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The AGRICULTURAL HISTORY REVIEW



VOLUME XII 1964

PART I

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PRINCIPAL CONTENTS

The History of Sheep Breeds in Britain

by M. L. RYDER

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Dispersed and Group Settlement in Medieval Cornwall

by M. W. BERESFORD

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Harvest Fluctuations and English Economic History

1480-1619

by W. G. HOSKINS

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The History of Sheep Breeds in Britain

By M. L. RYDER

THE object of the present paper is to give an introductory review of the sources of evidence that can be used in seeking the origin of British breeds of sheep. Older ideas are discussed in the light of recent evidence from new sources, and attempts are made throughout to synthesize evidence from documentary sources with that from new archaeological and biological techniques.

The first part of the paper summarizes the evidence of sheep in Britain from the earliest times until the Middle Ages, but this phase is dealt with briefly because there is little evidence of breed type until after the medieval period. The first source of evidence on sheep ancestry comes from skeletal remains of the Neolithic period onwards, and the use of bones in this way has recently been extended into the Middle Ages. Representations of sheep, such as sculptures, are useful in the Near Eastern civilizations, but are scarce in northern Europe. From the Bronze Age onwards wool textiles have been preserved, and from about 500 B.C. sheepskin, leather, and eventually parchment (made from sheepskin) are preserved, too. Wool fibres remaining embedded in such material add to the knowledge gained from textiles. A parchment may have written records and painted miniatures of sheep on its surface, but the true history of the sheep lies within the parchment itself! Information gained from parchments and textiles has enabled the author to put forward elsewhere a hypothesis on the evolution of the fleece, and it constitutes the main new evidence in the first part of the paper, but few European parchments are available before the Middle Ages.

European records begin in Roman times, but although husbandry is often adequately dealt with, descriptions of sheep are almost non-existent until the eighteenth century. So in the second part of the paper the approach is reversed and an attempt is made to trace back the ancestry of modern breeds to the sketchy records of the Middle Ages. In this, the distribution of different types of sheep at the end of the eighteenth century is used as the basis, together with evidence from other sources such as illustrations of sheep, and the blood types of modern breeds. It is postulated that there have been three main introductions of sheep into Britain. The first to arrive were probably of brown Soay type, and this type seems eventually to have given rise to the

modern white-faced, horned breeds. The next influx was probably white-faced and horned only in the rams; this seems to have been the ancestor of the white-faced short-wools and the long-wools. The third type to arrive had a black face, and was horned; this has influenced the modern black-faced down breeds, and its descendants remain little changed as the hill breeds of northern Britain.

FROM THE EARLIEST TIMES TO THE MIDDLE AGES

Sheep were not domesticated in Europe; they were taken there by Neolithic men who migrated from the Near East.¹ When Neolithic pastoralists first advanced into Europe there was too much forest for many sheep to be kept, and pigs and cattle predominated.² While early civilizations were flourishing around the Mediterranean, primitive farmers were gradually spreading through Europe, and sheep eventually reached Britain about 3000 B.C. when Neolithic settlers crossed the English Channel.

Archaeological remains of domestic sheep were first found in the Swiss Neolithic lake dwellings, and were described by Rütimeyer in 1861. The remains were from small sheep with goat-like horns, a character which suggested that they had arisen from the Urial type of wild sheep. The Urial, which itself has goat-like horns, is the wild sheep of south-west Asia, and it is thought to have been the first wild type to be domesticated.³ This Swiss Neolithic goat-horned sheep was named *Ovis aries palustris* or the turbary sheep. Sheep remains are scarce from the Neolithic period in Britain, but bones have been found in such sites as Windmill Hill, near Avebury, Wiltshire, and in Neolithic levels of Maiden Castle in Dorset. The bones from most Neolithic sites have been from small sheep assumed to be of the turbary (Urial-like, *palustris*) type. The European climate is not conducive to the preservation of wool, and apparently the only Neolithic textiles that have been preserved had been made from plant fibres.⁴

In 1882 more skeletal remains were found by Studer in the Swiss lake dwellings. These had larger horns which led people to believe that they contained blood of the Mouflon type of wild sheep. This sheep was named *Ovis aries studeri*,⁵ and was thought to belong to a later period, about the beginning of the Bronze Age. Although *palustris* and *studeri* are still quoted as being distinct types, there is no conclusive evidence that they are. Hilzheimer held

¹ M. L. Ryder, 'The domestication of sheep', *Wood Knowledge*, IV, 1959 (10), p. 19; 'Sheep of the Ancient Civilisations', *ibid.* (12), p. 10.

² Graham Clark, *Antiquity*, XXI, 1947, pp. 123-36.

³ M. L. Ryder, *op. cit.* (9), p. 5.

⁴ Graham Clark, *op. cit.*

⁵ J. U. Duerst, *Vjschr. Naturf. Ges.*, Zürich, XLIX, 1904, p. 17.

that the two sheep were of the same period, and from the same breed, *studer* being the ram, and *palustris* the ewe.¹ Adametz pointed out that the slender-horned character of *palustris* is common to all ewes of breeds in which both ewes and rams are horned.² In addition to the large-horned and small-horned skulls discovered in the Swiss lake dwellings, he described others that were hornless. This in itself suggests Mouflon blood, because Mouflon ewes, alone among the wild sheep, are hornless. But it does seem that on most European sites the large-horned *studer* did not appear until the Bronze Age, for instance at Skara Brae, which was, however, a Neolithic survival into the Bronze Age.³ Ewart regarded the larger-horned, Bronze Age sheep as belonging to a "mixed turbary" race, and he pointed out that although these large horns can still be found in the primitive Soay sheep, this and other primitive breeds such as the Shetland sometimes have goat-like horns suggesting "simple turbary" blood.⁴ The brown Soay breed that still remains, notably in St Kilda,⁵ is usually given as an example of what Bronze Age sheep were like. The fleece of the Soay is relatively short and is moulted annually, but although it may have kemp fibres (relatively short, bristly fibres) it lacks the long hairs of some modern mountain breeds. It can be regarded as a primitive woolly type as opposed to a primitive hairy type.⁶

Sheep became more numerous in the Bronze Age (about 2000 B.C.) with the gradual decrease of woodland. Few habitation sites have been found from this period, probably because the pastoralists were nomadic, particularly in the hills such as those of the Pennines and the Lake District. This pastoral nomadism stimulated sheep breeding in Europe as much as it had done in the East. Although the accent may have been on milk and meat for food, the wool produced gave rise to the manufacture of elaborately designed wool fabrics. One of the oldest specimens is a piece of cloth from a burial in a dug-out oak coffin found in an Early Bronze Age barrow at Rylstone, Yorkshire, and now in the British Museum.

The Urn People of the Middle Bronze Age (about 1400 B.C.) seem to have been the most proficient at the manufacture of textiles, but it is from the contemporary people of Denmark that we gain the most detail of Bronze Age wool textiles. There, too, the dead were buried in oak coffins, and some burials were in peaty and such water-logged soil that the body, complete with

¹ M. Hilzheimer, *Antiquity*, x, 1936, p. 195.

² L. Adametz, *Z. Zücht.*, B38, 1937, p. 113.

³ D. M. S. Watson, in V. G. Childe, *Skara Brae*, London, 1931.

⁴ J. Cossar Ewart, *Trans. Highland and Agric. Soc. Scot.*, 5th series, xxv, 1913, p. 160.

⁵ J. M. Boyd and K. Williamson, *St Kilda Summer*, London, 1960.

⁶ M. L. Ryder, in *Nature*, CLXXXII, 1958, p. 781.

everyday clothing, has been preserved. This clothing has been described by Margrethe Hald,¹ who sent me some of the wool.

The first workers who examined wool fibres from these Bronze Age textiles thought that they must have been mixed with deer hair.² But it is now realized that the fibres described as deer hair were really the kemps that form the outer coat of the fleeces of wild sheep, and are common in the fleeces of primitive domestic sheep. Fleeces had improved by the Roman Iron Age; fewer hairs have been found in cloth from this period. In addition, whereas the Bronze Age wool was mainly brown, there were more white fibres in the Iron Age wool. This is comparable with Iron Age wool in the East: a piece of sheepskin I examined from a Scythian burial mound of about 400 B.C. in the Altai Mountains of central Asia had wool with no pigment at all.³ The fleece had an outer coat of long hairs and an under coat of fine wool, but lacked kemp fibres.

In the late Bronze Age, about 750 B.C., the Deverel-Rimbury People reached Britain. These people originated in the Swiss lake dwellings, and they set up lake dwellings in the Thames. It may have been these people who brought to Britain the larger-horned *studei* sheep, or what Ewart regarded as a mixed turbary race possessing blood from the wild Mouflon. Two types of sheep were found in the Late Bronze Age site of Jarlshof in Shetland (if we can be sure that they were not the ewes and rams of a single type).⁴ One of these was slender like the Shetland (turbary-*palustris*), whereas the other was larger and had larger horns (*studei*). The finding of hornless skulls at a higher occupational level supports the suggestion of the presence of Mouflon blood.

Ewart seems to have been the only author to develop the theory that the wild Argali sheep of central Asia has made contributions to European domestic sheep.⁵ He pointed out that the Argali is the only wild sheep in which the horns form a second spiral, and he considered that domestic sheep showing such a horn shape, e.g. the Scottish Blackface and Merino breeds, could have arisen only from a sheep with similar horns. Ewart thought that the influx of this type of sheep into Britain could be detected in the finds of limb bones from large sheep and skulls with Argali-type horn cores on Bronze Age sites in the Thames Valley. As will be seen, there has been much speculation on

¹ Margrethe Hald, *Bronze Age Fashion*.

² J. G. D. Clark, *Mesolithic Settlement in Northern Europe*, Cambridge, 1936.

³ M. L. Ryder, in *Australian J. Sci.*, XXIV, 1961, pp. 246-8.

⁴ M. I. Platt, in J. R. C. Hamilton, *Excavations at Jarlshof, Shetland*. H.M.S.O., Edinburgh, 1956.

⁵ M. L. Ryder, 'The domestication of sheep', *loc. cit.*

the question when the black-faced horned breeds reached Britain, and these finds suggest introduction (at least temporarily) of Argali influence at that time.

The sheep remains found on most Iron Age and Roman sites have been described as being of *studei* or Soay type. It alone was represented at All Cannings Cross near Devizes, Wiltshire,¹ but some sites had what was described as the *palustris* type (these may have been ewes), e.g. the Iron Age levels of Maiden Castle in Dorset. Further clearance of the forests allowed sheep to become as numerous as cattle; on most Romano-British sites the cattle and sheep remains formed roughly equal proportions, each being about 35 per cent of the total, and at Glastonbury lake village as many as 88 per cent of the bones were from sheep and only 5 per cent from cattle.

It is known that the Romans had a well-organized wool textile industry in Britain, and there is the classical reference of Dionysius Periegetes, about A.D. 300, to British wool so fine that it was comparable to a spider's web. Among several Roman specimens of textiles from Scotland examined microscopically by the author was a white true fine-wool that justified this description: it had a mean diameter of 17 microns. But Pitt-Rivers found no skeletal evidence of sheep improvement in Britain. All the sheep remains he found were from animals of similar size to the Soay, except for one bone that was larger, and which he suggested may have come from an imported ram. Dr Applebaum refers to a larger breed noted at Barr Hill, Scotland,² although Soay sheep, too, were found on this site.³

The Romans carried out selective breeding on the continent,⁴ but improvement of the fleece is unlikely to have increased the size of the carcase. Evidence from the parchment of the Dead Sea Scrolls, and from leather and wool cloth found in caves near the Dead Sea, shows the existence of a medium-woolled sheep in which about 80 per cent of the wool fibres were fine. This gave the impression of fine wool to the naked eye, but it cannot be regarded as a true fine-wool because microscopic examination shows that 15-20 per cent of the fibres are of medium diameter. It may, however, have been the renowned Mediterranean fine-wool of the ancients. A strain of this sheep could have been the ancestor of the fine-woolled Merino that emerged in Spain. It could also have been the sheep that Mr Trow-Smith considers the Romans must have brought to Britain. Such a fleece type, as will be seen,

¹ R. Trow-Smith, *A History of British Livestock Husbandry to 1700*, London, 1957.

² S. Applebaum, in AHR IV, 1958, p. 66.

³ T. H. Bryce, in G. Macdonald and A. Park, *The Roman Forts on Barr Hill, Dunbartonshire*. Glasgow, 1906.

⁴ M. L. Ryder 'Sheep of the Ancient Civilisations', *loc. cit.*

could also have given rise to the down and long-wool types, and Mr Trow-Smith considers it possible that the Romans actually introduced the long-wool. It seems likely that until the coming of the Romans the main, if not only, type of sheep in Britain was the Soay. And it seems significant that the Soay itself persists in St Kilda, off north-west Scotland, and that the tan- and white-faced horned breeds, which seem to be related to the Soay, are still today associated with Scotland and the western parts of Britain, the regions in which Celtic peoples persisted.

Sheep were perhaps more important during the Saxon period than has hitherto been realized. There are stray references, such as the famous letter of Charlemagne, which suggest a continuance or revival of the Roman export trade in wool goods. In this letter, to Offa, king of Mercia, in A.D. 796 he says that his subjects would like cloaks of the same pattern "as used to come to us in the old times." The ubiquity of sheep is clearly shown by the many Saxon place names (Shepley, Shepton Mallet, Shipley, and Skipton) that embody a reference to sheep. Mr Trow-Smith mentions a Celtic reference to white sheep in that period in terms suggesting that they were an exception. They may well have been so in Celtic areas if the Soay sheep persisted there. In fact, a sixteenth-century specimen of wool from Co. Derry had fine and medium fibres, some being pigmented, like the Soay. But some archaeological specimens of wool from Saxon England (comprising one fine specimen, three that were fine to medium, and three hairy ones) were mostly unpigmented. Further examination of one of the fine to medium specimens (from Fonaby, Lincs.) showed it to be brown, and to have a mean diameter almost as fine as the fine Roman specimen already mentioned (18 microns), but it had some medium fibres like the Dead Sea specimens.

The Domesday survey showed that soon after the Norman Conquest there were more sheep than all other livestock put together. The sheep's main function at that time was to provide milk; wool, manure, and meat were merely by-products, in that order of importance. A hundred years after the Domesday survey the sheep had increased in importance, but it is not known which of its products were of most value. There was, however, a difference in price between fine-woolled sheep at 10d. each, and coarse-woolled sheep at 6d., but Mr Trow-Smith says that the fine-woolled sheep seem to have been scarce.

Soon, however, the sheep held a unique position as a supplier of wool, first for export, and later for the medieval cloth industry that made Britain prosperous. We know that medieval sheep-farming practice was relatively highly developed, yet despite the evidence for fine-wool, there are apparently no records of selection and breeding. There are records of the numbers of rams,

wethers, ewes, and lambs kept by the great monastic houses, as well as the value of their sheep and wool. But there is little to indicate the type and appearance of sheep in the Middle Ages when different breed types were probably evolving; there may have been no breeds then as we know them today.

RECENT HISTORY BACK TO THE EIGHTEENTH CENTURY

As this article is primarily concerned with breeds, the approach will be changed at this point, and an attempt will be made to trace back the ancestry of modern breeds to the sketchy references of medieval times. But there have been so many changes in the character of breeds, particularly in the last two hundred years, that care must be taken not to assume that a breed in the past with the same name as a modern breed had necessarily the same appearance.

Not until the end of the eighteenth century did agricultural writers begin to give definite descriptions of different breeds. This was unfortunately just after many breeds had been changed; the carcass was improved, but the wool usually deteriorated. Sir John Sinclair (1791) divided sheep into short-wools (the wool of which is used to make woollens) and long-wools (wools used to make worsteds).¹ This classification seems to disregard the hairy-fleeced mountain sheep whose wool today is mostly used in carpets. Youatt (1837), however, grouped the Scottish Blackface (mountain breed) with the middle-wools, which he said were originally short-wools.²

Sinclair said that sheep producing short wool were small and thrived over a wide range of pasture, being formerly found on unenclosed commons. These sheep, as will be seen, were variable, but they probably comprised several distinct types. Sinclair said that before about 1750 farmers concentrated on short, fine wool, but when better feed (e.g. turnips) became available they introduced larger animals (the long-wools) to produce more meat.

Perhaps the best source of information about the end of the eighteenth century is Youatt (1837), who wrote at a time when the native breeds of many counties were fast disappearing. He went so far as to say that the old English short-wools had developed into middle-wools (as a result of better breeding and feeding) and that when he wrote, all short wool came from the continent (presumably from Merino sheep). He said that the short-wools had been very widespread and variable, some having horns, and some not. But when he wrote, these had mostly disappeared, and a larger and better sheep had been established by crossing with long-wools.

Around 1800 there seem to have been about twenty recognizable breeds as opposed to roughly thirty today, and the first stage in a projection into the

¹ Sir John Sinclair, *Address to the Society for the Improvement of British Wool*, 1791.

² W. Youatt, *Sheep, Their Breeds, Management and Diseases*, London, 1837.

past is to attempt to link modern breeds with those of 1800 (Fig. 1). Farmers are often reluctant to say exactly how they evolved new breeds, but there are some useful sources of recent history.¹

TABLE I
CLASSIFICATION OF MODERN BRITISH BREEDS

<i>White-faced, horned mountain</i>		<i>Black-faced, horned mountain</i>	
Shetland*	0.69	Scottish Blackface**	0.72
Herdwick*	0.71	Rough Fell**	0.81
Cheviot*	0.54	Swaledale**	0.85
Welsh Mountain*	0.54	Dalesbred**	0.63
Radnor*	0.47	Lonk**	0.45
		Derbyshire Gritstone	0.57
<i>White-faced short-wools</i>		<i>Black-faced short-wools</i>	
Kerry Hill	0.42	Clun Forest	0.41
Wiltshire Horn**	0.14	Shropshire	0.25
Dorset Horn**	0.49	Oxford	0.26
Exmoor Horn**	0.65	Suffolk	0.42
Devon Closewool		Hampshire	0.54
		Dorset	0.49
Ryeland	0.23	Southdown (almost lost black face)	0.44
	(woolly faces)		
<i>Demi-lustre long-wools of medium length</i>		<i>Primitive sheep</i>	
Romney Marsh	0.53	Norfolk	1.00
Border Leicester	0.12	Soay	0.96
<i>Lustre long-wools</i>		Wild Mouflon	0.70
Wensleydale	0.59		
Teeswater	0.54		
Leicester	0.06		
Lincoln	—		
Dartmoor	0.13		
Devon	0.13		
South Devon	0.20		

* Only rams horned; ** both ewes and rams horned.

The figures indicate the gene frequency of high blood potassium (HK) (from Evans *et al.*).

The gene frequencies for high blood potassium shown in this table, and those for haemoglobin A shown in Fig. 1, provide supporting evidence for the affinities of different breeds. But too much reliance should not be placed on these alone because they are likely to change by selection in different environments. Haemoglobin A gene frequencies are likely to change less, however, and these are discussed in the text.

¹ J. A. Scott-Watson and May Elliot Hobbs, *Great Farmers*, London, 1937; R. Trow-Smith, *op. cit.*

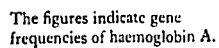


FIG. I
PROBABLE LINES OF EVOLUTION OF BRITISH BREEDS OF SHEEP

It is fairly clear that the black-faced horned mountain breeds of the northern hills (Table I) all arose from a common black-faced, horned, and hairy ancestor. The Scottish Blackface, Rough Fell, Swaledale, and Dalesbred breeds have high frequencies of haemoglobin A genes¹ (0·80, 0·64, 0·82, and 0·86 respectively), which supports a close relationship. The Lonk and Derbyshire Gritstone have relatively lower gene frequencies (0·30 and 0·23 respectively), suggesting recent introduction of white-faced, horned blood (see below) or even long-wool blood (see above). In the early nineteenth century the black-faced horned type was often grouped with similar native sheep of other counties, and named a "heath" sheep. Mr Trow-Smith separates this stock from the "heath" type and names it the Linton family.

The white-faced (or sometimes tan-faced) horned breeds (Table I) and the Wiltshire, Dorset, and Exmoor Horns were all in existence about 1800, although Youatt's illustrations show that they were not exactly like the modern breeds. Mr Trow-Smith puts the Shetland on its own, and groups the remainder of these together as "heath" sheep. The Shetland has only about thirteen vertebrae in its tail and forms a link between the short-tailed Soay and the rest of the white-faced horned group, modern breeds having twenty vertebrae in the tail. This group of breeds tends to have lower haemoglobin A gene frequencies than the black-faced horned group. The high value of the Herdwick (0·80) might be interpreted as indicating recent introduction of black-faced blood, but Evans considers that this might be due to selection in a similar environment, and points out that most northern hill breeds have high gene frequencies for haemoglobin A.²

The Radnor, Kerry Hill, and Clun Forest breeds are, on the other hand, of fairly recent origin. The Radnor and the Kerry are almost certainly offshoots from the Welsh Mountain, both probably having had additions of Shropshire blood. The Clun, along with the modern Shropshire, probably arose from the Old Shropshire, described by Youatt as being horned, with black or mottled legs and faces. The modern Shropshire probably contains Ryeland as well as Southdown blood. The low frequency of genes for haemoglobin A in the Shropshire supports Ryeland influence. The white- and woolly-faced Ryeland is a very old breed, often known in the past as the

¹ J. V. Evans, H. Harris, and F. L. Warren, *Proc. Roy. Soc. B.*, CXLVIII, 1958, pp. 249-62. These gene frequencies for haemoglobin A (Fig. I) and high blood potassium (Table I) provide supporting evidence for the affinities of different breeds. But too much reliance should not be placed on them alone as it has been shown that a big change of environment (British breeds moved to Australia) can cause a change in these gene frequencies.—J. V. Evans and M. H. Blunt, *Aust. J. Biol. Sci.*, XIV, 1961, pp. 100-8.

² J. V. Evans, *op. cit.*

Hereford. These breeds of the Welsh Border are very variable, and Mr Trow-Smith describes the variants in detail.

The hornless "down" breeds are nearly all of recent origin; the modern down sheep *par excellence*, the Southdown, is the oldest, and its blood has been used in the establishment of all the other down breeds. Although it now has a white (woolly) face, its face was dusky (and still is so in Australia and New Zealand) before it was improved by John Ellman of Glynde, Sussex (and others), at the end of the eighteenth century. The Suffolk arose from a cross between the Southdown and the Old Norfolk, another black-faced, horned sheep, the fleece of which was perhaps shorter and less hairy than those of the northern black-faced breeds, and Mr Trow-Smith considers that this was a distinct stock. The Old Hampshire breed was white-faced like the Wiltshire, and the first step towards the modern Hampshire was a cross of this with the old black-faced Berkshire breed. Then followed the introduction of Southdown blood, and this was actually taking place when Youatt wrote. This cross has, however, been attributed entirely to Humphrey of Newbury. Trends such as the improvement of the Southdown, and even the improvement of the Leicester (by Bakewell), have often been attributed to only one man, whereas, in fact, as Mr Trow-Smith has shown, others were involved. The Dorset Down seems to have arisen as an offshoot from the Hampshire, and the Hampshire has also contributed to the Oxford Down. This breed was started by crossing the long-woolled Cotswold with the Hampshire, after which Southdown blood was added. The Devon Closewool apparently arose from a cross between the Exmoor Horn and the Devon Longwool.

