloth bound, 35s. net
A Chetham Society Publication*

MANCHESTER UNIVERSITY PRESS

316-324 OXFORD ROAD, MANCHESTER 13



The Horse in the Furrow

GEORGE EWART EVANS

drawings by C. F. TUNNICLIFFE, R.A.

The unique story of the life and culture of East Anglia at the time when the Suffolk Punch was the centre of the agricultural community. Mr Evans gives a complete detailed picture of the social history of this period of East Anglian life. By the author of *Ask the Fellows Who Cut the Hay*.

25s

Faber & Faber

The British Agricultural History Society

PRESIDENT: SIR KEITH MURRAY

TREASURER: PROFESSOR EDGAR THOMAS, C.B.E.

EDITOR: H. P. R. FINBERG

SECRETARY: J. W. Y. HIGGS

Oxford University Department of Agriculture, Parks Road, Oxford

Executive Committee: W. Harwood Long (*Chairman*), M. W. Beresford, G. B. Bisset, W. H. Chaloner, G. E. Fussell, Alexander Hay, R. H. Hilton, W. G. Hoskins, George Houston, W. E. Minchinton, Mrs C. S. Orwin, F. G. Payne.

The Society aims at encouraging the study of the history of every aspect of the countryside by holding conferences and courses and by publishing *The Agricultural History Review*. Its constitution is printed in Vol. I of this *Review*, p. 53.

Membership is open to all who are interested in the subject and the subscription is ONE GUINEA due on 1 February in each year. Details may be obtained from the Secretary.

The Agricultural History Review

Editorial Board

H. P. R. FINBERG

W. E. MINCHINTON

G. E. FUSSELL

JOAN THIRSK

J. W. Y. HIGGS

R. TROW-SMITH

The Review is published twice yearly by the British Agricultural History Society and issued to all members. Single copies may be purchased from the Secretary for 12s. 6d. Articles and letters offered for publication should be sent to the Editor, 34 Sheffield Terrace, London, W.8, accompanied by a stamped addressed envelope for return if necessary. The Society does not accept responsibility for the opinions expressed by contributors, or for the accidental loss of manuscripts.

Printed at The Broadwater Press, Welwyn Garden City, Herts.