The breeds that remain to be considered are the long-wools. Perhaps the most primitive of these is the Romney, and Youatt said that there had been long-woolled sheep on Romney Marsh from time immemorial. Another ancient long-wool was the Cotswold, which has now almost died out. Then there was the Leicester, which Bakewell had improved about the middle of the eighteenth century, and which around 1800 was known as the New Leicester or Dishley, after Dishley Grange, Bakewell's home. The Lincoln Longwool was in existence in the eighteenth century, and there was already a long-wool in Yorkshire, the Teeswater, which had probably originated from the Lincoln. The Teeswater, with the addition of Leicester blood, has given rise to the modern Wensleydale, which explains the similarity of haemoglobin A gene frequencies between the Teeswater and Wensleydale (Table I). The modern Border Leicester has evolved from the Leicester (note the similar gene frequencies) with the introduction of some Cheviot blood, which is evident in its appearance. There was also a long-wool in Devon,

probably originating from Lincoln and Leicester stock, and certainly improved by the New Leicester, which has given rise to the modern Dartmoor, Devon Longwool, and South Devon breeds. The low gene frequencies for haemoglobin A in these breeds indicates a link with the Leicester. Youatt said that the New Leicester had been taken into many counties, and that it had been used extensively for crossing, so many modern breeds probably contain long-wool blood.

(To be continued)

Notes and Comments

THE BRITISH AGRICULTURAL HISTORY SOCIETY

The December conference of the Society was held jointly with the Association of Agriculture at the London School of Economics on Saturday, 7 December. A paper was given by the President, Mr R. V. Lennard, on 'Agrarian History: Some Vistas and Pitfalls (with special reference to medieval England)'. The discussion was led by Dr W. G. Hoskins and Dr Joan Thirsk.

It is regretted that in Volume XI, page 125, the date of the Annual General Meeting and Conference for 1964 at Reading was wrongly given. It will in fact be from lunch-time on Friday, 10 April, to 5 p.m. on Sunday, 12 April. This meeting will be held jointly with the Economic History Society.

THE AGRICULTURAL HISTORY REVIEW

This issue has been prepared under the joint supervision of Professor Finberg and Dr Joan Thirsk, the latter having been appointed Assistant Editor at the last meeting of the executive committee.

The editors invite suggestions from readers on the contents of the REVIEW. The opinion has been expressed that it should publish more articles on breeds of livestock, varieties of crops, agricultural implements, and the other material things of farming. Another criticism is that it does not contain enough of interest to the agricultural economist, in the form of articles analysing long-term developments in the farming industry. Naturally, if the articles are not written and submitted, we cannot print them, and editorial decisions are further limited by the need to provide our readers with a balanced diet. The comments of members, however, will be welcome.

May the editors also enter a mild complaint against authors who submit articles in an unfinished state, sometimes containing phrases which indicate quite clearly that they are merely excerpts from theses which the writers have not bothered to re-read, let alone revise; and against those who submit articles prematurely, only to ask for their return a few months later because they have found new material that will alter their conclusions?

Dispersed and Grouped Settlement in Medieval Cornwall

By M. W. BERESFORD

THE forces of cohesion that bound houses together into the compact villages of England seem—as far as they can be guessed—to have been both social and technological. Elsewhere in Europe the compact and huddled village, cut off from its fields and foes by gates and walls, emphasized different compulsions, those of fear and defence. In Provence, for example, it was only the passing of war and piracy that freed these prisoners from their hill-top fortresses and enabled them to exploit their fields from single farm-houses scattered for full convenience of working. In England the prisoners were freed from the chains of traditional nucleation by new agrarian technologies which encouraged individualism and enclosure; and, where they wished, the proprietors could set their new farms out in their newly-hedged fields.

The farmsteads that have always been out in their fields have been less the subject of study in English agrarian history, and dispersed settlement has only recently come into its own with the Devonshire studies of Dr Hoskins and Dr Finberg. In Devon, it may be broadly said, dispersed settlement has been charted as the creature of late colonization within ground that had been the outer margin of the territory of compact Anglo-Saxon villages of the traditional type. In this view, village comes first and scattered farmsteads second.

In Cornwall, on the other hand, where nucleated villages and scattered settlement also exist side by side, even on the same sheet of the 6-inch O.S. map, the accepted explanation has always been that the nucleated settlement is the later Anglo-Saxon arrival, imposed on the Celtic pattern of isolated churches and scattered farmsteads. In this view, farmsteads come first and villages second. It is not the intention of this article to challenge that view but rather to try and bring precision to the concept of scattered settlement in the light of documentary evidence from the end of the thirteenth century and the decades before the Black Death. It offers a hope of improving on descriptions of medieval settlement that are based on the Victorian Tithe Awards 450 years after the event. This short study is a by-product of an investigation of the petty boroughs of Cornwall, an even later imposition of nucleation than the Anglo-Saxon villages. Several of these boroughs were

planted in rural manors of the Duchy of Cornwall, and the documents from five parishes have been utilized to show where the constituent farmsteads were placed at the presumed high watermark of medieval colonization in Cornwall.

In these five parishes there were 203 separate messuages recorded in the manorial documents, and they lay in 57 separate 'places'. The number of messuages in each 'place' is indicated in the summary of Table VI, and the range of sizes will show why 'place' rather than 'farm', 'hamlet', or 'village' has been employed. The common belief that Cornish settlement was typically of isolated farmsteads is shown to be untrue in the areas studied, which come from three different parts of the county. Indeed, only one messuage in twenty stood absolutely alone. What does emerge as typical is the very small cluster: half the 57 places were made up of no more than two dwellings; or, putting it another way, half of the 203 messuages lay in little communities of up to four dwellings. The largest agglomeration achieved (outside the boroughs, whose messuages are not counted here) were the two groups of thirteen messuages and the one of twelve. These are the measures of dispersion in the manors for which the evidence will now be presented.

The commonest documents from which the size of fourteenth-century settlements may be gauged derive from the royal fiscal enquiries: on the one hand, the assessments of the lay subsidy up to 1334 (when it became conventionalized) and of the poll taxes of 1377, 1379, and 1381, especially the first of these; on the other hand, the number of freemen and villeins recorded in the *extents* of manors taken at the enquiry *post mortem*. In parts of England where there is no reason to suspect non-nucleated settlement these figures, imperfect as they are, can be taken to come as near as we are ever likely to get to the assessment of village size. The tax documents in particular are careful enough in their mention of hamlets and subordinate settlements, when such do occur, for us to accept the *capita* (for example) on which four pence were levied in 1377 as dwelling near each other in a nucleated village. The freemen and villeins and cottars of an *extent* may likewise be assumed to be living within a short distance of the manor house of the lord whose death has occasioned the *inquisitio*.

When, in 1334, the *parochia* of Lanteglos paid its quota of 30s. and its neighbour Advent its 20s., where were the farmsteads whose wealth was thus assessed? When 89 heads were each assessed in Advent in 1377 to pay their groat to the poll-tax collector, where did they dwell? Certainly not near the churches from which so many Cornish parishes were named: for Advent and Lanteglos churches have no village alongside them; and no earthworks have been noted that would suggest that, as in the case of the lonely churches of

the Midlands, there has been a village but a subsequent desertion. Since in 1377 the Black Death and its associated pandemic had just passed by, the number of heads in Advent before the plagues must have been greater, perhaps half as many again. Where did they dwell? where were their fields?

It soon became obvious to me that it was little use taking the first edition of the O.S. 6-inch map or the Tithe Awards as a confident basis of reconstruction. Economic change since the early fourteenth century has both added and subtracted houses. Cornwall has seen the arrival (and some retreat) of rural industry, while turnpike roads have encouraged clusters of dwellings that have the appearance and sometimes the names of old hamlets. In Creed parish, for example, the principal medieval cluster at the manor house of Tybeste has completely gone; while at Hewas Water the cluster can be shown to have come into existence *c.* 1750. Nor is it encouraging to find that the only full-scale modern study of Cornish settlement draws its map of dispersed settlement by arbitrarily selecting the more important group of farms on the Tithe Awards of *c.* 1840. This gives a total of nine clusters in Lanteglos, Michaelstow, and Advent, when there were in fact twenty-four.

There seem to be few large-scale estate plans of Cornish estates in the early modern period from which the deficiencies of the Tithe Awards may be remedied, although it is to be hoped that the Cornish estate plans of John Norden and his son, surveyors to the Duchy, will one day emerge. In the absence of maps from this earliest period of English map-making, some kind of map must be reconstructed from documentary sources. By good fortune, the documentation for the Duchy manors is unusually good for the half century before the Black Death, and the documents are cast in such a form that they do not simply list or number the tenantry but assign them to their geographical location. Within these areas the Duchy shared the territory with no other manor and there is thus no problem of allowing for the tenants of other lords; the small size of the holdings (and in land not of the best quality) minimizes the risk that there might be additional farmsteads occupied by under-tenants about whom the documents are silent. (A close examination of the ground, such as that now being carried out by archaeologists on Bodmin Moor, should also show whether there are additional tenements to be accounted for within the parishes studied here.) In the present state of knowledge, the data assembled in the tables below and mapped in the figures are the totality of settlement in the period before the Black Death.

The tables and maps which follow are a summary of information re-assembled from documents which set it out in a different form. The explanation of method and description of sources has been kept to a minimum.

Although not the earliest of the Duchy documents to be used, it is the

Assession Rolls which provide the easiest approach to early fourteenth-century settlement conditions. In these rolls each tenant's rent and services were set out, together with the size of his holding, and the location of the holding was indicated by bold lettering in the left-hand margin. The prime division of the rolls was by status of tenure, but within these divisions it was usual to place together holdings that were in the same place.

Thus, the first membrane of the entry for Trematon manor has in its left-hand margin the place-names *Netherpulle*, *Parva Esshe*, *Worfelton*, *Penvyntel*, *Oldetrematon*, and *Bradmore*. These names continue (with variant spellings) throughout subsequent rolls and then in the seventeenth- and eighteenth-century rentals. The final link in their chain of identity is afforded by the *Survey* and large-scale plan of 1819 made for the Duchy by S. Elliott. On this plan each field is numbered, and corresponding numbers appear against each farm's holding in the *Survey*. Thus the *Netherpulle* of the fourteenth century and subsequent rolls and rentals is North Pill (fields 35 to 40) of 1819; *Parva Esshe* has become Little Ash, and the plan shows it as fields 1 to 23 on the east bank of the Tamar, 98 acres in all, the old foothold of the Duchy ferry on the Devon bank. The 1819 plan can then be compared with the first edition of the 6-inch O.S. plan and thence with subsequent editions and the modern field boundaries. Some of the nameless farms on the O.S. map can be named from the Elliott survey, and holdings no longer distinguished can be delineated. Thus Elliott's plan shows that fields 481-492, south-east of Old Trematon village, made up the holding of Penfentle (35 acres in 1819), the *Penvyntel* of the first Assession Roll. Names sometimes change: a chain of references too long to print here links the holding known in 1819 as *Gripes* with the *Ivsdon* or *Insdon* of the fourteenth-century documents.

The earliest Assession Roll surviving is from 1356, and at first sight this might seem to come too late to serve our purpose of recovering the agrarian topography of the early fourteenth century, for the Black Death had intervened. Fortunately, from the period before the Black Death there survives the Caption of Seisin of 1337, another detailed survey of the Duchy tenants. Unlike the Assession Roll of 1356 it has no place-names as marginalia and the tenants are not grouped according to the location of their farms; but for each tenant the location of the messuage was still recorded, and it is simply a matter of re-sorting the entries. The areas of fields and the rents paid were also indicated, and doubtful and faded entries can be checked by these additional details. There are surprisingly few changes in either the family names or the rents paid between 1337 and 1356, and—more important—there are no place-names in 1337 which do not occur in 1356.

It is even possible to edge a little further back in time and nearer to the peak of medieval colonization by seeking the tenants of the 1337 Caption of Seisin in two other surveys, those of 1331 and 1300, which give surnames, acreages, and rents, but not the place-name of the holdings. Thus a holding of a messuage and seven acres of land held by John Nichol in 1356 for 2s. 8d. rent appears under the *Oldetrematon* rubric; in 1337 it was held for the same rent and with the same acreage by Walter Poly, the seven acres English measure being explicitly equated with a quarter-acre, *ferling*, Cornish measure; in 1331 Walter Poly appears as tenant of a *ferling* paying 2s. 8½d. rent. The survey of 1300 is more curt and more concerned with total numbers; like the manorial accounts of 1296-7 for these manors, it is principally useful in this study for solving some awkward place or surname puzzle when the later documents are torn or faded, and for confirming the values of the manorial assets to the earl.

A final check on the general compatibility of the data before and after the Black Death is afforded by counting the messuages in the three documents; the correspondence is close.

TABLE I
TOTAL MESSUAGES IN EACH MANOR, 1300, 1331, 1337, and 1356

	1300	1331	1337	1356
Helstone in Trigg		96	93	93½
Trematon		59	58	58
Tybeste	49	54	51¼	55
All manors		209	202¼	206½

The first manor to be examined, Helstone in Trigg, was the largest in area, lying between the western edge of Bodmin Moor and the sea, and centred on the Camel valley. If the landscape today seems cold and the trees stunted it is more from the exposure to winds off the sea than from moorish height: the highest point in the manor is 987 feet, and all the high ground of the adjacent Downs and Tors belonged not to Helstone but to other communities, those centred on Davidstow to the north and St Breward to the south.

The manor of Helstone took in the whole of three parishes, Lanteglos, Advent, and Michaelstow. In 1337 there were 93 messuages in these three parishes, and in addition there was the borough of Camelford planted in Lanteglos parish where the main road crossed the Camel. In 1300 there were more burgages in this new town (62) than messuages in the rest of Lanteglos parish.

In Table II the entries on the Assession Roll have been re-grouped and set out under the parishes. Fig. I shows the same data in map form. Since all the place-names of 1337 correspond to existing farms, the symbols for the free and villein messuages have been placed on the map at the site of these farms to which the six-figure National Grid reference is made. Many of these farms have the Gothic type of 'antiquities' on the O.S. map, but architectural

TABLE II
HELSTONE IN TRIGG: DISTRIBUTION OF SETTLEMENT WITHIN THE MANOR

<i>Modern farm name or place name</i>	<i>Grid Reference</i>	<i>Free messuages</i>	<i>Villein messuages</i>	<i>Total messuages</i>
LANTEGLOS PARISH				
Castle Goff	085825	0	1	1
Fentenwansen	076807	4	0	4
Helstone	088814	2	11	13
Hendre	091837	0	3	3
Kenstock	097811	0	2	2
Treforda	080814	1	1	2
Trefrew	109847	0	1	1
Tregoodwell	114836	3	5	8
Tremagenna	097822	0	4	4
Trevia	098836	1	8	9
Trewalder	074821	0	5	5
Trewen	088834	0	5	5
				<i>Total</i> 57
ADVENT PARISH				
Corndon	c. 110820?	0	1	1
Goosehill	148844	2	1	3
Pencarrow	106825	2	0	2
Tressiney	102814	3	0	3
Trethin	105819	1	1	2
				<i>Total</i> 11
MICHAELSTOW PARISH				
Fentonadle	084780	0	5	5
Michaelstow	080788	0	2	2
Tredarrup	078793	0	3	3
Tegawn	073788	0	4	4
Tregreenwell	075804	0	4	4
Treveighan	075795	0	5	5
Trevillic	069790	0	2	2
				<i>Total</i> 25
Manor total		19	74	93

Advent parish, with a good deal of poorer land on the Moor edge, was worse placed for arable farming than Michaelstow, all of which lay west of the Camel. Advent's eight free messuages compared with three villein may show the freedom of the frontiersmen colonists. And the holdings were even more scattered: 3, 3, 2, 2, and 1 messuages; and none by the church.

Lanteglos was the largest, most densely settled, and most complex parish of the three. Leaving aside the borough of Camelford, it had at Helstone an agglomeration of thirteen messuages (two villein and eleven free), different from anything else in the manor of which Helstone was the *caput*. At Trevia and Tregoodwell were globules of nine and eight messuages; the rest of the pattern was 5, 5, 4, 4, 3, 2, 2, 1, and 1.

Like Advent, Lanteglos church stood alone. No rectory house is men-

TABLE III

TYBESTE: DISTRIBUTION OF SETTLEMENT WITHIN THE MANOR

	<i>Free messuages</i>	<i>Villein messuages</i>	<i>Total messuages</i>
PROBUS PARISH			
Bartilver	0	2	2
Trevilvas	0	2	2
			<i>Total</i> 4
CREED PARISH			
Carwinnick	2	0	2
Garlennick	2	1	3
'Garhoda' (?=Carvossa)	0	2	2
'Keuseby' (?=Penchoise)	1	0	1
'Luscoys'	3	1	4
Nancor	3 $\frac{3}{4}$	1	4 $\frac{3}{4}$
Nantellan	3	0	3
Pendenbethwy	1	0	1
Pengelly	0	1	1
Pennans	3	2	5
Trecaine	4	0	4
Treswallen	1	1	2
Trevillick	3	0	3
Trewinnow Meor (sc. Great)	2	2	4
Trewinnow Vean (sc. Little)	2	0	2
Tybeste	4	0	4
'Tybeste Vyan'	0	2	2
			<i>Total</i> 47 $\frac{3}{4}$
Manor total	34 $\frac{3}{4}$	17	51 $\frac{3}{4}$

tioned in the manorial documents although there may have been one. The houses of Helstone were half a mile away as the crow flies, and such a direct journey was impeded by the Old Park, the lord's deer-park, for the lane winds round the eastern side of the pale. The earthworks of Castle Goff by this park and of Helsbury above the other park resemble those hill-forts which Mr G. R. J. Jones has indicated near some of his centres of lordship. The name Helstone itself, like the more famous Helston in Kerrier, is half Cornish and half Saxon: it is the *tun* of the *henlis*, the settlement around the chief court-house.

The manor of Tybeste lay mainly on the east bank of the Fal, and like Helstone had running through it an important main road, that from Truro eastwards. It was this road, crossing the river by the new *grand pont*, which gave rise to the new borough of Grampound, but the importance of the river-crossing even before the bridge is suggested by the small part of the manor (two pairs of messuages) which lay on the west bank. This segment is now in Probus parish, but most of the manor lies in Creed. (Manor and parish are not now coterminous, for a rectangular projection of about one square mile at the south-east corner contains no names corresponding to any Duchy messuages.) The manorial centre at Tybeste is now deserted; the church of Creed stands aloof from either manor or borough. (Fig. II.)

In 1337 Tybeste itself was a cluster of four free messuages with the villeins at *Tybeste Vyan*; Trewinnow also had a pairing of *Meor* and *Vean*. The dispersion in this manor is very marked: the largest cluster was less than half the size of Helstone, and ten places were made up of only one or two houses. Compared with these, the 28 burgages of Grampound in 1296 made it a giant like Camelford in Helstone. (Four places have been identified only tentatively, but it is unlikely that they refer to some place already on the list, and the degree of dispersion is unaffected by the uncertainty.)

Trematon, the final manor to be examined, also had a small enclave (of two messuages) in another parish, and the analogy with the transpontine portion of Tybeste is close, for Little Ash in Trematon (p. 16 above) was the landing place of the Tamar ferry in Devonshire; this ferry was a seignorial monopoly (worth £7 8s. in 1296-7: about as much as the mill and three times the burgage rents of Saltash). Otherwise all the manor lay in St Stephen's parish; and again the church had no messuages near it. In addition to the thirteen rural clusters there were two boroughs: by 1300 Saltash had 118 burgages on the cliff overlooking the Tamar ferry; and there was a petty borough at Trematon castle, probably wholly within the bailey like the small

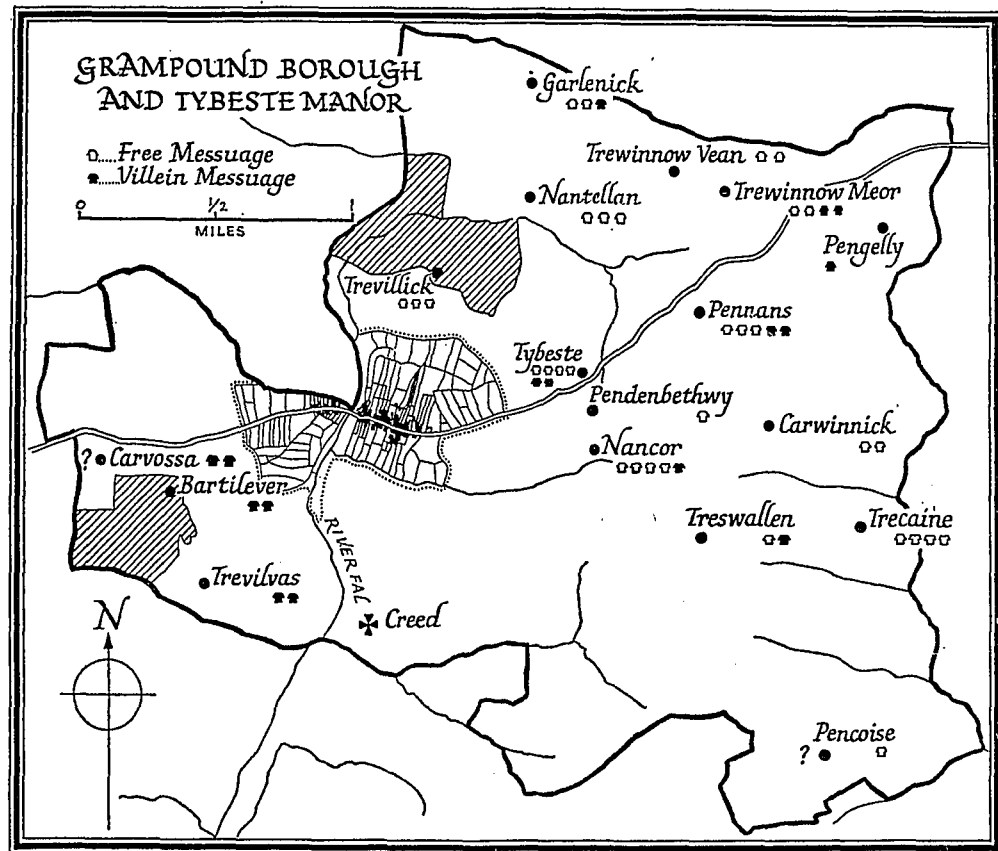


FIG. II
TYBESTE MANOR

Distribution of free and villein messuages in the early fourteenth century. The shading shows the area of two farms in the 1819 Duchy survey.

castle boroughs of south and mid-Wales, or, indeed, like the Norman borough at Launceston. But, judging from the rents paid, it had fewer than a score of burgages in 1300.

It was because of this *novus burgus* at the castle that the old manorial centre was called Old Trematon. There is no possibility of confusion; for two miles separate them. Old Trematon (with its large cluster of thirteen houses and its mixed Saxon and Cornish name) resembles Helstone; a second cluster, almost as large, was to be found at South Pill (*sc.* South Pool), but this was almost exclusively villein, whereas Trematon was predominantly free. (Fig. III.)

The tables and the maps distinguish the legal status of the land-holders.

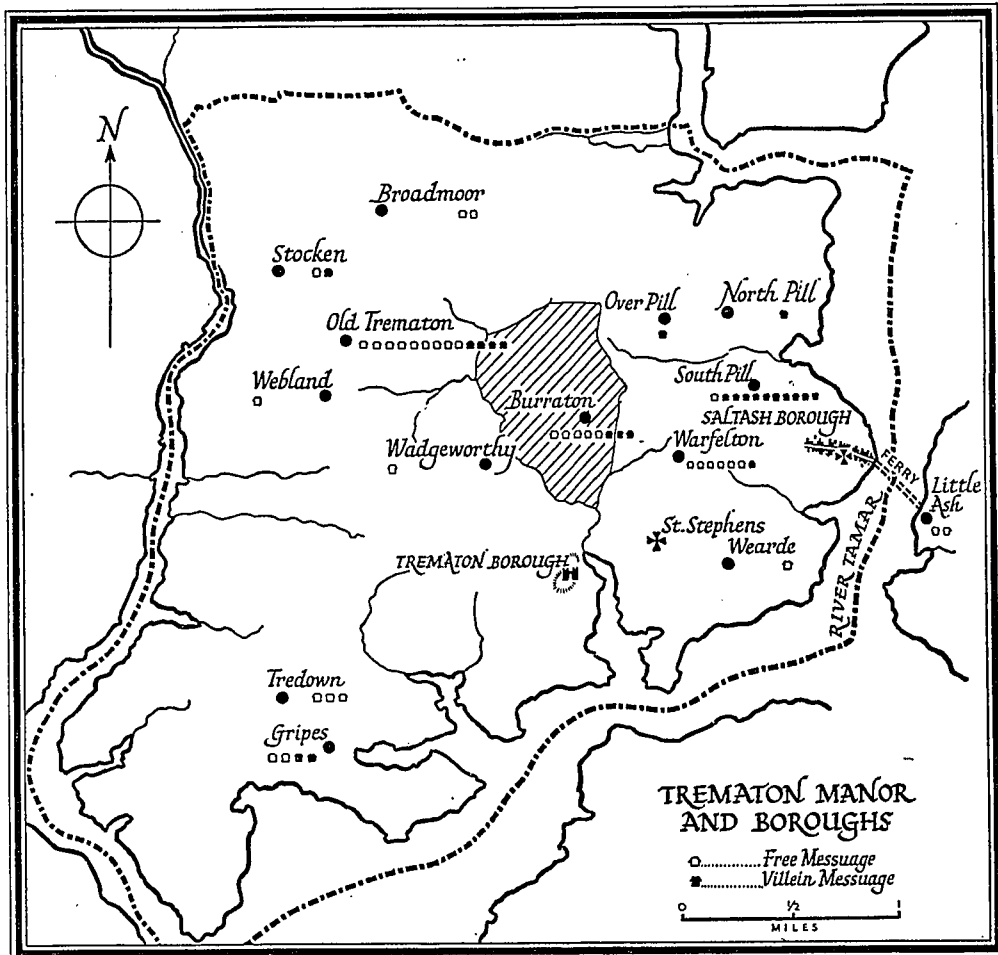


FIG. III

TREMATON MANOR

Distribution of settlement in the early fourteenth century.

The area comprised in the holdings at Burraton is shaded.

No entries corresponding to the modern place-names of Notter, Carkeel, Wivelscombe, Earth, Trevollard, Trehan, Shillingham, or Latchbrook appear in the medieval Assession Rolls; nor in the survey of the Duchy properties in 1819. Tithings of Carkeel and Trevollard are mentioned in the 1296-7 accounts. Earth appears as a personal name there and in the survey of 1331.

The main tenure affecting all Duchy manors in Cornwall was 'conventional'. Thus at Trematon in 1356 52 out of 58 tenants held their lands for a seven-year period, at the end of which a fresh entry or *assession* was made. During the seven years of the *conventio* all these tenants paid rent, were liable to attend the manor court at three-weekly intervals, and were eligible for the offices of reeve, beadle, and tithingman.

TABLE IV

TREMATON: DISTRIBUTION OF SETTLEMENT WITHIN THE MANOR

<i>Modern farm name or place-name</i>	ST STEPHEN'S PARISH		<i>Total messuages</i>
	<i>Free messuages</i>	<i>Villein messuages</i>	
Old Trematon	9	4	13
South Pill	1	11	12
North Pill	0	1	1
Over Pill	0	1	1
Burraton	5	3	8
Warfelton	6	1	7
Ince (=Gripes)	2	2	4
Tredown	3	0	3
Broadmoor	2	0	2
Wearde	1	0	1
Webland	1	0	1
Wadsworth	1	0	1
Little Ash (Devon: east of ferry)	2	0	2
Stocken	1	1	2
Manor total	34	24	58

The 34 free conventional tenants among these 52, although in a better position than the 18 villeins, were liable to forfeit their best beast as a heriot to their lord when they died, "but no goods else." The rent for a free tenement of average size was 4s. 6d. a year. The 18 villein conventionaries on this manor paid twice this sum for an average house and holding and had all the liabilities of a free tenant, with the additional forfeit of all goods at death. A third small group of villeins (at Trematon there were six) paid 5s. 6d. rent but were tied to the manor for life in addition to the ordinary villein liabilities and to tallage by the lord at his will; their tenements passed to their youngest son: these were the villeins "of blood," *de stirpe*.

At Tybeste the services were similarly defined and the villein rents were at the same level; the free rents were twice these of Trematon and equalled the villeins'; the villeins *de stirpe* here paid 8s., again higher than at Trematon. The entry fines at the renewal of the convention every seven years were equivalent to just over three years' rent in 1356 for the free conventionaries and about twice for the villeins.

In each class of tenancy the acreage assigned to a messuage was not uniform, but considering the differences in geographical position the averages shown for Tybeste and Trematon in Table V are very close.

TABLE V
AVERAGE ACREAGE PER HOLDING, 1356 (ENGLISH ACRES)

	<i>Free conventionaries</i>	<i>Villein conventionaries</i>	<i>Villeins de stirpe</i>
Trematon manor	19½	16	16
Tybeste manor	18	19	22

Finally, the size of settlement clusters has been set out for the three types: settlement clusters of wholly free messuages; settlement clusters of wholly villein messuages; and settlement clusters of mixed tenures.

TABLE VI
SIZE OF SETTLEMENTS, ACCORDING TO TENURES

A. WHOLLY FREE (17 places)										
	<i>No. of places with:</i>					<i>Over</i>				
	<i>1 mess.</i>	<i>2 mess.</i>	<i>3 mess.</i>	<i>4 mess.</i>	<i>5 mess.</i>	<i>5 mess.</i>				
Helstone	0	1	1	1	0	0				
Tybeste	2	2	2	2	0	0				
Trematon	3	2	1	0	0	0				
Total	5	5	4	3	0	0				
B. WHOLLY VILLEIN (22 places)										
	<i>No. of places with:</i>					<i>Over</i>				
	<i>1 mess.</i>	<i>2 mess.</i>	<i>3 mess.</i>	<i>4 mess.</i>	<i>5 mess.</i>	<i>5 mess.</i>				
Helstone	3	3	2	3	4	0				
Tybeste	1	4	0	0	0	0				
Trematon	2	0	0	0	0	0				
Total	6	7	2	3	4	0				
C. MIXED TENURES (18 places)										
	<i>No. of places with:</i>									<i>Over</i>
	<i>1 mess.</i>	<i>2 mess.</i>	<i>3 mess.</i>	<i>4 mess.</i>	<i>5 mess.</i>	<i>6 mess.</i>	<i>7 mess.</i>	<i>8 mess.</i>	<i>9 mess.</i>	<i>10 mess.</i>
Helstone	0	2	1	0	0	0	0	1	1	0
Tybeste	0	1	1	2	2	0	0	0	0	0
Trematon	0	1	0	1	0	0	1	1	0	0
Total	0	4	2	3	2	0	1	2	1	0
Total of all types	11	16	8	9	6	0	1	2	1	0

The total number of messuages concerned is 203, scattered in 57 different places. Just under half these places (27) were made up of a single messuage or a pair of messuages; one-fifth of the places consisted of a single messuage; only one-eighth of the places (7 out of 57) consisted of more than five messuages together, and three of these seven were the largest agglomerations, of 13, 13, and 12 messuages respectively. No difference between typical sizes of the wholly free and wholly villein clusters is apparent. As was stressed earlier, the absolutely isolated messuage turns out to be very unrepresentative: only 5 per cent of the total messuages were so placed and only one-fifth of all the places considered were so composed.

At this stage in the study of medieval agriculture and settlement in Cornwall the full implications of the evidence presented here can only be dimly discerned. The five parishes analysed here do not exhaust the evidence, for there were Duchy manors at Tintagel, Stoke Climsland, Helston in Kerrier, Moresk, Rillaton, Liskeard, Tywarnhaile, Restormel, Calstock, Tewington, Penlyne, and Trefrize: similar analyses could be made for these places, giving a further geographical sample.

It is clear that a good deal of work in the field and among local records in Cornwall will be necessary. The present author will not have the opportunity for these, but now that these deep-rooted little communities have been identified, those who are more fortunately placed than in Leeds can visit the farmsteads to see whether any of the medieval messuages survive, perhaps as no more than a barn or out-building to a more recent farmhouse. Fields near these farms need to be examined for remains of houses of the old communities surviving only as earthworks. The evidence of field-shapes and field-boundaries must also be brought in to reconstruct the acres, Cornish and English, assigned to these messuages. Only then shall we know how they stood in relation to the movement of colonization and conquest of the waste, and begin to see how the little agrarian units produced the pennies for the *finēs, perquisita, et relevia* of the manorial accounts.

These multifarious *tre-* settlements must also be studied alongside the settlement pattern of medieval Wales and the border brought realistically on to the map by the recent studies of Mr G. R. J. Jones. In their names these multifarious *trevs* seem to reach back safely into pre-Saxon Cornwall, although there is yet no sure way of linking (for example) the 96 different messuages in Helstone of 1331 with the 53 holdings enumerated in the Domesday account of that manor.

The old assumption that scattered settlement was divorced from open-field arable has been shaken by Mr Jones's evidence, where co-aration has been shown to be quite compatible with a landscape that today seems all

dispersed farmsteads. Professor Balchin, in one of the few modern sketches of Cornish settlement, reminds us that Domesday Book records in Cornwall "just under a hundred manors with two ploughlands or less," and he continues: "It is clear that these entries can only refer to small hamlets or *trevs* that had no relation to an open-field system, quite apart from the fact that the names in themselves are quite un-English." Mr Jones has shown that a form of open fields could exist in quite un-English surroundings, and further work in Cornwall, marrying field-work and documents, may make it necessary to modify Professor Balchin's assertion. The early publication of Mr Gover's study of Cornish place-names would be a further assistance.

NOTE. This article embodies a paper read to the annual conference of the British Agricultural History Society in April 1961. It has not been revised to take account of subsequent publications, the most important being: W. G. Hoskins, *Provincial England* (1963), pp. 15-52; and G. R. J. Jones, 'The Tribal System in Wales: a reassessment in the light of settlement studies', *Welsh Hist. Rev.*, 1, 1961, pp. 111-32. O. G. S. Crawford's copies of Charles Henderson's tracings of Cornish estate plans are now deposited in the British Museum (Maps 199 d.60).

NOTE ON SOURCES. Data in the text, figures, and tables derive from the following P.R.O. documents:

1296-7	E.119	Ministers' accounts (ed. L. M. Midgley, Camden Soc. 3rd ser., LXVIII, 1945).
1300	E.152/8	Extent.
	E.142/6-7	Survey.
	C.133/95	Extent (calendared in <i>Cal. I.P.M.</i> , III, pp. 456 sqq.).
1300-1	E.372/146 m.30	Accounts.
before 1307	SC.6/816/9	Accounts.
1327	E.179/87/7	Lay Subsidy.
1331	E.142/41	Survey.
1337	E.120/1	Caption of seisin.
1338-9	SC.6/816/11	Accounts.
1347-8	SC.6/812/3	Accounts.
1352-3	SC.6/817/3	Accounts.
1356	E.306/2/1	Assession roll.
1371	E.306/2/2	Assession roll.
1377	E.179/87/29-35	Poll-tax receipts.

The Duchy of Cornwall Office, Buckingham Gate, London, has assession rolls of 1333, 1364, and 1371, as well as rentals and surveys continuing intermittently into modern times. A series of plans with keys was made by S. Elliott in 1819. Other plans of Duchy properties are at the County Record Office, Truro. Acknowledgement is made of permission from these Offices to consult records.

OTHER NOTES. The areas given in the documents are usually in acres Cornish and acres English. Cornish ferlings are equated with holdings of from 9 to 11 acres English; and half-acres with areas from 18 to 20 acres English.

Harvest Fluctuations and English Economic History, 1480-1619

By W. G. HOSKINS

IT IS incredible how little attention has been devoted by English economic historians to the importance of the annual fluctuations in harvest yields, and their bearing upon demography, upon mortality and disease, upon agrarian legislation and social unrest, and indeed perhaps upon the fundamental process of economic growth, particularly during the critical generations of the sixteenth and seventeenth centuries.¹ Such historians of the Tudor period as Bindoff and Mackie, for example, seem quite unaware of the problem of food-supply in an economy which could never be certain from year to year of being able to feed itself adequately.

Bindoff's *Tudor England* nowhere makes reference to the subject that was of vital importance to the great majority of the people of Britain; while Mackie speaks of Edward VI's reign as marked by an "inexplicable" economic stringency. "The harvests, in the main, were good. How could there be dearth in the midst of plenty?"² In actual fact, of the six harvests of Edward's reign, the first two were good to abundant (1547, 1548), but the next three ranged from deficient to disastrous (1549, 1550, 1551), and the final harvest (1552) was average to good. Thus half the harvests of this reign left the mass of people short of basic food and drink. Moreover, they were three bad years in a row, something infinitely worse than alternate good and bad years. Then, too, inflation really got under way in the late 1540's. The twelve years from 1545 to 1557 saw a rocketing of the price-index of consumables from 191 to 409.³ Much of this catastrophic rise in the price of foodstuffs was due directly to the successive debasements of the coinage from 1542 to 1547, in 1549, and again in 1551; but a considerable part of it reflects the generally deficient harvests of these critical years.⁴ In the light of these basic facts, much of the history and legislation of this troubled reign, with its repeated crises, is no longer hard to explain.

The annual harvest was the perennial subject of conversation in town and

¹ The only sustained discussion of the harvest as a primary factor in the national economy is that by T. S. Ashton, *Economic Fluctuations 1700-1800*, ch. 2: The Influence of the Harvests.

² J. D. Mackie, *The Earlier Tudors*, p. 503.

³ I am using the Phelps-Brown index, as tabulated in *Essays in Economic History*, II, p. 194.

⁴ See the table of Annual Harvests classified by Quality, at the end of this paper (Appendix II).

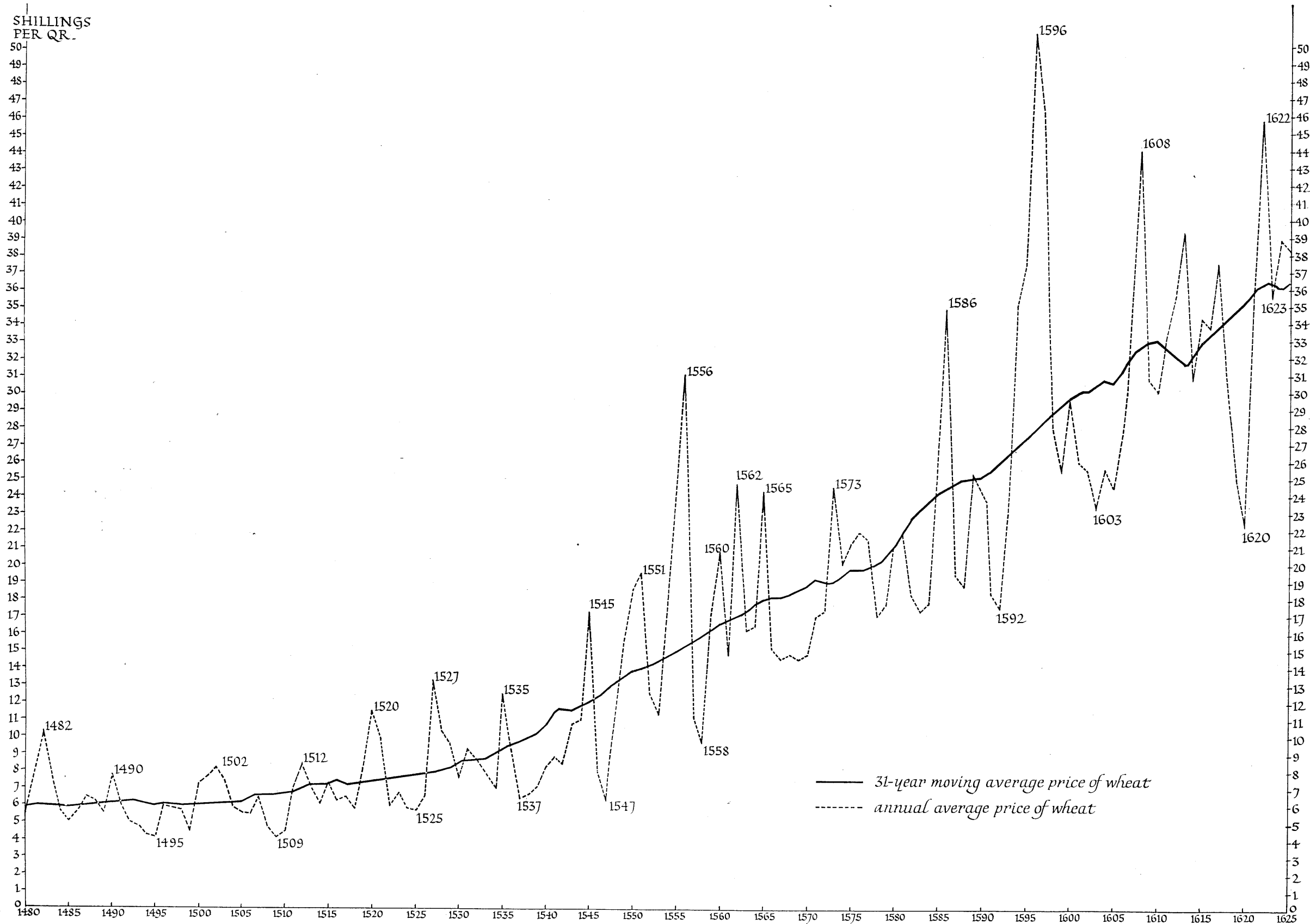


FIG. I
ENGLISH HARVEST FLUCTUATIONS 1480-1625

country, from the landowner down to the cottager.¹ In a country in which between one-half and two-thirds of the population were wage-earners, and a considerable proportion of the remainder subsistence farmers; in which about one-third of the population lived below the poverty-line and another third lived on or barely above it;² in which the working-class spent fully 80 to 90 per cent of their incomes upon food and drink; in such a country the harvest was the fundamental fact of economic life, even for the urban textile workers of towns like Norwich and Colchester. The disastrous harvest of 1551, following as it did upon two other bad harvests, was of infinitely greater moment for the great mass of English people than the commercial crisis of 1551-2, on which so much has been written. English economic historians have greatly over-rated the importance of the cloth industry in medieval and Tudor England, and even more so the cloth export trade and its vicissitudes, with a consequent serious distortion of economic history and a total neglect of some fundamental problems.³

The sources for this paper are given in an appendix. So, too, is a table of annual wheat harvests, classified by quality ranging from abundant on the one hand to dearth on the other. If we use the data for the whole of the period, we can begin by establishing the 'normal' variation of harvests in each decade, and then proceed to examine each decade between 1480 and 1619 (140 harvests in all) with a view to ascertaining whether there are any noticeable trends in the quality of harvests.

Out of the total of 140 harvests, 35 may be regarded as failures to some degree or other, a failure ranging all the way from deficiency to famine.⁴ So in a 'normal' decade one harvest in every four could be reckoned as a failure

¹ Professor W. O. Ault, who was born in Kansas, tells me that even in Kansas City, a town of a quarter of a million people in the 1920's, the quality of the harvest was the staple subject of conversation in his youth, even among people apparently far removed from the land (e.g. lawyers). How much more so, then, in sixteenth-century England, where people could still die of starvation or of diseases accentuated by it.

² W. G. Hoskins, *Provincial England*, p. 84. "Fully two-thirds of the urban population in the 1520's lived below or very near the poverty line." Life was somewhat easier in the rural areas for a variety of reasons, but even here some 40 to 50 per cent of the population were wage-earners, and many others were small peasant farmers entirely at the mercy of Nature.

³ Thus Bindoff, in an unguarded moment perhaps, says of the critical years 1547-58 that "the manufacture of cloth [had] expanded until it overshadowed all else in the national economy. . ." (*op. cit.*, p. 146). This is quite untenable: the annual harvest was a hundred times more important from both the consumers' and the producers' standpoint.

⁴ In the classified table, I define 'deficient' as existing where the average price of wheat in a particular year is between 10 and 25 per cent above the 31-year moving average for that year, which I call the *norm* for that year. 'Bad' is defined as an annual average which is 25 to 50 per cent above the norm; and 'dearth' where the annual average is more than 50 per cent above the norm.

in some degree. Of these, the really 'bad harvests' numbered 24, or slightly more than one in six. This, incidentally, agrees closely with the popular belief in the sixteenth century, as expressed by the Doctor in John Hales's *The Commonweal of this Realm of England*, that a bad harvest came once every seven years.¹

At the other end of the scale, 58 harvests out of the 140 in this period could be classed as good to abundant.² This amounts almost exactly to two harvests in every five ($41\frac{1}{2}$ per cent). 'Average' harvests—where the average price for the year was within ± 10 per cent of the norm—amounted to one harvest in every three.

The view has been expressed³ that there may have been a fundamental climatic change in the mid-sixteenth century over most of north-west Europe which adversely affected the quality of harvests during the second half of the century. A preliminary calculation suggests that this hypothesis is untenable for England. Thus if we take 1550 as the dividing-line, there were 29 good harvests out of 70 between 1480 and 1549; and there were exactly the same number in the seventy years from 1550 to 1619.

Nor does the pattern of bad harvests ('deficient to dearth') suggest any real difference between the two halves of this long period. In the years 1480–1549 there were 18 failures out of 70 harvests; in the period 1550–1619 there were 17. Utterström refers to the spectacular crop-failures of the 1590's in England, which were paralleled in other parts of Europe; but a close analysis of every harvest reveals that the 1520's, in England at least, were almost if not quite as bad. The difference lies in the greater efficiency of government in the later sixteenth century, and perhaps the more effective publicity given to agrarian troubles at the same time; probably also the much greater population of the 1590's caused more governmental unease than the comparative under-population of the 1520's.

The harvest pattern of an average decade was therefore as follows:

Good to abundant	$41\frac{1}{2}$ per cent (2 in every 5)
Average	$33\frac{1}{2}$ per cent (1 in every 3)
Deficient to dearth	25 per cent (1 in every 4)

¹ *Op. cit.* (ed. Elizabeth Lamond), p. 59. The doctor says: "if an unfruitful year should happen amongst us, as commonly doth once in seven year, we should then not only have dearth [i.e. dearthness] but also such scarceness of corn, that we should be driven to seek it from outwards parts, and pay dear for it."

² I classify a harvest as 'good' where the average price for that year was 10 to 30 per cent below the norm (as defined above) and 'abundant' when the average for the year was more than 30 per cent below the norm.

³ Utterström, 'Climatic Fluctuations and Population Problems', in *Scandinavian Economic History Review*, III, 1955, pp. 3–47.

Let us now see what pattern, if any, can be established from a chronological examination of the quality of harvests throughout the five generations from 1480 to 1619.¹ Of the last twenty harvests of the fifteenth century—1480 to 1499—six were good to abundant, ten were average, and four were bad, ranging from deficiency to absolute dearth.

There was, however, a very marked contrast between the two decades. The 1480's were, on the whole, hard going. There were three bad years in a row (1481-2-3), including the dearth of 1482. Thorold Rogers says that the scarcity was especially marked in the eastern counties, and this is in fact so, for the average wheat-prices at Exeter, which we may take as representative of western England, were appreciably lower than the national average in both 1481 and 1482.² On the other hand, the harvest picture of the 1490's was a bountiful one, not to be repeated for plenty until the 1530's. After a bad start in 1490 itself, with a considerable deficiency all over England and the highest average price at Exeter since the famine of 1438-9, the decade opened out into a succession of four fine harvests in a row—good harvests in 1492 and 1493, and abundant in 1494 and 1495, ending in 1499 with another good harvest. Five out of ten harvests were plentiful; only one was deficient. It was indeed a golden decade. In general, the harvests of the west broadly followed the pattern of the eastern and midland counties, the most noticeable differences being that 1491 and 1492 were distinctly better in the west than in the rest of the country, while the harvest of 1497 was markedly deficient in the west as against an average harvest elsewhere. Again, the good harvest of 1499 was only an average one in the west.

What is perhaps more important is the marked tendency for good or bad harvests to run in series, a tendency which one detects throughout the entire period and one which calls for discussion at this point. The three bad years of 1481, 1482, 1483, were paralleled by the four good years of 1492, 1493, 1494, and 1495. Then we get the four successive bad years of 1500, 1501, 1502, and 1503. In the following decade there is no such succession of good or bad; but between 1519 and 1529 we get a remarkable pattern of three bad harvests in a row (1519, 1520, and 1521), then five good harvests in a row (1522 to 1526 inclusive), followed immediately by three more bad harvests (1527, 1528, 1529).

¹ Neither of these dates has any special significance. They were chosen because they give an equal period of seventy years on either side of 1550, to test the Utterström thesis, and also so as to give a long 'run-in' to the sixteenth century and an equal 'run-off' at the other end.

² The Exeter series of wheat-prices, almost unbroken from 1316 to 1820, is probably unparalleled in any other city in Europe. They were studied by W. H. (later Lord) Beveridge in 'A Statistical Crime of the Seventeenth Century', *Journal of Economic and Business History*, 1, pp. 503-33. Wherever I cite the Exeter prices, they are taken from Beveridge's tables in that article.

Whatever we may make of these facts from a climatic standpoint (and one is deeply sceptical of all theories of a climatic rhythm), the impact especially of successive bad harvests must have been appalling for the majority of the population, living as they did with little or no reserves of food or money. Death must have been as common a sight as on a battlefield. It helps to explain the (to us) horrible popular taste for cruelty and the sadistic delight in barbarous executions in the sixteenth century, a taste which the odious Henry VIII shared to the full with his subjects.

Henry, indeed, was fortunate in his harvests, for the 1530's-40's saw another remarkable abundance. From 1537 to 1542 there were six good to abundant harvests in a row; and his reign ended with the beginning of another good run (1546, 1547, 1548).

Then followed three successive bad harvests—1549, 1550, and 1551. After that a mixed pattern, often with two good or two very bad harvests in succession, until another remarkable sequence of six good harvests from 1566 to 1571 inclusive. In the 1580's there were three good harvests in a row (1582-4). The 1590's present an interesting picture. Here harvests are the key to much of the important legislation and the social unrest of these years. Three good harvests in a row (1591, 1592, 1593) were followed by a series of four very bad years, amounting at times to famine, from 1594 to 1597 inclusive, perhaps the worst sequence of the entire century.

The seventeenth century opened (1601 to 1606) with six good harvests successively, that of 1603 being especially good, though none was abundant; and our period ends again with three good harvests—1618, 1619, and 1620, which was an abundant year.

This examination of harvest sequences has established no discoverable rhythm. Short-term climatic fluctuations may well have had much to do with it, but even more important in all probability was the basic fact of yield ratios.¹ Slicher van Bath observes that "meagre yield ratios of 1 : 3.0 or 4.0 . . . were the rule in the middle ages and even in many countries till the eighteenth century." This meant that a large part of the arable had to be kept for growing the next year's seed. It also meant that a bad harvest, by reducing the yield ratio to a dangerously low level, almost automatically ensured another bad harvest from a sheer deficiency of seed. In very bad

¹ For a comprehensive collection of statistics on this subject, see B. H. Slicher van Bath's recent volume *Yield Ratios, 810-1820* (Wageningen, 1963). Unfortunately, though the medieval evidence from England is reasonably full, that for the sixteenth and seventeenth centuries is almost non-existent. There is a very short series for a west Devon manor in the early sixteenth century by H. P. R. Finberg, and two short series for Gloucestershire and Berkshire manors in the early seventeenth century by J. P. Cooper, G. E. Fussell, and B. H. Slicher van Bath. Nevertheless, even these meagre figures are instructive.

years the rural population must have staved off the worst of their hunger by consuming part of next year's seed-corn, a terrible dilemma which was apparent in China in the 1950's. So one bad harvest tended to generate others, possibly cumulatively, and the sequence could only be broken by a year in which the weather came to the rescue and doubled the yield, so restoring the 'normal' balance between bread-corn and seed-corn.

Conversely, of course, one good harvest tended automatically to produce another through the abundance of seed-corn, and so on for three or four (or even more) years, until prolonged rain or some other climatic catastrophe broke the lucky chain and produced an average or a bad harvest as a consequence. So harvest fluctuations do not necessarily reflect climatic variations (though they often do, to judge by literary references) but more probably the fundamental fact of yield ratios in an agrarian economy that worked normally on a very fine margin between sufficiency and shortage.

The sixteenth century began badly. The harvest of 1500 was generally very deficient, while in the west it was very bad, with an average price at Exeter well over 50 per cent above the norm for that year. Both 1501 and 1502 were bad generally. 1503 was seriously deficient, and again worse in the west. In 1506 came the first really good harvest for seven years; 1507 was an average yield. Then came three marvellous years in succession. 1508 was very good; and the first harvest of Henry VIII's reign was abundant with an average price nearly 38 per cent below the norm. Rogers says that the price of wheat in 1509-10 was the lowest for more than two hundred years, the harvest of 1510 being nearly as good as that of the year before.

The decade from 1510 to 1519 was slightly better than the average, with four good harvests (1510, 1514, 1516, and 1518) and only two deficient to bad harvests. The harvest of 1512, bad generally, was an average one in the west; that of 1519 was generally deficient but not bitterly so.

The 1520's have already been referred to. They present the extraordinary pattern of five good harvests in a row (1522-26) which must have helped Henry VIII and Wolsey materially in their acrimonious struggles to raise war-finance by unparalleled heavy taxation and 'loans'. The decade had begun with a dearth, with an average price for the country as a whole fully 54 per cent above the norm. At Exeter, the average price for the harvest-year 1520-1 was the highest recorded since the terrible famine of 1315-17. At Coventry that autumn (1520) the mayor counted the people ward by ward, men, women, and children, and caused a complete return to be made of all stocks of malt, rye, wheat, barley, oats, and peas.¹ At Leicester, in mid-

¹ *Tudor Economic Documents* (hereafter referred to as *T.E.D.*), ed. R. H. Tawney and E. Power, I, pp. 141-3.

November, the governing body ordered that "all that bake rye bred for pore people" were to make it good and wholesome, and "that it stand the more parte be rye and the bran of wheat according to the statute." At the same time, ale for the poor was to be sold at a half-penny a gallon, whereas the best ale was 2½d. a gallon.¹ The harvest of 1521 was also bad (average price 30 per cent above the norm) and noticeably worse in the west. Then came the five good years, followed by the great dearth of 1527, with an average price for the harvest year fully two-thirds above the norm.²

In the west the harvest was not so disastrous as elsewhere (see Table, Appendix II) but at Norwich the mayor viewed a situation bordering on revolution. The Mayor's Register for this year records that "there was so great scarsenes of corne that abowte Christmas the comons of the cyttye were ready to ryse upon the ryche men." There was indeed a rising in the county shortly afterwards, and in the city itself where the leader (one Young) tried to persuade the hungry crowd to take the corn by force from the sellers. They sensibly desisted on the ground that if those who brought corn openly into the city to sell should be injured then no further supplies would arrive and they would indeed starve.³

The harvest of 1528 was also a bad one, not so great a failure as that of 1527 but coming after that disaster it aggravated the misery. Excessive rain seems to have been the cause of these two bad years. Blomefield records that the housewives of Norwich rose in anger and despair; so, too, did the men of Yarmouth—"not with intent to injure anyone at first, but only to hinder [the] exportation of corn. But it went so far that divers young men that joined them were executed for it." Among the many abominable crimes of the brutish Henry, men were hanged for refusing to starve to death.⁴

The slender food reserve on which Tudor England ultimately depended is brought home to us in the petition of the men of the Huntingdonshire village of Yaxley in the court of Star Chamber. They recalled the Great Hunger of 1527 when a merchant of Lynn appeared with his boat at the end of November in the following year in order to load it with peas for export. After an altercation, one of the Yaxley men exclaimed: "You men of Lynn did carry

¹ *Leicester Borough Records*, ed. M. Bateson, II, p. 16.

² Only two other years (1556 and 1596) exceeded 1527 for scarcity throughout the entire sixteenth century.

³ Blomefield, *History of Norwich*, I, p. 178.

⁴ See *T.E.D.*, I, pp. 143-4, for information relating to the dearth in Staffordshire in 1527. Here the commissioners had been enjoined to search all barns, garners, stacks, ricks, and mows "and other suspicious places in the same to have hid corn." They reported no hidden corn, and recommended that other counties should not be restrained from selling to them "for their necessary sustenance and living."

our peas into Scotland last year, and pined us for hunger here, for lack of sustenance. And if we knew you would carry these peas into Scotland, as you did our peas last year, we would hold them until we knew further of the king's pleasure therein. For as we do think, that you do against the king's commandment in that behalf."¹

The year 1529, too, was a poor one, the third bad harvest in succession; but the 1530's opened well with a very mild spring. So forward was the season that the Leicester borough records remark upon the gift of early flowers for the mayor: on 27 March he was presented with hawthorn in bud, bean-flowers, and a columbine in flower;² and the summer fulfilled this promise. It was a good harvest, though Rogers records that it was better in the east than in the west and south of England.

Taken as a whole, the 1530's were a bountiful decade, the best since the 1490's. There was only one bad harvest out of ten, four were of average quality,³ and no fewer than five were good. Of these, three successive harvests (1537, 1538, 1539) could be called abundant, with long, glorious summers.

The 1540's began in like fashion, the spring of 1540 being very early. Cherries were ripe by the end of May, grapes by July, the harvest was half over by 25 June, and there was a general abundance of corn and fruit. The next two seasons were equally blessed; then came two average years (1543, 1544), and then the great dearth which men had learnt to expect about every seventh year. In this instance, ten years had passed since a similar failure, but whereas the failure of 1535 had been less severe in the west, that of 1545 was quite disastrous. The average price for the harvest-year 1545-6 at Exeter was the highest that had ever been known.⁴

The hard year of 1545-6, with its hunger and pestilence, was succeeded by three abundant harvests in a row (1546, 1547, 1548), good years which are referred to several times in *The Commonweal of this Realm of England*, wherein it is stated that the yield of corn was twice the average.⁵ Then came the seriously deficient harvest of 1549 which may be said to usher in the

¹ *T.E.D.*, I, pp. 144-6. Petition dated 1529: Inhabitants of Yaxley v. Thomas Aylward and Christopher Branston.

² *Leic. Bor. Rec.*, III, pp. 28-9.

³ The harvest of 1532 was an average one generally in price, but evidently bad in the west as the Exeter average was nearly 20 per cent above the norm. On the other hand, the generally bad harvest of 1535 was less disastrous in the west (national average 12.67 sh. per. qr., Exeter 10.87 sh.).

⁴ The national average was 17.31 sh. per qr., against the norm of 12.13 sh., but the Exeter figure was 19.10 sh. for the year. Conversely, the generally abundant harvest of 1546 was even more plentiful in the west and the average price fell to a level not known for twenty-one years.

⁵ *op. cit.*, esp. p. 52.

dreadful 'fifties, culminating in the famine of 1555-6. The harvest of 1550 was very bad, that of '51 even worse. These three bad harvests in a row were of infinitely greater moment to the mass of English people than the commercial crisis of 1551-2.

The years 1552-4 offered a respite with two harvests of average yield. That of 1553, the first of Mary's reign, was good, with an average price throughout the year about 23 per cent below the norm. But the harvests of 1555 and 1556 were disastrous by reason of continual rain, that of '56 being by far the worst within living memory: "all the corn was choked and blasted, the Harvest excessive wet and rainy." It was a year of famine over most of northern and western Europe. In Holland the poor ate ox- and pig-dung. In England, certain towns, such as Norwich and Great Yarmouth, established a permanent grain stock, with officials to administer the funds, in place of the *ad hoc* actions of previous years of hunger.

There was a great mortality all over England in 1556-8, thought to have been due to influenza.¹ In Leicestershire the death-rate was about double the normal in 1556, quadruple by 1557, and seven times the normal in 1558. For the three years 1556-8 it was just about four times the normal number.² In the diocese of Worcester the average number of wills proved was about 135 a year from 1551 to 1555; for 1556-8 the average was about 530 a year, again about four times the normal. At Colyton, in east Devon, an examination of the parish registers shows that the burials in 1557-8 were $3\frac{1}{2}$ times the normal.³ There is no means of knowing the exact cause of death in this prolonged visitation, but it was certainly not plague, and the two appalling harvests of 1555-6, accompanied as they were by prolonged rains, must have been mainly responsible. There is room for some fundamental research on mortality figures in sixteenth-century England especially in conjunction with the now-known facts about harvests; though much remains to be discovered about the incidence of foot-rot and 'murrains' amongst meat-animals before we can generalize safely about the precise relationship between failures of food-supplies, epidemics, and mortality-rates. The harvest of 1558 was abundant: it is odd (but entirely accidental) how each of the Tudors came to the throne in a good harvest year—1485, 1509, 1547, 1553, and 1558. It may not have mattered greatly whether or not the populace had

¹ Creighton, *History of Epidemics*, 1, pp. 401-5.

² These figures are based upon a count of wills and administrations proved in the arch-deaconry of Leicester, and therefore cover only the will-making population. It is probably a very representative sample.

³ For the Worcester data, see the *Calendar of Wills and Administrations in the consistory court of the Bishop of Worcester, 1451-1600*. For Colyton, see the *Register of baptisms, marriages and burials of . . . Colyton, 1538-1837*, published by the Devon and Cornwall Record Society.

full bellies at these change-overs, but it doubtless helped the new régime to settle in without any fear of famine at the very outset.

The bad harvest record of the 1550's seems at first sight to lend credence to the theory of a fundamental climatic change about the middle of the century; and the record of the 1560's, though somewhat better, seems to add a little further credibility. There were three bad harvests in the 1560's—1560, 1562, 1565—and the harvests of 1563 and 1564, though of average quality generally, were certainly bad in the west, judging by the Exeter figures. Again, presumably, excessive rain at the wrong season was the chief cause. But the decade saw no fewer than five good harvests (1561, 1566, 1567, 1568, 1569), and indeed there were six good harvests in a row between 1566 and 1571 inclusive. So though the 1550's were generally a bad time, the 1560's were noticeably better than the average when all the factors are taken into account; and the next two decades were on the whole better still.

The 1570's had rather fewer deficient harvests than the average, and rather more good harvests. Only 1573 was a really bad harvest,¹ and 1576 was deficient; but the generally below-average harvest of 1575 was very bad in the west where the average price for the year was nearly 50 per cent above the norm.

Both 1570 and 1571 were tolerably good harvests; so too were 1578 and 1579.² The 1580's were even better, with only a single bad harvest throughout the decade; though that was the general dearth of 1586. As the harvest in the west was even worse than the national average,³ the failure was probably due to excessive rainfall. But there were no fewer than five good harvests during the decade, including three in a row (1582, 1583, 1584); and both 1587 and the Armada year saw very good harvests.

The 1590's saw no fewer than four good harvests, including three in succession—1591, 1592, 1593—that of 1592 being particularly abundant in the eastern counties. Even so acute an observer as Bacon expressed the view in this year that England was now in a position to feed other nations instead

¹ It was the bad harvest of 1573 that induced the enquiry by the Privy Council concerning the grain stocks of the city of London in the following March. The poor of London were obviously the most dangerous flash-point in the kingdom at times of scarcity. For the Council's questions and the Lord Mayor's answers, see *T.E.D.*, I, pp. 156–61.

² That the grain supplies of the western counties were not negligible in the national economy is shown by the letter of the Privy Council (11 October 1579) releasing 300 qrs. of wheat for export to Spain and Portugal because of "the great plenty of grain this year within [the] county of Devon, not only sufficient for the inhabitants but . . . able to spare a convenient quantity for others. . ." *T.E.D.*, I, p. 161.

³ The west had a bad harvest in 1585, with an average price at Exeter about one-third above the norm. For 1586, the norm was 24.50 sh. per qr.; the actual average was 34.79 sh. (a difference of 42 per cent) and the Exeter average was as high as 40.57 sh. (a difference of some 60 per cent).

of being fed by them. And in 1593, the government, encouraged by yet another bountiful harvest, repealed the anti-enclosure act of 1563 which had in turn confirmed the legislation of Henry VII and Henry VIII on the subject. The export of wheat was also permitted, so long as the home price was not above 20s. a quarter.

But then followed no fewer than four terrible years in a row. The rains fell incessantly all over Europe from Ireland to Silesia. The 1594 harvest was bad (average price nearly 30 per cent above the norm); 1595 was even worse (average nearly 36 per cent above the norm); and 1596 was a disaster, with an average price of 83 per cent above the norm. Even so, it was far worse in the west, where the Exeter average of 62.94s. per qr was the highest ever recorded, and stood at well over twice the norm. But at this point statistics cease to have any meaning in terms of human misery. The Great Famine extended over nearly all Europe, lasting for some three years. In Hungary it was said that the Tartar women ate their own children. In Italy and Germany poor people ate whatever was edible—fungi, cats, dogs, and even snakes. In England there were food-riots in many counties, the most serious perhaps being that in Oxfordshire.¹

One should note, too, that a failure of the wheat harvest drove up all the other food-prices, whether or not there was cattle-plague or sheep-rot (as there seems to have been in 1594).²

With such widespread near-starvation and a real threat of popular rebellion in various parts, it is no wonder we find two pieces of panic legislation passed in 1597–8. One was the great act codifying a mass of scattered legislation and local experiments for the relief of poverty. The other was the act for the maintenance of husbandry and tillage, which restored many of the restrictions on enclosure and conversion to pasture that had been rashly repealed four years earlier.³

¹ *State Papers Domestic*, 1595–7, pp. 316–20, 323, 325, 342–5. There were disturbances in western Norfolk also (*ibid.*, p. 401) and in the west country. The depositions make it clear that they arose from simple hunger.

² The deputy lieutenants for Hertfordshire reported in October 1595 on the small yield of the recent harvest, “which succeeding a dear year, wherein all former stores were spent, upheld the high prices. Wheat is better in quality this year, but the quantity is small, whereby barley, which was but thin, carries a higher price, as the poor who were wont to feed upon wheat and rye are driven to it. These things being dear, all other victuals bear higher prices. White meats are high, through the great loss last year of milch beasts, and those which escaped were so poor as to yield little profit, whereby the store of butter and cheese failed.”—*State Papers Domestic*, 1595–7, p. 107.

³ There were in fact two acts against depopulation and enclosure in this session. For a recent discussion of this legislation, see Maurice Beresford, ‘Habitation versus Improvement’, in *Essays in the Economic and Social History of Tudor and Stuart England*, pp. 40–69.

Mercifully, the year 1598 saw at least an average harvest (and a good one in the west), and that of 1599 was good generally. The new century opened with another average wheat-harvest; and then came six good years in a row (1601-6). 1607 was average to poor; and 1608 was bad. Finally, the decade from 1610 to 1619 was about average as a whole: two deficient harvests (1613, 1617) but nothing disastrous; and two good harvests to end the decade

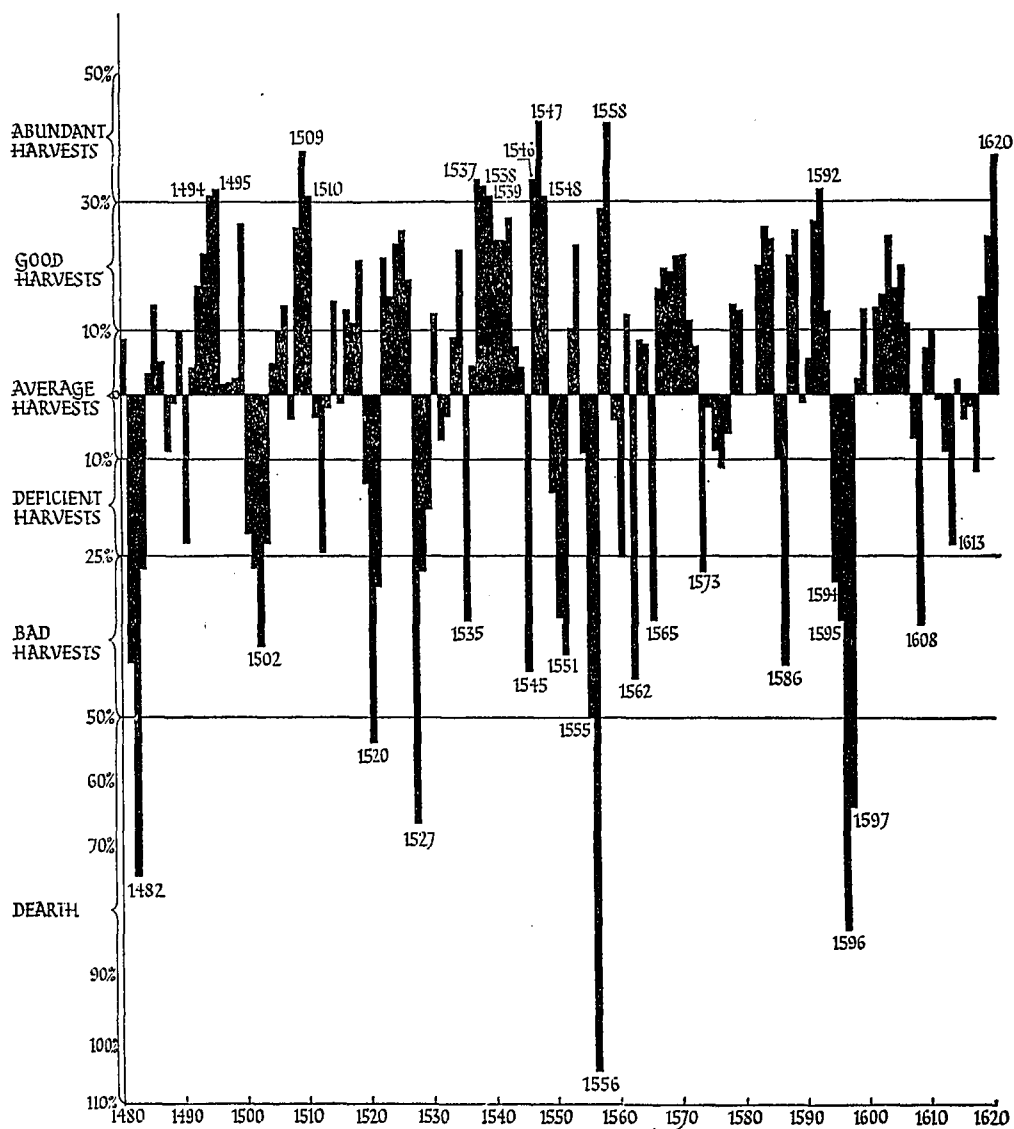


FIG. II

THE QUALITY OF ENGLISH HARVESTS 1480-1620

The percentage figures in the left-hand margin represent the deviation of the annual average price from the thirty-one-year moving average for that year.

(1618, 1619). The next really bad harvest came in 1622 and is reflected, for example, in the petition of the textile workers of Wiltshire to the justices of the county that they should fix wages "now especially in this great dearth of corn."¹

The yield of the harvest was the most fundamental fact of economic life in England as in all other countries. When we look at the graph of the fluctuations in the average price of wheat from year to year (see Fig. I) we are looking at an electro-cardiogram of a living organism. These are the heart-beats of the whole economy of England through five generations. The health and well-being of the entire country depended upon the quality of this heart-beat more than upon any other organ and activity. This is not to say that the heart is the only organ of any real significance in the body politic; but its rhythm governed all else. If the corn harvest represented the heart, the textile industry represented perhaps the liver: a major organ whose derangements could cause much unease and misery. But the derangements of the heart could bring the body politic near to total breakdown; and its healthy beat could stimulate the entire economy.

It may be said that we attach too much importance to a single crop which was not of universal consumption. But the movements of wheat-prices reflected fairly closely the movements of other food-prices. The Hertfordshire authorities already quoted showed a full awareness of the interaction of a scarcity of corn upon all other foodstuffs; and the graph of the prices of wheat, beans and peas, and oats at Lincoln (Fig. III) shows these commodities moving in close sympathy with each other.²

Much basic research remains to be done before one can speak confidently of English food supplies in general throughout this period, above all in the difficult field of meat supplies of all kinds. According to foreign observers, the English were big meat-eaters, but these impressionistic observations are of little value. It all depended on what class of people the foreign visitor most frequented, and on the circumstances of the particular year. Data about meat-prices, certainly anything resembling a price-series, are particularly difficult to obtain, before the late sixteenth century.

One cannot necessarily assume that a wet year which adversely affected the grain harvest would be good for the grasslands of the western half of the country, and so for meat supplies in general, as a kind of rough compensation for a dearth of breadstuffs. Excessive rain, which seems to have been the

¹ *English Economic History: Select Documents*, ed. by Bland, Brown, and Tawney, pp. 356-7.

² The Lincoln figures (not a perfect series) for the period 1513-1712 are given in J. W. F. Hill, *Tudor and Stuart Lincoln*, appendix III, pp. 222-6. They form a reasonably continuous series only from 1543 and my graph has been drawn accordingly.

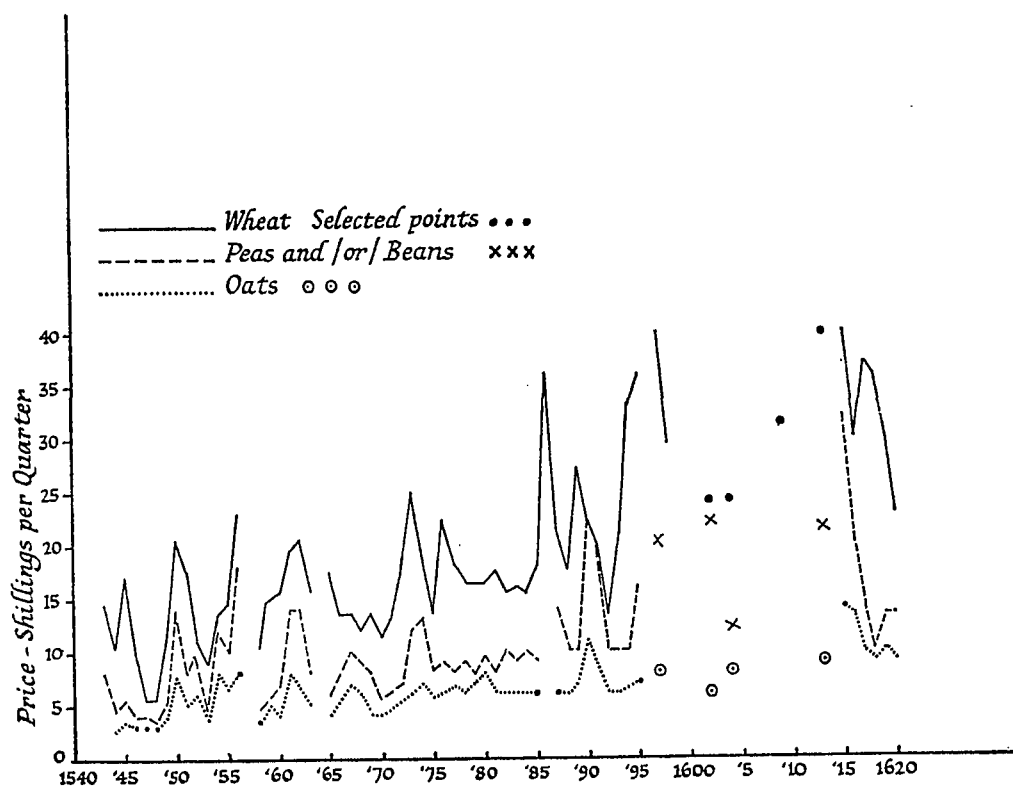


FIG. III
LINCOLN PRICES 1543-1620

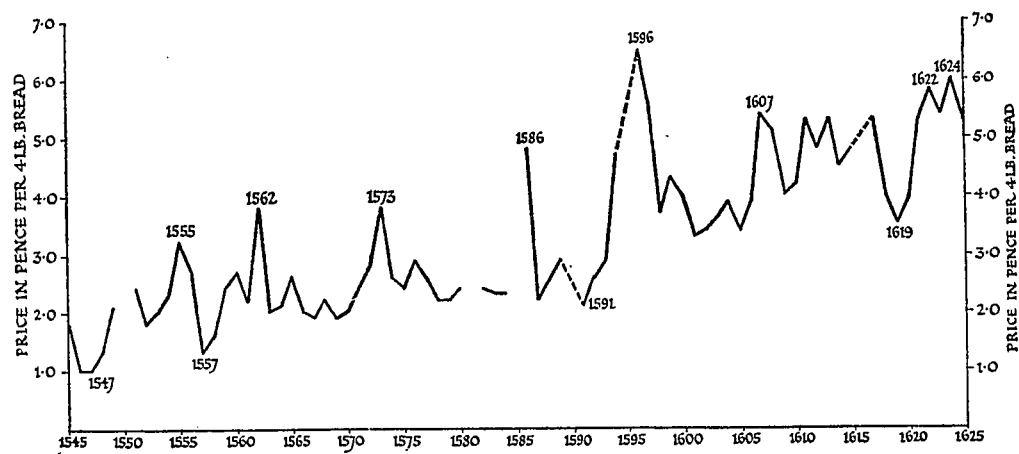


FIG. IV
LONDON BREAD PRICES 1545-1625
(after Beveridge)

commonest cause of harvest failures during the period under review, could also lead to widespread diseases among farm animals. Thus the rain-spoiled harvest of 1594 seems to have been accompanied by great losses of milch-kine from some cause, and hence a scarcity of butter and cheese. The below-average harvest of 1543 (again probably due to excessive rain) was accompanied or followed by "a great death among cattle," so that meat prices rose excessively by the spring of 1544.¹ One's general impression is that compensations of breadstuffs and meat supplies were not the rule. General shortages of foodstuffs seem to have been more common, not always because supplies failed simultaneously but because a failure of one supply increased the pressure of demand upon all other foodstuffs. And for most of the population such a 'dearth'—to use the contemporary term for dearthness—was the same thing as a shortage or a failure of supply.

Finally, I have not taken into account the current and unfinished argument about the amplitude of fluctuations in average grain prices in this period, and the significance of variations in amplitude, if any.² What has been established in this essay is the detailed pattern of harvests, year by year from the late fifteenth century to the early seventeenth, as the inescapable basis for further argument about demographic questions, economic growth (e.g. savings and investment), and legislative and administrative activity in the social field.

APPENDIX I

NOTE ON SOURCES AND METHOD OF CLASSIFICATION OF HARVESTS

The basic material for this essay came from the Beveridge price-data now in the custody of the London School of Economics, supplemented by enquiries among many borough records up and down the country. I am indebted to the Librarian of the School of Economics for access

¹ T. H. Baker, *Records of Seasons, Prices, and Phenomena*, p. 119, apparently quoting Holinshed. A proclamation of 7 January 1544 prohibited all exports of corn and victuals "for a season" notwithstanding any licence already granted. Another proclamation of 21 May 1544 fixed the prices of all kinds of meat, game, wildfowl, eggs, and butter. Yet another proclamation of 6 November 1544 prohibited the export of any cheese or butter without special licence.

² See J. D. Gould, 'Y. S. Brenner on Prices: a Comment', in *Economic History Review*, Second Series, xvii, pp. 351-61. Gould's article appeared too late for consideration here, but it may be noted that he rightly gives a high place in Elizabethan economic and social policy to the fear of civil disorder arising *inter alia* from "violent changes in real incomes induced by rising and fluctuating prices for the staple foodstuffs." True: but sheer hunger was an even sharper cause of actual or potential civil disorder.

Brenner's two articles on price-inflation in sixteenth-century England appeared in *Economic History Review*, Second Series, xiv and xv.

to the Beveridge papers. Most of the material used here comes from Box J. 35. This gave me the general average wheat-prices for each year, based upon all the known local price-series, and also the 31-year moving average figures. The Beveridge MSS also yielded the London wheat prices for the period 1500 to 1614; and Dr P. J. Bowden kindly sent me his transcript of London wheat prices (London Assize) for the period 1511-1620.

The magnificent series of Exeter wheat prices (1316 to 1820, with few gaps) was used by Lord Beveridge in 'A Statistical Crime of the Seventeenth Century' in the *Journal of Economic and Business History*, 1, 1929, pp. 503-33. My Exeter figures (see Appendix II) are derived from that article.

The Lincoln figures for wheat, oats, beans, and peas are printed in J. W. F. (now Sir Francis) Hill, *Tudor and Stuart Lincoln*, Appendix III, pp. 222-6. Norwich figures are contained in a MS. volume among the city records (Assize of Bread, 1552-1627), but in general series of wheat prices are disappointingly rare among local records. Thus Bristol has a complete series of the Assize of Bread only from 1677 to 1825. London bread prices exist, however, from 1545, and have recently been printed in B. R. Mitchell, *Abstract of British Historical Statistics*, p. 497.

The method of classifying the quality of each harvest was as follows. I adopted Beveridge's 31-year moving average, on the assumption that this was based upon the average length of a human generation (30 years) adjusted slightly so as to give a middle term in the series. I assumed that such a long-term average eliminated two important influences on harvest-prices, namely the effect of monetary changes and that of a rising population. Testing the alternative results to be obtained by using a 10-year moving average, I found it too distorted by short-term price-movements and therefore quite unsatisfactory as a base. I satisfied myself that a long term such as 31 years was necessary in order to eliminate monetary and population factors completely. The moving-average value for any particular year I regarded as the *norm* for that year, the price at which wheat would have sold after a harvest of average quantity and after eliminating non-harvest factors in this way.

Where the average price for any given year was 30 per cent or more below the norm for that year, I classified the harvest as 'abundant'. Where it was between 10 and 30 per cent below the norm I termed it 'good'. Where the average price for the harvest-year was within ± 10 per cent of the norm, the harvest was classed as 'average'. Average prices between 10 and 25 per cent above the norm were taken to indicate a 'deficient' harvest; between 25 and 50 per cent above the norm were called 'bad'; and an average of 50 per cent and more above the norm was termed a 'dearth'.

Obviously, any classification like this is open to detailed theoretical objections. A 25-year moving average would doubtless have been as satisfactory as one of 31 years; and a harvest of which the average price was 20 per cent above the norm might equally well have been called 'bad' as 'deficient'. What I am quite clear about, however, is that the classification of harvests produced by using these statistical categories agrees at every point with all the literary references in this period to dearths, to bad, good, and abundant harvests. More than that one cannot reasonably ask of any statistical method.

I have to thank Mr Bernard Foster of Exeter cordially for his considerable help with the statistical calculations and the graphs.

APPENDIX II

TABLE OF ANNUAL HARVESTS FROM 1480 TO 1619 CLASSIFIED BY QUALITY
(Prices are given in shillings per quarter)

Year	1 <i>General average for year</i>	2 <i>Exeter average for year</i>	3 <i>31-year moving average (norm)</i>	4 <i>Deviation of general average from norm (percentage)</i>	5 <i>General quality of harvest</i>	6 <i>Comments</i>
1480	5.36	5.46	5.87	— 8.6	Average	
1481	7.78	6.15	5.91	+ 31.6	Bad	Average in West
1482	10.36	8.55	5.93	+ 74.7	Dearth	Less bad in West
1483	7.54	9.00	5.93	+ 27.2	Bad	Dearth in West
1484	5.67	7.28	5.87	— 3.4	Average	Deficient in West
1485	5.07	5.84	5.90	— 14.1	Good	Average in West
1486	5.61	6.22	5.92	— 5.2	Average	
1487	6.51	7.76	5.99	+ 8.7	Average	Bad in West
1488	6.16	6.40	6.09	+ 1.2	Average	
1489	5.53	6.31	6.13	— 9.8	Average	
1490	7.58	8.83	6.17	+ 22.8	Deficient	Bad in West
1491	5.91	5.44	6.18	— 4.4	Average	Better in West
1492	5.17	4.34	6.23	— 17.0	Good	Better in West
1493	4.79	4.97	6.16	— 22.2	Good	
1494	4.20	5.42	6.06	— 30.7	Abundant	Good but not abundant in West
1495	4.10	4.86	6.04	— 32.1	Abundant	Good but not abundant in West
1496	6.03	6.07	6.09	— 1.0	Average	
1497	5.99	7.51	6.11	— 2.0	Average	Deficient in West
1498	5.85	6.10	6.00	— 2.5	Average	
1499	4.37	6.10	5.96	— 26.7	Good	Average in West
1500	7.30	9.38	6.01	+ 21.5	Deficient	Dearth in West
1501	7.67	7.39	6.05	+ 26.8	Bad	
1502	8.46	—	6.08	+ 39.1	Bad	
1503	7.46	7.98	6.05	+ 23.3	Deficient	Worse in West
1504	5.81	7.98	6.12	— 5.1	Average	Bad in West
1505	5.67	5.87	6.31	— 10.1	Average	
1506	5.50	—	6.38	— 13.8	Good	
1507	6.56	7.14	6.39	+ 2.7	Average	Below average in West
1508	4.76	—	6.43	— 26.0	Good	
1509	4.01	5.02	6.46	— 37.9	Abundant	Good but not abundant in West
1510	4.50	—	6.51	— 30.9	Abundant	
1511	6.74	6.70	6.59	+ 2.3	Average	
1512	8.49	6.83	6.83	+ 24.6	Deficient	Average in West
1513	7.10	6.68	6.97	+ 1.9	Average	
1514	6.05	5.57	7.09	— 14.7	Good	Better in West
1515	7.30	9.14	7.19	+ 1.4	Average	Bad in West
1516	6.30	6.06	7.25	— 13.1	Good	Better in West
1517	6.52	5.51	7.29	— 10.6	Good	Better in West
1518	5.74	5.68	7.27	— 21.0	Good	
1519	8.25	8.54	7.26	+ 13.6	Deficient	
1520	11.51	12.94	7.48	+ 53.9	Dearth	Worse in West: highest average at Exeter since 1316
1521	9.83	10.14	7.59	+ 29.5	Bad	Worse in West (dearth)
1522	5.98	6.40	7.62	— 21.5	Good	

HARVEST FLUCTUATIONS

45

Year	1 <i>General average for year</i>	2 <i>Exeter average for year</i>	3 <i>31-year moving average (norm)</i>	4 <i>Deviation of general average from norm (percentage)</i>	5 <i>General quality of harvest</i>	6 <i>Comments</i>
1523	6.44	6.94	7.63	- 15.6	Good	Less good in West
1524	5.89	5.52	7.70	- 23.5	Good	Better in West
1525	5.73	6.46	7.83	- 25.5	Good	
1526	6.53	7.04	7.97	- 18.1	Good	
1527	13.37	10.56	8.03	+ 66.5	Dearth	Not such severe dearth in West
1528	10.32	11.21	8.10	+ 27.4	Bad	Worse in West
1529	9.64	—	8.23	+ 17.7	Deficient	
1530	7.52	—	8.59	- 12.5	Good	Thorold Rogers says prices were low in East, but high in West and South
1531	9.23	—	8.62	+ 7.1	Average	
1532	8.82	10.30	8.62	+ 2.3	Average	Deficient in West
1533	7.91	8.43	8.70	- 9.1	Average	
1534	6.97	6.58	9.01	- 22.6	Good	
1535	12.67	10.87	9.34	+ 35.7	Bad	Deficient in West but not bad
1536	9.17	8.43	9.61	- 4.6	Average	Much better in West
1537	6.44	6.64	9.70	- 33.6	Abundant	
1538	6.69	7.56	9.86	- 32.2	Abundant	Good but not abundant in West
1539	7.03	8.70	10.17	- 30.8	Abundant	Less abundant in West
1540	8.14	7.78	10.70	- 23.9	Good	Better in West
1541	8.78	8.27	11.52	- 23.8	Good	Better in West
1542	8.46	7.66	11.67	- 27.5	Good	Abundant in West
1543	10.71	9.65	11.55	- 7.3	Average	Good in West
1544	11.26	12.70	11.76	- 4.3	Average	
1545	17.31	19.10	12.13	+ 42.7	Bad	Disastrous in West: highest average ever known
1546	8.19	6.46	12.36	- 33.7	Abundant	Great abundance in West
1547	6.11	6.67	12.86	- 52.5	Abundant	
1548	9.01	9.33	13.09	- 31.2	Abundant	
1549	15.44	15.06	13.37	+ 15.5	Deficient	
1550	18.48	15.79	13.92	+ 32.6	Bad	Deficient in West but not bad
1551	19.72	20.20	14.01	+ 40.7	Bad	
1552	12.66	12.66	14.18	- 10.7	Good	
1553	11.14	10.03	14.44	- 22.9	Good	
1554	16.01	14.51	14.70	+ 8.9	Average	Better in West
1555	22.47	24.77	14.95	+ 50.3	Dearth	Worse in West
1556	31.15	32.41	15.23	+ 104.5	Dearth	Worse in West
1557	11.06	11.47	15.51	- 28.7	Good	
1558	9.49	—	16.03	- 40.8	Abundant	
1559	17.02	20.64	16.33	+ 4.2	Average	Bad in West
1560	20.93	22.62	16.66	+ 25.6	Bad	
1561	14.66	15.50	16.81	- 12.8	Good	Less good in West
1562	24.76	26.96	17.22	+ 43.8	Bad	Dearth in West
1563	16.08	20.32	17.57	- 8.5	Average	Deficient in West
1564	16.53	21.84	17.85	- 8.0	Average	Deficient in West
1565	24.21	27.03	18.04	+ 34.2	Bad	Worse in West
1566	15.15	12.84	18.14	- 16.5	Good	Much better in West
1567	14.45	14.06	18.09	- 19.6	Good	
1568	14.70	17.06	18.24	- 19.4	Good	Average in West
1569	14.58	18.88	18.46	- 21.0	Good	Average in West

Year	1 <i>General average for year</i>	2 <i>Exeter average for year</i>	3 <i>31-year moving average (norm)</i>	4 <i>Deviation of general average from norm (percentage)</i>	5 <i>General quality of harvest</i>	6 <i>Comments</i>
1570	14.76	—	18.79	— 21.4	Good	
1571	16.92	17.38	19.19	— 11.8	Good	Less good in West
1572	17.43	18.21	18.82	— 7.4	Average	
1573	24.45	20.47	19.06	+ 28.3	Bad	Average in West
1574	19.99	21.21	19.56	+ 2.2	Average	Below average in West
1575	21.52	29.16	19.78	+ 8.8	Average	Very bad in West: good in East
1576	21.97	—	19.70	+ 11.5	Deficient	
1577	21.04	22.40	19.79	+ 6.3	Average	
1578	17.02	—	19.73	— 13.7	Good	
1579	17.66	—	20.34	— 13.1	Good	
1580	21.01	—	21.01	0	Average	
1581	21.83	24.38	21.86	— 0.1	Average	Deficient in West
1582	18.23	21.25	22.86	— 20.2	Good	Average in West
1583	17.21	—	23.30	— 26.1	Good	
1584	17.80	21.21	23.64	— 24.7	Good	Average in West
1585	26.48	32.02	24.14	+ 9.7	Average	Bad in West
1586	34.79	40.57	24.50	+ 42.0	Bad	Dearth in West
1587	19.43	22.32	24.76	— 21.5	Good	Average in West
1588	18.61	19.60	24.95	— 25.4	Good	
1589	25.22	26.66	24.99	+ 0.9	Average	
1590	23.75	20.88	25.14	— 5.5	Average	Better in West
1591	18.41	17.76	25.34	— 27.3	Good	Better in West
1592	17.52	22.41	25.75	— 32.0	Abundant	Less good in West
1593	23.00	28.63	26.50	— 13.2	Good	Below average in West
1594	34.87	38.88	26.92	+ 29.5	Bad	Worse in West
1595	37.09	32.00	27.73	+ 35.7	Bad	Less bad in West
1596	50.70	62.94	27.72	+ 82.9	Dearth	Disastrous in West: highest average ever recorded
1597	46.18	39.92	28.15	+ 64.0	Dearth	Less bad in West
1598	28.03	19.76	28.84	— 2.8	Average	Abundant in West
1599	25.39	20.55	29.29	— 13.3	Good	Very good in West
1600	29.71	23.83	29.82	— 0.4	Average	Good in West
1601	25.91	24.54	30.05	— 13.8	Good	
1602	25.64	—	30.15	— 14.9	Good	
1603	23.14	—	30.51	— 24.1	Good	
1604	25.68	—	30.77	— 16.5	Good	
1605	24.55	27.98	30.67	— 19.9	Good	Average in West
1606	27.62	25.46	31.06	— 11.1	Good	Better in West
1607	34.61	42.61	31.94	+ 8.4	Average	Bad in West
1608	44.03	45.58	32.52	+ 35.4	Bad	
1609	30.74	28.59	33.03	— 6.9	Average	Much better in West
1610	29.93	28.80	33.15	— 9.7	Average	Better in West
1611	33.11	30.13	32.96	+ 0.5	Average	
1612	35.53	—	32.18	+ 9.4	Average	
1613	39.20	—	31.70	+ 23.7	Deficient	
1614	31.25	31.46	32.01	— 2.4	Average	
1615	34.21	33.08	32.95	+ 3.8	Average	
1616	33.87	—	33.21	+ 2.0	Average	
1617	37.65	—	33.72	+ 11.7	Deficient	
1618	30.68	37.31	34.28	— 15.0	Good	Below average in West
1619	26.30	—	34.83	— 24.5	Good	

List of Books and Articles on Agrarian History issued since September 1962¹

Compiled by JOAN THIRSK

BOOKS AND PAMPHLETS

- ALLISON, K. J. *An Elizabethan Census of Ealing*. Ealing Local Hist. Soc. members' papers, no. 2. 1962.
- ANDERSON, ANNE (ed.). *The Registers and Baptisms, Marriages, and Burials in the Parish of Bromborough in the county of Chester, 1600-1726*. Bromborough Parochial Church Council. 1962.
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- CORBETT, ELSIE. *A History of Spelsbury, including Dean, Taston, Fulwell, and Ditchley*. Cheney & Sons, Banbury, Oxon.
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Book Reviews

A. E. MOURANT and F. E. ZEUNER (eds.),
*Man and Cattle: Proceedings of a Symposium
on Domestication*. Royal Anthropological
Institute Occasional Paper No. 18, 1963.
166 pp. 63s.

This collection of eighteen stimulating papers constitutes the proceedings of a symposium held by the Royal Anthropological Institute in 1960 on the domestication and history of cattle. The aim was to bring together people from different disciplines able to present results of research in their diverse fields ranging from archaeology to animal breeding. The result forms an important contribution to the literature on the history of cattle, but in such a rapidly developing subject it is unfortunate that, as regretted in the preface, the papers were not published until over three years afterwards.

Professor Zeuner said in his introductory paper that domestic cattle appear to come from two wild sub-species: *Bos primigenius namadicus*, which seems to have given rise to the humped Zebu cattle that appear first in India, and *Bos primigenius primigenius*, the giant auroch of Europe, that was apparently domesticated first in the Near East. The ox was among the later farm animals to be domesticated, probably between 6000 and 4000 B.C., and cattle are definitely associated with agriculture, whereas recent evidence supports earlier ideas that goats and sheep, which were domesticated before cattle, may have been originally kept by nomadic pastoralists who had no agriculture. The auroch seems to have given rise to the two main European stocks, the long-horns and the short-horns. The European long-horn seems to have gained blood from the local aurochs, but the short-horn (*longifrons*) type seems to have been a distinct stock introduced into Europe, and Professor Zeuner describes its appearances on such sites as the Swiss Neolithic lake dwellings, but its origin remains a mystery.

Dr M. Degerbøl traced the gradual reduc-

tion in size of the skeletal remains found on Danish archaeological sites from the large wild auroch to the small cattle of the Middle Ages. Modern cattle have increased in size again to become about as large as the Neolithic animals. Dr P. A. Jewell traced remarkably similar changes in the size of British cattle over the same period, including the appearance of a polled stock in the Celtic Iron Age. It is in this context that archaeology can make a valuable contribution to agricultural history, and it is pleasing to note from Dr Jewell's paper that measurements from recent medieval excavations (outlined in AHR IX, p. 105) are already being used in such overall surveys.

Major C. Wheaton-Smith changed to a historical approach to cattle breeds, sub-titling his paper 'A Study in Progressive Hybridization'. He used the sensible method of surveying the major cattle types, rather than the making of a detailed catalogue of every breed, but pointed out the limitations of the historical approach owing to the inadequacy of records. His claim that selective breeding was impossible with subsistence agriculture, and that an economic incentive for improvement was necessary, is not borne out by the wide variations in modern livestock: selection, possibly partly natural, and partly unconscious, has probably occurred ever since animals were domesticated. In the first period dealt with, up to 1760, records are scanty and descriptions are largely based on colour. Illustrations found in such scenes as the Nativity, which is a useful source of livestock paintings, show a great diversity of type. It was probably during this period that the old red Dutch cattle were crossed with native British stock to produce such breeds as the Hereford and Red Poll. From 1760 onwards the stimulus of war and the demands of industrialization were answered by the breeding work of Bakewell with the Shorthorn. On the continent the Charollais expanded in France as a beef animal and the Jersey and Guernsey developed. There is historical evi-

dence that these breeds contributed to the Ayrshire, yet this link is not supported by recent blood-typing studies, doubtless owing to limitations of the method discussed below. The period 1820-80 saw the multiplication of breeds, and rightly or wrongly Major Wheaton-Smith attributed many changes at this time to the spread of the railway, just as the later development of motor transport influenced the dairy farmer. He said that as stock no longer had to walk to market it was possible to develop for early maturity, and the improvement of communications accelerated the progressive hybridization, which was the theme of his paper. Mr E. J. Boston, too, gave a historical paper covering Europe and Africa, and drew attention to the dangers in historical studies of placing too much reliance on the appearance of animals when he showed an illustration of an African cow that looked like a Jersey.

Dr A. E. Mourant introduced a series of six papers on blood types by discussing the genetic principles involved. Dr J. G. Hall showed how different blood types could be linked with hereditary characters, and said that the frequencies with which the different hereditary characters occur in different breeds provide genetic markers by which the breed can be characterized. Dr A. Robertson pointed out in discussion the difficulty of projecting these frequencies into the past because the modern pedigree system reduces the number of bulls used and allows random changes in frequency. One blood type described by Dr A. D. Bangham and found in only the Jersey, Guernsey, and South Devon breeds suggested a link with the Zebu. The distribution of another blood type detailed by Mr A. L. Ogden opposed this link, but a change of distribution might have occurred in these breeds owing to natural selection. It seems therefore that blood typing studies, although useful in supporting historical evidence, have pitfalls if used on their own.

Professor J. D. Evans described the cattle cults and bull-jumping sport of ancient Crete, and there were other papers on the social background of domestic cattle among primi-

tive peoples in Africa and Asia. Such studies when projected into the past are useful in interpreting archaeological materials and historical records.

The inclusion of detailed comments made in discussion increases the value of the symposium, but it is a pity that each paper lacks a summary and conclusions and that the published review of the symposium made by the editors is apparently the same as that hastily prepared during the conference, because the delay in publication should have allowed the better assessment and association of the evidence from these very different sources so that overall conclusions could be given. But the symposium undoubtedly brings together a unique collection of evidence which should provide much stimulus for future work on cattle history, and we are fortunate that this volume, and his own book, were published before the untimely death of Professor Zeuner removed a leading figure from this field.

M. L. RYDER

H. M. HEYBROEK, *Diseases and Lopping for Fodder as possible Causes of a Prehistoric Decline of Ulmus*. Korte Mededeling, no. 54, Wageningen. 1963. 12 pp.

This paper sets out to explain the decline of elm in pollen diagrams of western, central, and northern Europe c. 3000 B.C., and shows how a knowledge of agricultural practices in underdeveloped countries today can throw light on prehistoric farming. Climatic change and elm disease have been put forward as possible explanations for the decline of the elm in prehistoric times, but neither is convincing. Instead Dr Heybroek advances the view that the elm was lopped to provide fodder for livestock, thus causing extensive damage to the trees and inhibiting new growth. The lopping of elms enables rots to enter the wounds. More serious still, lopping restricts the formation of flower buds, prevents the tree from producing pollen and seeds, and leads eventually to the decline or complete disappearance of wych elm from the forest. Field elms regenerate from root suck-

ers and can resist lopping for a while, but if it is continued over several generations, their chances of survival are small. What is the likelihood that lopping took place? The practice is well known in the Himalayas at the present time, where hay for the winter is scarce, and leaf fodder is indispensable. Poor peasants in European countries are known to have used elm leaves in the same way, in Switzerland and Norway in this century, in Italy, Austria, France, Spain, and England in the sixteenth and seventeenth centuries. Oak and ash have been similarly used: oak leaves in India, Yugoslavia, and Turkey; ash in Italy, Sweden, and, we might add, England as well (see Thomas West, *Antiquities of Furness*, 1805 edn, p. 40). In quality, however, elm leaves are superior, and their starch equivalent (64) exceeds that of all other leaves, and even exceeds that of good hay (57). In these circumstances it is not unreasonable to suggest that lopping was the cause of the decline of elm in Europe c. 3000 B.C. and it is probably unnecessary for Dr Heybroek to quibble because he has not as yet found any references to this practice in the Low Countries.

JOAN THIRSK

H. MORTENSEN and H. JÄGER (eds.), *Kolloquium über Fragen der Flurgeneese am 24-26 Oktober 1961 in Göttingen. Berichte zur Deutschen Landeskunde*, 29 Bd., 2 Heft. Dec. 1962, pp. 199-350. Bundesanstalt für Landeskunde u. Raumforschung, Bad Godesberg.

The study of the development of field systems in Central Europe has been mainly the work of geographers, with historians lending some expertise. A colloquium held at Göttingen in 1961 to assemble all active workers on the subject was provoked by a lecture by Frau Prof. A. Krenzlin at Vadstena (Sweden) during the International Geographical Congress of 1960 and, more particularly, by another at Cologne in 1961. Her point of view is briefly (p. 310), "that land tends to be divided into blocks when the rotation of crops is a matter for free choice by the individual or when the economy consists of cattle farming

based on grass. Perpetual cropping on a small part of the total agricultural area, but with emphasis on cattle keeping on forest or poor pasture, leads to the development of a field form with long strips. A field system with dispersed strips develops as more emphasis is put on growing grains, and leads to an obligation to plant agreed crops on strips in fields and to resort to fallowing."

The discussion of this idea was sharp and positive. It appears now that the long cherished idea that the 'three-field system' was established at the time of original settlement has now no supporters. While most agree that farms with long strips are original in the medieval planned settlements in Eastern Germany and are found in special forms as *Waldhufen* and *Marschhufen*, many now believe that farms with long strips are an original form of field system elsewhere. The main theme of the controversy between Prof. H. Mortensen and Prof. Krenzlin was concerned with the causes for the development of such strips. This colloquium cannot be said to have settled the problem, but it provides an excellent bibliography and a terse statement of most of the possible views, together with long pointed discussions.

The following matters are of interest. Most of the maps of German field systems date from c. 1800. Earlier documents describing landownership can sometimes be related to these, but there is an almost total absence of documentary evidence for earlier periods. What evidence is there, then? The grouping of strips in recurring series hints at the form of the original unit, subsequently split by inheritance. This permits *Zurückschreiben*, i.e. a reconstruction of the shape of the original holding. Ridge and furrow may be fossilized under forest or grass cover and so reveal some arable land units of the past. Are these technical units or units of ownership? There is the evidence of remains in lost villages in areas not now intensively cultivated. Soil that has been enriched by the assembly of humus from over a wide area can be recognized. Sometimes the documentary evidence of a series of settlements founded for a single purpose

can be linked with characteristic present field systems.

But studies are in a desperate state of flux. Inheritance customs have changed with time. Investigators are now prepared to admit that complete rearrangements of the land in a parish may have taken place as free trade in land developed in the Middle Ages. A new lord might introduce new ideas. Controversy continues about parcels of land running along the contours where perhaps they once ran up and down hill. The discussion of place-names, field units, ceramic finds continues, with little result.

One would like to hear more comment from modern practical farmers. More excavation, or at least micro-investigation of complete parishes, is required. Any student must reckon on a large number of field types in a small area. He must be prepared for a total redesigning of a field system perhaps more than once since original settlement. A characteristic recommendation by Prof. E. Otremba was to make a comprehensive collection of source materials on this subject.

An outsider might note how this controversy is carried on with minimal reference to examples in Great Britain and France.

D. J. DAVIS

T. J. HUNT (ed.). *The Medieval Customs of the Manors of Taunton and Bradford on Tone*, Somerset Record Society, LXVI. 1962.

The publication by the Somerset Record Society of the thirteenth-century Custumal of Taunton and the fourteenth-century Custumal of Bradford forms a very useful addition to the body of printed material available for that county, but as the latter occupies only two and a half pages, the rest being taken by the Custumal of Taunton and a sixty-four-page-long introduction to it, any appreciation of the volume's usefulness must depend on the treatment accorded the manor of Taunton.

Since the manor of Taunton is one of the most (if not the most) important Somerset manors, this edition of the Custumal will no doubt be warmly welcomed not only by local,

but also by general, historians. I only wish one could extend equally unreserved welcome to the editor's introduction. It contains much of real value—the early history of the manor and of the knight's fees or the note on the profits of the mills, for example—but, on the whole, it falls uneasily between two stools, that of explaining the terms or describing the practices to be met with in the Custumal, and that of commenting on changes over the thirteenth century on the basis of other evidence. The discussion of change is the weakest element in the introduction. The comments made are often too perfunctory to be adequate, some of the statements are arguable, and some of the conclusions quite unacceptable. What is the point, for example, of introducing the subject of commutation of services unless it is fully discussed, or of giving figures of the extent of the demesne in 1232 if no attempt is made to relate this to anything else? Or is it really correct to say that "the basic unit of manorial administration was the tithing," or that enquiry by jury "was an extension of democratic principle"? What is one to make at all of such statements as this: that while the rising level of entry fines "meant a significant increase in the total rent due from holdings there can be little doubt that, behind all these transactions in land, there was concealed a considerable amount of profit for the customary tenants in the form of income from rents or even some capital gains resulting from the negotiations over the agreements"? Or is it really correct to maintain that the obligation to buy manorial grain, incumbent on the customary tenants, was introduced "to secure that the greatest care and interest was taken (by the tenants) in all the agricultural operations during the growth and harvesting of the crop" and "to ensure their full co-operation in demesne production"? Similarly, to suggest that the "comparative prosperity of the villein tenants at Taunton may have attracted workers from the surrounding lands" is to miss completely the significance of the combined evidence of rising entry fines, widow marriages, predominance of the small-holders among the

tenants, heavy mortality among the poorer sections of the tenantry, and rapidly expanding population, all of which point in the direction of an acute land hunger steadily developing over the later part of the thirteenth century.

It is to be regretted that the introduction is at times marred by inaccuracies which could have been avoided with a little more care. Hundred-penny is *not* rent, nor are pannage and herbage payments *for services*. The enumeration of the meadows of the manor in the description of the demesne in 1232 is described as the "area for which the tenants were responsible"—whatever that may mean. The *Recognitiones* are said to have become fixed in amount at 100 marks by 1305, whereas it is clear from the tabulation given on the following page that they stood at that figure from 1263 onwards.

More serious, however, are the inaccuracies which will not be spotted by anybody without extensive knowledge of the Taunton Account Rolls. These are especially numerous in the section dealing with entry fines, p. xlv.

Although the low level of entry fines at the beginning of the thirteenth century is correctly noted and all the figures quoted very typical of it, they are not *strictly* correct; the lowest income from the profits of courts in the first quarter of the century was £15 12s. 3d., and the highest figures in the last quarter were thrice in excess of £80—£135 3s. 10d. in 1278, £83 9s. 4d. in 1290, and £85 11s. 10d. in 1291. The highest recorded fine in the thirteenth century was that of £53 6s. 8d. in 1278. Fines in the first quarter of the thirteenth century twice exceeded £2, fines of £7 6s. 8d. and of £6 13s. 4d. being paid in 1224. While it is true that fines of £5 or £6 are the most typical for the middle years of the century, fines of up to £8 occurred once or twice in this period and, *above all*, the upward trend continued throughout the last quarter of the century and well into the fourteenth century. The magnitude of this increase is also underestimated by using absolute fines instead of fines *per virgate*. Since most of the recorded fines were paid for holdings consisting of

fractions of a virgate, the weight of the financial burden which such fines represented to the tenants is not fully brought out.

The Custumal itself is edited very competently but a few liberties have been taken with the text on the grounds that the surviving copy is a 'corrupt' version of the original. They are all very minor but one instance needs perhaps to be mentioned. The Taunton Custumal is arranged in sections each headed by a list of jurors and each clearly representing an arrangement by tithings. Every time the list of jurors begins with a Thomas de X (=local place-name) this is transcribed as Tethinga de X, set up as a typographically distinct heading, and the list of jurors left shortened by one name. This is done on the grounds that the medieval copyist in a large number of cases (why not always?) wrongly copied the heading 'thedinga de X' as 'Thomas de X' and that his mistakes must now be corrected; all this is pure invention. It is also to be regretted that no references are given with anything mentioned in the introduction.

Mr Hunt obviously has a very extensive knowledge of the Taunton Account Rolls, but he would have done much better to refrain from commenting on change until he was able to make it a subject of a study where he could do himself, and his subject, justice. I sincerely hope that he will yet do so.

J. Z. TITOW

ORAM, R. (transl.), and FENTON, F. H. (ed.). *Court Rolls of the Manors of Bruces, Dawbeneyes, Pembrokes (Tottenham), 1 Richard II to 1 Henry IV. 1377-1399* [Manor of Tottenham Series, II], Borough of Tottenham, Libraries and Museum, 1961. xvi+362 pp. 50s.; MARCHAM, W. McB. (transl.), and FENTON, F. H. (ed.). *Court Rolls of the Manor of Tottenham, 1 Eliz. I to 24 Eliz. I. 1558-1582* [Manor of Tottenham Series, IX], Borough of Tottenham, Libraries and Museum, 1963. viii+202 pp. 42s.

The Borough of Tottenham continues its admirable work of publishing the court rolls of the manor. The latest volumes to appear

cover the last quarter of the fourteenth century and the first twenty-four years of Elizabeth's reign. The medieval volume follows on from Volume I, which was published in 1956, and spanned the years 1328-77. The Elizabethan volume is the third to be published on the sixteenth century. The rolls for the fourteenth century are the records of three separate courts, representing the three parts into which the manor was divided in 1254, following the failure of a direct heir. They show that each lordship consisted of scattered fields, and in some places portions of fields, which suggests that the division must have been a complicated affair. The method of dealing with some common rights may be indicated in the fact that two pieces of land were claimed in the court of Pembroke's manor to be common every *third* year. The holdings of tenants lay in pieces or strips in larger fields, but apart from four references to crofts and fields which were subject to common rights (including the two alluded to above), there is little evidence of any practices associated with a common-field system.

One does not usually expect to obtain a picture of the farming economy of a parish from reading the court rolls of its manors, but with the aid of an excellent subject index, and an early seventeenth-century plan of the Tottenham manors, published by William Robinson in 1840, it is possible to make some guesses which may not be too wide of the mark. There are nearly five times as many references to stock as to crops, and this almost certainly reflects the preoccupations of the peasantry, for on the map of 1619 there were still broad marshes on the eastern edge of the parish alongside the river Lea, woods on the western side, and meadows, groves, rough pasture, and 'downhills' dotted about the central parts. Horses and sheep are most frequently mentioned, next bullocks, cows, and calves, and finally pigs. Oats are referred to fifteen times, beans eight, peas seven, barley three times, wheat once, and rye not at all. Ploughing is mentioned only once, but there are twelve complaints and other comments about the overburdening of the common

pastures. In the light of all this, we may hazard the guess that Tottenham in the fourteenth century was a district of pasture farmers, who reared and fattened cattle and sheep, kept horses (possibly for the use of the traveller on his way to London, for many rode through Tottenham from Cambridge) and selected their crops with as much concern for the appetites of their stock as of their families. By Elizabeth's reign the economy had undergone little change. Perhaps there was still less arable, for there is barely a single reference to arable crops; the maintenance of hedges and ditches and the controlled use of common pastures called for a steady stream of court orders. It is noticeable how often the boundaries of each man's land in the common meadows had to be re-measured and re-staked; the operation was carried out in 1527 and 1551, and was again necessary in 1561.

As for the evidence of customary land transactions in Tottenham, every assistance is now at hand for a careful analysis. All these volumes of court rolls have place, personal, and subject indexes; there are parish registers from 1558 onwards; and now comes the news that the field book which accompanied the plan of 1619 has recently been deposited in the Middlesex Record Office.

JOAN THIRSK

HENRI PIRENNE, *Histoire Economique et Sociale du Moyen-Age*, édition revue et mise à jour avec une annexe bibliographique et critique par H. van Werveke. Presses Universitaires de France, 1963. xii+224 pp. F. 14.

Professor van Werveke, of the University of Ghent, has produced a reprint, with a new bibliography and notes, of one of Henri Pirenne's best works of historical synthesis. Written for Volume VIII of Glotz's *Histoire du Moyen Age*, it was published in English in 1936. The text, which is unaltered in this edition, is therefore well known in this country. Professor van Werveke has, however, added a useful up-to-date bibliography, with comment, to illustrate the various points made by Pirenne. Of particular interest are

the bibliographical notes to Pirenne's introduction, giving an up-to-date commentary on the famous Mahomet and Charlemagne thesis. The bibliography on agrarian history is useful in the context of what Pirenne has to say, though not to be compared with that in Professor Duby's *L'économie rurale et la vie des campagnes dans l'Occident médiéval*, published last year. The international character of Professor van Werveke's bibliography is one of its strong points. It includes a few references to work by historians in Slav countries, though not in the language of origin. Otherwise it covers most of the relevant contributions to the subject matter of Pirenne's work in all the Western European languages.

R. H. HILTON

EINO JUTIKKALA, *Bonden i Finland genom tiderna*, Holger Schilds Förlag, Helsingfors, 1963. 524 pp.

The strong school of economic historians established in the Scandinavian countries includes a number who have centred their attention on agricultural matters. Of these, none is more energetic than Eino Jutikkala, professor of Finnish history in the University of Helsinki. The language barrier has restricted the circulation of much of his work; but this has been partly overcome through his *Atlas of Finnish History* (Helsinki, 1949, 1955) which contains a generous agricultural section, his recent *History of Finland* (New York, 1962) and his contributions to the *Scandinavian Economic History Review* (of which he is the Finnish editor). Through the auspices of the Cultural Commission of the Northern Countries (*Nordiska Kulturkommissionen*), Jutikkala's study of the small farmer in Finland has now been translated into Swedish. It has already taken its place as the classical statement on Finland in the agrarian history of Europe.

The *bonde* is the most important constituent of the Finnish social hierarchy. In the representational structure of the old *riksdag* or parliament, his kith and kin composed "the fourth estate" (though both time and money

not infrequently limited his attendance). The *bonde* remains the backbone of his country to-day. Although Finland was cast in a Swedish mould, the Finnish *bonde* has experienced considerable differences in development from his Swedish counterpart. Some measure of the difference is obtained by comparing Jutikkala's study with Sten Carlsson, *Bonden i svensk historia* (Stockholm, 1949-56). Another indication of the difference lies in the difficulty of translating many agrarian terms from Finnish into Swedish. For the English reader, help is provided by *Maatalouden sanakirja* (Helsinki, 1958), an agricultural dictionary in the compilation of which Jutikkala himself has helped to grapple with the English, Swedish, and German translations of Finland's agrarian terminology.

Bonden i Finland genom tiderna falls into four main parts. The prehistoric and medieval section deals with the differentiation of the component parts of the farm holding—arable, meadow, fishing waters, forest (as hunting ground or burnt-over arable), and common land—and with the beginnings of the field systems. The second section (c. 1500-1680) focuses on the growth of agricultural taxation and the consolidation of rural administration. The third section (1680-1789) covers the age of military invasion and famine, the intrusion of the commercial economy upon domestic self-sufficiency, land reorganization (*storskifte*) with its great legacy of surveyors' maps, and the formal promotion of colonization. The fourth section, encompassing the international revaluation of Finland's farm and forest products, is also concerned with the vital problem of the landless proletariat (*torpare*) and with emigration. There is an epilogue covering developments during the inter-war years.

In his introduction to *Bonden i Finland*, Jutikkala calls attention to the fact that more than 150 original studies central to his subject were published between the appearance of the first and second editions of his book (1942-58). Many of these contributions were the work of his own students. They have been incorporated in his synthesis and are referred

to in more than 40 pages of footnotes. Among these studies, none are more important than the parish and provincial histories which have now been written for the greater part of Finland.

Against this background it is not surprising that *Bonden i Finland* is packed with factual detail. Yet it contrives to be immensely readable. This is explained partly by the logic with which the general scene is built up from a mass of particular illustrations. The method is seen in the analysis of farm and field names, each of which adds its minute quota to the story of the peopling of Finland. Its readability is also explained by a style which re-

calls that of W. G. Hoskins and Maurice Beresford in the same breath as that of Eli Heckscher. In the final place, its readability is inseparable from its humanity. For the book is written with a deep understanding of the *bonde* and an affection for his fields and forests. The *bonde* is above all an individualist and Jutikkala always remembers the individual. His text is alive with the brief but pregnant observations of generations of these strongly independent owner farmers. The result is a devoted and disciplined study indispensable to an appreciation of Finland and in the best tradition of rural history.

W. R. MEAD

Letter to the Editor

SIR,—I refer to your reviewer's note on my book *Old Farm Tractors*. As a parson I know full well how impossible it is to please every one; and this goes for book reviewers too. I must however point out inaccuracies. Your reviewer says I illustrate twenty-five old tractors, whereas the number is nearly double that amount.

Furthermore, he complains of few references and no bibliography. If he read the book, he would see that the references are in the text and that as the book is the first on that subject there can be no bibliography. My references were memories, other folk's memories, one contemporary handbook, and a

few sales catalogues, all of which I have mentioned.

Yours faithfully,

PHILIP WRIGHT

Our reviewer writes: The book is advertised on the jacket as having a frontispiece and 24 plates. I must apologize for not having mentioned that most of the plates contain two photographs. There are occasional references in the text to articles in journals, but the date, volume-number, and page-number are never given. The chapters on tractor trials contain much information for which no source at all is quoted.

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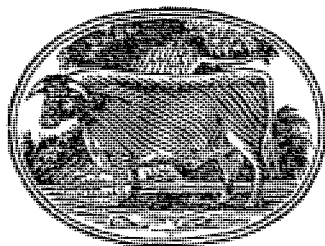
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*

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by M. L. RYDER

*

Agrarian History: Some Vistas and Pitfalls

by REGINALD LENNARD

*

Northumberland Field Systems

by R. A. BUTLIN

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The History of Sheep Breeds in Britain

By M. L. RYDER

(Continued from p. 12)

THE main point that emerges from the foregoing survey is that about 1800 the different breeds could be grouped into three or four broad types associated with certain areas of the country. This distribution is summarized very diagrammatically in Fig. II. In fact these broad types are still mostly evident today.

First, Scotland and the western parts of Britain had a white-faced (or often tan-faced) type in which only the rams were horned. Today even the rams of some of these breeds are hornless. It has already been mentioned that the Shetland sheep provides a link between the primitive brown Soay and the rest of the group exemplified by the Cheviot breed, and although both the Soay and Shetland have soft, fine wool, the Shetland has far less pigment than the Soay. Two stuffed Shetland sheep that came from Unst in 1871, and are now at the Wool Industries Research Association, Leeds, were described by Elwes as unusual in being pure white.¹ The Soay and Shetland, like most other members of this group, have fleeces lacking the long hairs common in the fleeces of the black-faced group, but they are likely to be kempy. In fact the Welsh Mountain sometimes has 'red' kemps, any pigment in this group being brown, as opposed to the black fibres often found in the fleeces of black-faced sheep. Low (1842) shows some as brown animals like the Soay. The Herdwick is an exception; it has a double-coated fleece, often with black fibres, similar to those of the black-faced horned group, in addition to brown coloration. This and its higher frequency of the gene for haemoglobin A suggests fairly recent introduction of black-faced blood. Some Scandinavian sheep have a white face, suggesting a link with the above British type, and this is supported by the high gene frequency for haemoglobin A (about 0.90) in Scandinavian sheep,² and in the Shetland (0.93), but this similarity could be due to selection in a similar environment. The link with Scandinavia was supported by the examination of Norse wools from Scottish sites. Compared with earlier and later specimens from Scotland these were predominantly hairy, differing from the native Soay. The Herdwick is therefore possibly the

¹ H. J. Elwes, *The Scottish Naturalist*, 1912, p. 7.

² J. V. Evans, *Advancement of Science*, XIII, 1956, pp. 198-200.

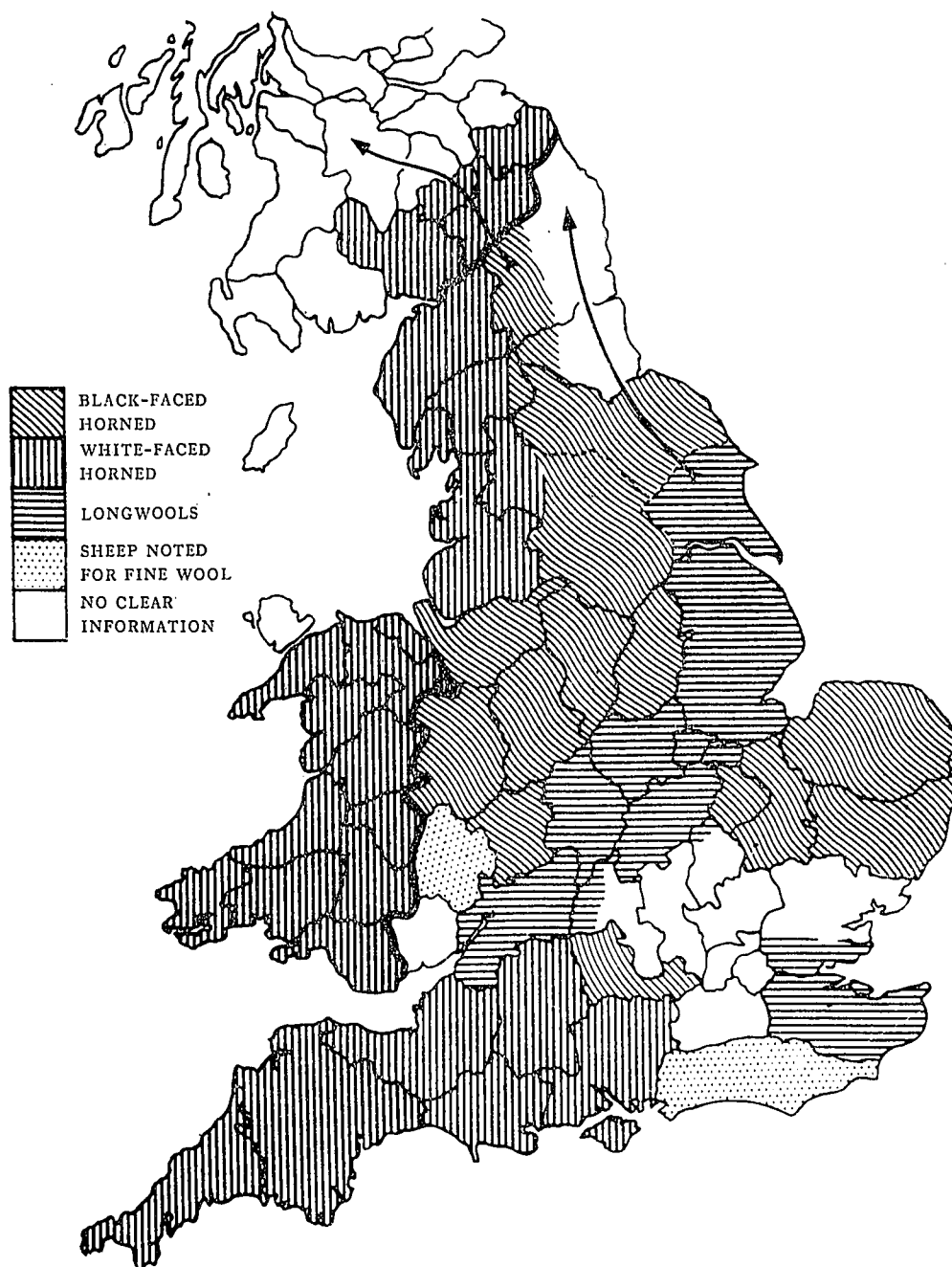


FIG. II
DISTRIBUTION OF BREED TYPES ABOUT THE YEAR 1800

sole survivor of a hairy Norse sheep that came from the north, and it is said that a similar sheep existed in south-west Scotland two hundred years ago.

Some breeds of this group that are now extinct, or almost so, are the Silverdale of north Lancashire and the White-faced Woodland of south-east Lancashire. The white-faced horned group may have extended farther east, as I have a photograph taken by my grandfather about 1905 showing white-faced horned sheep (with one or two black-faced ones) at Deepdale, Upper Wharfedale, which is now a stronghold of the Dalesbred breed (derived fairly recently from the Swaledale). It may have been therefore from this group that the Lonk and Gritstone acquired their lower gene frequencies for haemoglobin A. And it may have been from the same source that these breeds acquired a relatively finer fleece in addition. In this connection it is of interest to mention a sample of wool that was found when the upper story of an eighteenth-century cottage was being demolished in Addingham, Wharfedale. This could be dated only as being between fifty and two hundred years old. It, however, comprised fine wool and coarse hairs that had brown as well as black locks. The hairs had the roots of shed fibres, and the wool was matted amongst the hair as happens in the moulting of primitive sheep. This fleece was like that of the Herdwick and unlike that of the Swaledale.

This leads to the next broad type, the black-faced horned group (the Linton of Mr Trow-Smith). The breeds of this group, typified by the Scots Blackface, have horns with a second spiral like those of the wild Argali sheep. These are unlike the more tightly curled horns of the white-faced horned group, such as those in the Cheviot and Welsh Mountain, which are similar to those of the Soay, and which can probably be ultimately related to those of the wild Mouflon. The black-faced horned type was widespread around 1800 from Berkshire and East Anglia to the Pennines and the mountains of Scotland (Fig. II). But it had reached the Highlands as recently as the second half of the eighteenth century. It appears from the almost extinct Norfolk that the fleeces of these sheep in the south were less hairy than those in the north.

Hornless sheep noted for their fine wool occurred in two widely separated places: the Ryeland in Hereford, and the Southdown in Sussex. Both breeds tend to have woolly faces today. The dusky face of the Southdown may be the result of influence from the black-faced group in the eastern counties. The Romney of Kent is something of an enigma, but it appears to represent a primitive long-wool. The more typical (lustre) long-wools first appeared in the Midlands from the Cotswolds to Lincoln, whence they spread into the south-west and Yorkshire respectively.

TABLE II
SUMMARY OF WOOL TYPES FOUND IN PARCHEMENTS
simplified from Ryder in *Nature*, CLXXXVII, 1960, pp. 130-2, and including additional specimens

	"England"	Yorkshire	Scotland	Canterbury	Spain	British Totals Soay Fine F M Med. Hairy
A.D. 1100-1200	1193 fine-medium				1163 hairy sheep or goat	- - 1 - -
1200-1300	undated ? Soay 1217 fine 1220 fine-medium 1231 fine-medium 1274 ? Soay 1297 fine-medium					
1300-1400	1305 ? Soay 1314 fine-medium 1322 fine 1341 fine-medium 1344 hairy sheep or goat 1387 ? Soay 1392 fine	1328 fine-medium 1346 medium 1350 fine 1350 fine-medium 1350 fine-medium 1365 hairy 1374 medium or hairy 1376 fine 1393 ? Soay				1 1 3 - -
1400-1500	1405 fine-medium (pigmented) 1413 fine-medium 1415 fine-medium 1462 medium 1478 fine	1402 fine 1403 hairy 1494 ? hairy		1450-7 medium		3 4 6 1 3
1500-1600	1503 fine-medium 1527 hairy 1560 fine-medium 1572 medium "Elizabeth" medium	1505 ? hairy 1506 medium 1509 hairy 1511 fine-medium 1511 fine-medium 1513 medium 1537 fine-medium	1519 ? Soay 1574 ? Soay 1580 ? Soay 1594 ? Soay 1597 ? Soay 1597 medium (pigmented)	1502 fine-medium	1608 hairy sheep or goat	5 - 6 5 3

SHEEP BREEDS IN BRITAIN

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TABLE II—continued

	"England"	Yorkshire	Scotland	Canterbury	"Hereford"*	British Totals Soay Fine FIM Med. Hairy				
A.D. 1600-1700	1607 fine-medium 1610 medium 1613 medium 1632 ? Soay 1643 ? hairy 1647 ? fine 1655 fine-medium (pigmented) 1656 fine-medium 1659 medium 1677 medium 1687 medium	1689 medium	1603 medium (pigmented) 1661 ? Soay 1664 ? Soay	1692 fine						
1700-1800	1702 fine-medium 1710 medium 1736 medium				1743 medium 1747 hairy 1747 medium 1762 medium × 2 1766 hairy/goat 1767 medium 1769 medium 1771 fine-medium 1775 medium 1779 medium 1784 hairy/goat 1792 medium 1793 medium					
1800-1900					1840 medium 1843 fine-medium					
						3	2	3	7	1
						-	-	2	12	3
						-	-	1	1	-

* Many of the Hereford parchments were from other parts of Britain.

THE SIXTEENTH AND SEVENTEENTH CENTURIES

The next step is to move further backward in time to see how far these groups can be defined in earlier periods. We are fortunate again here in that Mr Trow-Smith has reviewed much of the historical evidence in his first volume. The sixteenth and seventeenth centuries were a time of change from the subsistence farming of the feudal system to the commercial agriculture carried out by yeoman farmers. More land became available as a result of enclosure, and this enabled greater control to be kept on breeding, but changes in livestock husbandry were entirely due to an increased demand for meat in the expanding towns, and the result was that meat became as valuable as wool. In fact, in Britain, wool was never again to receive the attention paid to it in the Middle Ages, and Dr Bowden has shown from historical records that wool became coarser, as well as longer, during the sixteenth and seventeenth centuries.¹

This finding has been supported by the examination of parchments.² Hairy sheep were apparently kept in all periods (these on the whole appeared like the black-faced, horned type). Whereas most of the parchments with fine wool came from the medieval period, the medium wools became more common in the sixteenth century and predominated after that date (Table II), these are likely to have come from the white-faced hornless type, although some of the medium wools could have come from the white-faced horned type. But as many of the medium-wools are likely to have been long-wools, historical evidence of an increased supply of long wool in the sixteenth and seventeenth centuries is therefore supported. The medium fibres were the coarsest in eighteenth-century parchments, which is in keeping with the records of large, coarse-fleeced Leicesters and Lincolns in that century.

There is no doubt that this change in the type of wool, beginning in the sixteenth century and continuing into the eighteenth, came about as a result of a change in the type of sheep, and was not a direct consequence of the increased feed resulting from enclosure as implied by Dr Bowden.³ Sinclair (1791) said that farmers *introduced* larger animals after 1750. I put *introduced* in italics to emphasize that the better feed resulting from enclosure did not in itself make sheep grow longer and coarser wool: it enabled bigger and longer-woolled sheep to be kept, and allowed the full expression of a genetic potentiality to produce long wool. Dr C. H. Parry confirmed this in 1800 when referring to the enclosures of the eighteenth century, and the same

¹ P. J. Bowden, *Econ. Hist. Rev.*, 2nd series, ix, 1956, pp. 44-58.

² M. L. Ryder, in *Nature*, CLXXXVII, 1960, pp. 130-2; and *idem*, 'Remains derived from skin' in D. R. Brothwell and E. S. Higgs (eds.), *Science in Archaeology*, London, 1963.

³ P. J. Bowden, *The Wool Trade in Tudor and Stuart England*, London, 1962.

thing must have happened after the earlier enclosures. He said: "The secret then is this: that when commons and downs abounded and food was short and scanty, the farmers were compelled to stock them with those breeds of sheep which they would fatten, or at least support. But after these commons had been enclosed, and by cultivation and manuring yielded more abundant crops of nutritious vegetables, the farmer, able to choose which breed he pleased, gratified his fancy by sacrificing his Ryelands for a grosser and more fashionable stock. Thus, then, if enclosures have diminished the fineness of the wool, this event has been not the natural effect of the food on the body of the animal, but the moral effect of the change of crop on the mind of the farmer."¹

Surveying the broad groups again, there is little documentary evidence from Scotland before the eighteenth century, but in the late sixteenth century the sheep of the Scottish border were apparently small, horned, and dun-faced. It seems likely, as Mr Trow-Smith suggests, that this was the ancestor of the Cheviot. Lisle (1757) said that this sheep had good wool and had as many as six horns. This multi-horned trait occurred also in the sheep of Cornwall, and still persists in the primitive Loaghtan (mouse-coloured) breed of the Isle of Man that is related to the Soay. Such characters provide further support for the suggestion that these sheep had a common ancestor.

A group of Scottish parchments from the sixteenth and seventeenth centuries nearly all had pigmented follicle remains, suggesting the Soay sheep, and several of the English medieval parchments had pigmented fibres closely resembling those of the Soay (see Table II).

The Welsh Mountain Breed is well attested in the sixteenth and seventeenth centuries as a small, horned sheep with a tan face. And in the south-west there was a similar type which Mr Trow-Smith aptly terms the South-West Horned. The sheep of Cornwall seem to have been the most primitive; even in Youatt's time there were both horned and hornless animals, and both light and dark faces, among the Cornish sheep. This gives a vivid picture of the variability that must have existed in the most primitive sheep of Britain. The unimproved Portland breed, now almost extinct, is probably a good example of what the South-West Horned type was like before it evolved into such breeds as the Wiltshire Horn and Dorset Horn. It is of interest that the long breeding season for which the Dorset Horn is now famed was noted by Edward Lisle as early as 1757, in the Wiltshire breed. The only other breed

¹ C. H. Parry, *Facts and Observations tending to Show the Practicability and Advantage to the Individual and the Nation of Producing in the British Isles Clothing Wool Equal to that of Spain; together with some hints towards the management of fine-woolled sheep*, Bath, 1800.

that is so fertile is the Merino, and this has led some to suggest Merino blood in the modern Dorset.

The Wiltshire breed extended through Hampshire to meet the fine-woolled "hillish breed," no doubt the ancestor of the Southdown, kept by Toke of Kent in the early seventeenth century. Toke also had a large "marshe" sheep, doubtless the ancestor of the Romney. Gilbert White, a very reliable observer, said in 1773 that west of the river Adur in Sussex all the flocks had horns, and smooth, white faces and white legs, while to the east the sheep were hornless with black faces, and a white tuft of wool on their foreheads. These, he said, had the shortest legs and the finest wool, which holds good for the Southdown today.

The Ryeland was spread through Herefordshire, Shropshire, and Worcestershire, and the Norfolk was widespread in East Anglia. Starting on the hills of the north Midlands, and extending northwards, was the black-faced stock, already mentioned as the Linton. The Cotswold was already known by name, and the Midland counties were inhabited by a large long-woolled sheep typified by the Leicester and Lincoln, and named by Mr Trow-Smith the Midland Longwool.

The broad types evident at the end of the eighteenth century seem therefore to go back to the sixteenth century as regional types which gave rise to the native breed that each county had in the eighteenth century. But the evidence for this is not as strong as that of 1800. For instance, Henry Best of East Yorkshire who wrote in 1641, and gave an excellent account of contemporary sheep farming, did not describe his animals, and spoke of sheep as if they were all of the same type.¹ He did, however, have "pasture sheep" which produced finer wool than his "folded sheep." He preferred sheep to be without horns, because he said that horned sheep affected with lice tear their wool when they scratch with their horns. This suggests a variability in horns like that found in the Cornish sheep. Could his folded sheep have been longwools that had spread northwards from Lincoln? The East Riding today has more Leicester Longwools than Leicestershire itself. Best was very conscious of wool quality. He said that rams should have a smooth, fine staple, and said that wool men found fault with wool that was hairy, and were "desirous of a long fleece." It was unprofitable, he said, to have many black sheep, although a few of them were useful to provide wool for grey stockings.

He mentions lambs being born coloured and then becoming white during the first few months of life. This occurs today in at least two breeds: the Herdwick and the Suffolk. He also writes of rams with speckled faces, which

¹ Henry Best, *Rural Economy in Yorkshire*, 1641, ed. C. Best Robinson, *Surtees Soc.*, XXXIII, 1857.

suggests black-faced horned animals because these often have faces with black and white patches.

THE LINK-UP WITH THE MIDDLE AGES

We push back finally to the Middle Ages, during the latter part of which, at any rate, Britain produced the most wool, and the finest wool (fineness meaning narrowness of fibre diameter); British wool apparently had a greater reputation for fineness than even Spanish wool at that time.

From the foregoing evidence on distribution, it can be suggested that there were three main influxes of different types of sheep into Britain. The first of these was, probably, the Soay type, arriving during prehistoric times. The next main influx perhaps came with the Romans. This Roman stock was probably white-faced and hornless (at least in the ewes, like the Merino) and perhaps had a fleece like the generalized medium-wool of the Near East. It has already been mentioned that this medium-wool probably gave rise to the fine-woolled Merino on the one hand, and it could have given rise to the short-wool (down type) and the long-wool on the other. Such a link of continental with British sheep cannot be supported by the low gene frequency for high blood potassium in the Spanish Merino (0·14), the British long-wools (about 0·1), and the fine, short-woolled Ryeland (0·23) (Table I) because of the possibility of selection, so Evans's suggestion of a link of sheep between Iberia and south-west England in association with Megalithic (Neolithic) remains is untenable.¹ The Devon Longwool (gene frequency 0·13) almost certainly reached the south-west, from the main Midland Longwool stock, much later. The white-faced, horned stock probably originated from crosses of the Roman sheep with the indigenous Soay type. This stock persisted mainly in the north and west, and may have been pushed there with its owners by the Romans. At some time, a third stock arrived, with black faces and horns, possibly with the Danes.

Medieval archaeology is beginning to yield skeletal material that may throw light on the size and shape of medieval sheep. The bones found have been mainly from slender animals,² but many more bones from other sites need to be measured before possible carcass differences between types can be detected. When horned and hornless sheep skulls were first found at Kirkstall Abbey it was thought that the horned skulls might indicate hairy, Pennine hill sheep (possibly black-faced horned) and that the hornless skulls might indicate long-wools. But they could have been from horned rams and hornless ewes, or have resulted from general variability within the same type,

¹ J. V. Evans, *Advancement of Science*, *loc. cit.*

² M. L. Ryder, in *AHR* IX, 1961, pp. 105-10.

e.g. if the white-faced horned type had originally extended further east, or the horned skulls may have been rams or wethers of the medium-woolled type, which is likely to have been the sheep that the monasteries kept to produce wool of good quality.

TABLE III
SOME ILLUSTRATIONS OF SHEEP IN PAINTINGS AND SCULPTURE

<i>Date</i>	<i>Country</i>	<i>Title</i>	<i>Face colour</i>	<i>Horns</i>	<i>Fleece and other details</i>
Roman	Scotland	Carving on Antonine Wall (Mus. Antiq., Edinb.)	—	horned	'rough' wool
c. A.D. 800	Scotland	Carving at St Andrews Cathedral (Mus. Antiq., Edinb.)	—	horned	'rough' wool
c. 1000	England	Harley MS. 603, fo. 69b	white	polled	long tails
11th cent.	England	MS. Cotton Julius A vi	white	4 horned	suckling a lamb
12th cent.	England	Natural History, Royal 12. cxix fo. 19	white	1 polled	
12th cent.	England	Psalter, Trin. College, Camb. R 17, 1.	white	horned	
c. 1200	England	Bestiary, Ashmole 1511 sheep, fo. 29 ^v	white	4 horned	
		wether, fo. 30	white	2 polled	
		lamb, fo. 30	white		
13th cent.	England	Bestiary, St John's College, Oxford, M61, fo. 21		short	closely shorn
				horned	closely shorn
				polled	closely shorn
			5 white		
			2 brown		
			(1 all brown)		
		sheep grazing, fo. 25 ^v	white	horned	black or brown
		wether, fo. 26	white	horned	parts interpreted as shadow
		lamb, fo. 26 ^v	white	polled	
1230	France	Relief at Chartres Cathedral	—	5 polled	short wool
c. 1340	England	Luttrell Psalter	apparently white	sheep 2 of 20 horned	being milked and shorn; fleece of short curls
2nd qtr 14th cent.	England	Holkham Bible Picture Book	white	horned	Idealized wavy wool with curly ends
c. 1350	England	Add. MS. 47,682, fo. 2b	—	polled	short wool (Capt. Sir Hugh Rhys Rankin thinks that this might be an ancestor of the Border Leicester)
14th cent.	Spain	Add. MS. 20,787, fo. 112b	white	horned and polled	long legs and neck; stylized long wavy wool
14th cent.	Italy	Nativity by Ghissi	white	horned with 2nd spiral	

<i>Date</i>	<i>Country</i>	<i>Title</i>	<i>Face colour</i>	<i>Horns</i>	<i>Fleece and other details</i>
about 1423	France	Bedford Book of Hours Add. MS. 18,850 fo. 3, Aries	white	yellow horns from side	short wool, tail to hocks
early 15th cent.	France	fo. 16b, Leaving the Ark Adoration of the Magi	white white	horned 4 polled	small and indistinct
early 15th cent.	Flanders	"Adoration of Immaculate Lamb" by brothers van Eyck	white	polled ram	good mutton conformation, brown legs
15th cent.	N. France	Angel and Shepherds, Book of Hours Nat. Lib. Scot. Add. MS. 18.7.12	white	5 polled	short wool
15th cent.	Flanders	"Angel appearing to Shepherds" in book of hours	white	1 of 8 horned	short wool
1452-60	France	"St Margaret" by Jean Fouquet in book of hours of Etienne Chevalier	white	5 polled sheep	short wool
1st half of 15th cent.	France	Angel and Shepherds in above book of hours Add. MS. 16,997, fo. 63	white	8 polled	remainder have heads hidden
1470	France	Dance of Shepherds	apparently white	horned ? ram polled ? ewe and lamb	short wool
15th cent.	France or Flanders	The Shepherds in the Fields, Book of Hours Edinb. Univ. Lib., MS. 305	white	9 polled	short wool
late 15th cent.	England	Bestiary	white	horned	short, tight stylized curls (as 1340 above)
about 1500	Flanders	Angel and Shepherds Add. MS. 38,126, fo. 79b	14 white 2 brown	polled	short wool, details not clear
1510	Germany	"The Crucifixion" by Mathias Grunewald	white	polled	short wool
about 1520	Flanders	Sforza book of hours Shepherds at Bethlehem Add. MS. 34,294, fo. 91	white	polled flock	short wool like Ryeland, good detail
1st half of 16th cent.	Italy	Nativity by Lotto of Venice	white	polled	short wool (excellent detail)
16th cent.	? South European shore	"The Fall of Icarus" by Peter Brueghel	white but two completely black sheep	polled	has Dutch plough yet shows high cliffs
16th cent. 1530	Flanders Flanders	Grimani Breviary Simon Bening, book of hours	white white	polled polled	July shearing June shearing
2nd half 16th cent.	Italy	"Animals entering the Ark" by Bassano	white woolly (concave nose)	polled	short wool
1595		"Europa" by Adrian Collaert	white	polled	short wool

<i>Date</i>	<i>Country</i>	<i>Title</i>	<i>Face colour</i>	<i>Horns</i>	<i>Fleece and other details</i>
about 1600	Flanders	"Spring" by Peter Brueghel the younger	white	polled	women shearing sheep on their laps
mid-17th cent.	Spain	"The Divine Shepherd" by Murillo	white	polled	short wool
mid-17th cent.	Italy	"Castel Gandolfo"	white	polled	also all-black and ? black face
		"Sermon on the Mount"	white	16 polled sheep	long legs, neck, and tail, bare face
		"Moses in Burning Bush" by Claude Lorraine	white	polled	short wool
mid-17th cent.	Holland	"The Bull" by Paul Potter	white	polled ewe and lamb	} short wool
			brown	horned (with 2nd spiral) ram	
mid-17th cent.	Holland	"The Annunciation to the Shepherds" by Nicholas Bercham	some white some brown	polled	short wool
mid-17th cent.	Holland	"The Migration of Jacob" by A. Van de Velde	dusky	short horns	short wool, tan patch on shoulder (? attempt to depict Jacob's sheep)

From the late eighteenth century onwards there are numerous paintings including illustrations of known breeds for which descriptions, too, are in existence, so the illustrations alone assume less importance. The following are a few examples.

<i>Date</i>	<i>Country</i>	<i>Title</i>	<i>Face colour</i>	<i>Horns</i>	<i>Fleece and other details</i>
1784	England	"The Harvest Wagon" by Thomas Gainsborough. Other paintings by Gainsborough show similar animals.	white	polled	thin sheep, short wool
1789	Hereford	Drawing on estate map from Bryngwyn (Capt. Sir Hugh Rhys Rankin, Bart.)	white	polled	like modern Ryeland
early 19th cent.	England	"Washing sheep in Wiltshire" by Sir David Wilkie	white	horned and polled	Also one all-black animal
			black	horned and polled	short wool
1820	Swansea	Porcelain ram in Victoria & Albert Museum	white	horned	? Welsh Mountain
c. 1825	S.E. England	"The Cornfield" by John Constable	black	polled	short wool with red raddle marks

There are several late eighteenth- and early nineteenth-century sheep illustrations in D. H. Boalch, *Prints and Paintings of British Farm Livestock, 1780-1910. A Record of the Rothamsted Collection*, Harpenden, 1958.

The illustrations in this table are a useful source of sheep history, and there are no doubt many more available for study. The assumption that the sheep illustrated are contemporary seems in general to be valid.

Most paintings and medieval illustrations (Table III) show white-faced hornless sheep, with occasional horned individuals that are probably rams. In all the illustrations examined so far the sheep are depicted with short wool, and often appear like the modern Merino, Ryeland, or Romney. No illustrations of long-woolled sheep have been found, although in a number of instances the fleece is shown with short curls like those of a recently shorn long-wool. Likewise no picture of a sheep with a recognizably hairy fleece, or with a black face, has been found. The only sheep found with coloured faces were those with brown faces in seventeenth-century Dutch paintings.

Prices are another source of information about medieval sheep. Mr Trow-Smith mentions a twelfth-century difference in price between coarse-woolled sheep at 6d. and apparently scarcer, fine-woolled sheep at 10d. each. One wonders whether these particular coarse-fleeced sheep were white-faced horned, black-faced horned, or merely the coarser-fleeced of the medium-wools that constituted the medieval fine-wool. There are three fourteenth-century wool price lists and two fifteenth-century ones in existence. The ordinances governing wool prices in 1343 and 1454 are detailed by Mr Trow-Smith. The average price in the former is shown cartographically by Pelham who also gives a map showing counties noted for coarse wool around 1400.¹ This is compiled from Parliamentary and Council proceedings; the counties with coarse wool were Cumberland, Northumberland, Westmorland, and Durham, Wiltshire, and the south-west, except Somerset, with no information from Scotland or Wales (but a hint of the white-faced, horned); the eastern and southern counties, including Cambridge, Surrey, and Sussex, also had coarse wool (a hint of the black-faced, horned type). The rest of England, from Hampshire through the midlands to Yorkshire, presumably produced finer wool.

The ordinance of 1454 is the most complete list, containing fifty grades. In both this and the 1343 list the most highly priced, and presumably therefore the finest, wool came from the Welsh border counties, and in 1454 the finest of all came from around Leominster in Herefordshire (6d. per lb. in 1454). Much has been written about the famous Lemster Ore "that with the silkworm's thread for smallness does compare," and this fineness may have been partly due to sparse pasture, but the existence of fine wool in the Middle Ages has been confirmed by examinations of parchments (Table II and see below). Considering all the evidence now available, it seems very likely that the Leominster wool was produced by the ancestor of the Hereford (now known as the Ryeland). But, as Mr Trow-Smith points out, Hereford pro-

¹ R. A. Pelham in H. C. Darby (ed.), *An Historical Geography of England before 1800*, Cambridge, 1948.

duced other wool that did not fetch such a high price, and other counties, too, produced more than one grade of wool. Captain Sir Hugh Rhys Rankin and Mr Trow-Smith hint that the coarser-woolled sheep of Hereford might have been a primitive long-wool.¹ The next highest in the 1454 price list were the Cotswold and Lincoln wools. Lincoln or Lindsey sheep, as they were then named, are mentioned as early as the beginning of the thirteenth century,² when they were being taken into Wiltshire. Could this movement have been the origin of the Bampton Longwool of Somerset which was probably the forerunner of the Devon Longwool? The Lincoln was also being taken into Yorkshire, which suggests that Henry Best could have had long-wools in the seventeenth century, and this may have been the origin of the Teeswater. The high price of Cotswold and Lincoln wools almost certainly means that they were much finer, and no doubt shorter, than the wool of these breeds is today. Canterbury wool (Kent and Sussex Marsh) was on the other hand relatively low in price. This "breed" was named as early as the thirteenth century, and there are records of Canterbury fleeces being exported from Staffordshire and Nottinghamshire. This suggests a link between the Midland Longwool and the possible forerunner of the Romney. The only other "breed" that seems to have been mentioned by name was the Welsh Mountain, which already in the fourteenth century was an improved type distinct from a primitive sheep known as the Cardy.

Microscopic examinations of parchment have provided incontrovertible evidence of the reputed fineness of much medieval wool. Although the source of most parchments was known, too few have yet been examined to indicate the distribution of different types. Such a study would involve the assumption that the parchment was made near the place in which the document was written, but this may not always have been so. Certainly as early as the eighteenth century there is evidence that parchments were not necessarily made locally. A parchment from Spain dated 1163 was from a coarse-woolled (hairy) sheep, i.e. it had a fleece type like that of the black-faced horned group, with hairs and fine, woolly fibres. Such a fleece type is often kempy, too, and as it is almost impossible to remove the coarse fibres, such wool today is mainly used in carpets, although the finer grades are used to make tweeds. The earliest English parchment that I have so far been able to examine (Table II) was dated 1193, and this had wool root remains of medium diameter. When the medieval parchments were examined originally, the possibility of a wide range of diameter within a medium-wool was not realized. Thus parchments having fibres less than 18 microns in diameter³

¹ AHR VII, 1959, p. 26. See Table III, c. 1350.

² R. Trow-Smith, *op. cit.*

³ One micron (μ) = 1 thousandth of a mm.

were described as fine, and parchments with fibres from 18 to 35 microns were described as fine to medium. Today little Merino wool has an average diameter of less than 20 microns (70's quality) and no British wool has an average diameter of less than 25 microns (60's quality). Parchments in these fine and fine-to-medium categories predominated in the Middle Ages (Table II), although medium-woolled and hairy types were found too. The diameter of wool described as fine ranged down to 7 microns, and it is possible that some parchments with fibres around 10 microns in diameter came from young or starved animals. It is now realized that, owing to the fragmentary nature of many of the parchments, those described as fine, fine-to-medium, and some of those described as medium could have all come from the same generalized medium-woolled type, with a wide range of fibre diameter, from about 10 to 50 microns, like that of the Near East. Wool from this was like a blend of 70-74's Merino with 15-20 per cent of coarser, 50-56's quality. But Romano-British textiles showed that this type had already given rise to the fleece type with a diameter range (18-35 microns) of the short-wool (Ryeland) now found widely in the down types, and to the diameter range of the long-wool (30-50 microns). Examination of more specimens of medieval wool that are available from textiles would add to this knowledge. Some wool from a burial dated about the thirteenth century at Thetford Priory, Norfolk, had a range of fibre diameter from 15 to 30 microns and some of the fibres were pigmented. This suggests a medium-woolled sheep possibly with Soay blood and not a hairy type as claimed by the authors.¹ The fifteenth-century Hungate boat found in York was caulked with fine wool fibres (finer than 60's quality).² Parchments with medium wool became more common in the sixteenth century and predominated after that time. In fact, the medium parchments of the eighteenth century (almost certainly long wools) had fibres approaching 60 microns in diameter; such coarse fibres are infrequent in long-wools today.

The long, lustrous fleeces of the modern long-wools are so different from those of other breeds that there has been much speculation on how they originated. The fact that the Cotswold and Lincoln sheep emerged into history as long-wools in areas noted for Roman sheep farming led Mr Trow-Smith to suggest that the long-wools might have been introduced by the Romans. Such an ancestry is supported by evidence presented above. But whether a true long-wool had emerged before the Middle Ages is not clear. No illustration of a long-woolled fleece has been found (Table III), and their wool was almost certainly not as long and coarse in the Middle Ages as it is

¹ H. B. Carter and A. S. Henshall in *Medieval Archaeology*, 1, 1957, pp. 102-3.

² L. Biek, personal communication.

now; the fleece may have been about the same length as that of the Romney, which is today intermediate in length between that of the short-woolled down breeds, and the lustre long-wools (Leicester etc., Table I), and can perhaps be regarded as a primitive long-wool. The medieval parchments with medium and fine-to-medium wool could have been from a primitive long-wool like this.

The occurrence of a hairy and horned variant in the New Zealand Romney, which is due to a gene known as the N-type, has led to the suggestion that the long-wool evolved from a hairy fleece type. It now seems more likely that the long-wools and short-wools evolved from a common ancestor—the medium-wool type with medium and fine fibres. But whether this ancestor had potential long-wools that only expressed this potentiality in the right environment is not clear. It has often been said that in earlier times sheep were closely associated with particular districts, and that their isolation and lack of movement allowed the different regional types to evolve. For instance, the Romney has a superficial resemblance to the Southdown on the hills nearby, and this leads to the speculation that the two may have arisen from a common ancestor by a process of natural selection in widely differing environments, the lush feeding of the Romney Marshes having allowed a larger sheep with coarser and longer wool to evolve. But one must bear in mind that factors such as close in-breeding in isolation, and occasional wide out-crosses, together with intentional and unintentional genetic and environmental changes by man, almost certainly contributed more than the environment alone to such divergence of types.¹ Although sheep may have been isolated in certain parts of the country, there is evidence of surprisingly large movements in medieval times.

Alternatively, since the constant expression of a character (canalization²) can be upset by the introduction into the population of different hereditary factors, a lustrous long-wool may have come in with non-lustrous polled stock introduced at any time from the Roman period to the Middle Ages. A horned long-wool seems inconceivable today, but according to Youatt, the Romney was horned as late as 1750 (it sometimes has scurs today) and he said that the other long-wools were horned in the Middle Ages, but his evidence for this is doubtful. However, the genetic character causing lack of horns in the Merino and the Dorset Horn is not associated with long wool. But it does seem that the great length and lustre of modern long wool owe much to a mutant, with or without a genetic association with the lack of horns. That

¹ I am indebted to Mr M. R. Patchell, Senior Lecturer in Animal Breeding at New England University, for stressing this point to me.

² A. S. Fraser, *The Australian Scientist*, 1, 1961, pp. 35-42.

such a mutant is possible is shown by the recent appearance of a lustre mutant in the Australian Merino.¹

Mr Trow-Smith considers that the great wool-producing abbeys must have helped in the introduction of sheep into new districts: in particular the introduction by the Cistercians of improved sheep into the north. He mentions a record of 1323 of sheep being taken from East Anglia to restock royal manors in the north. This suggests a link between the northern black-faced sheep and the Norfolk stock. Mr Trow-Smith considers that this might have been the time when the forerunner of the northern black-faced breeds acquired their Argali-like horns. This wide-spreading type of horn is distinct from the more tightly curled horns of the white-faced horned group. But I cannot agree with him that the horns of the northern black-faced sheep differ from those of the Norfolk. It has been mentioned that these sheep may have arrived, at any rate temporarily, as early as the Bronze Age, but the fact that they are found in areas of England occupied by the Danes before the Norman Conquest has led several authors to suggest that the Danes brought them.² This does not invalidate the earlier suggestion that the Norsemen brought the ancestor of the Herdwick, as it is known that the Vikings occupying different parts of Britain came from different parts of Scandinavia. There is a strong suggestion of Asiatic origin in the horn shape and black face—many modern Asiatic breeds have black faces. An introduction by the Danes is in keeping with the suggestion of Associate-Professor Evans that the black-faced group reached Britain from Asia via northern Europe, whereas the white-faced (hornless) group followed a route further south.³ One might argue that just as the Romans tended to push the indigenous sheep to the west and north, the Danes tended to push the Roman sheep to the west and south. Thus the Hereford and Cotswold are found in the west, the Romney in the south-east, and the Southdown between may have received some black-faced blood.

It seems unlikely that this black-faced stock came as late as the Middle Ages, as Mr Trow-Smith suggests. The hairy sheep found in the medieval parchments, such as that dated 1403, appeared most like the black-faced horned group. But it is noteworthy that as yet no illustrations of a black-faced sheep have been found before the eighteenth century. Although medieval records of importation have been found, the statement in the chronicles of St Albans Abbey, that sheep scab in 1274 was brought in by imported Spanish sheep, supports the suggestion of importation at that time. The mention of Spanish sheep suggests the Merino, and it is possible that some British sheep

¹ B. F. Short, *Nature*, CLXXXI, 1958, p. 1414.

² Sir Alfred E. Pease, in *J. Yorks. Agric. Soc.*, 1930.

³ Personal communication.

acquired Merino blood at this time. And this might explain the extreme fineness of some of the medieval textiles. Mr Trow-Smith goes so far as to suggest that the black-faced stock may have obtained its horn shape from the Merino at this time. The extreme difference in fleece type between them makes this extremely unlikely; it is more probable that the ancestors of the Blackface and Merino acquired this horn shape before they left the Near East.

SUMMARY AND CONCLUSIONS

(1) There is little clear evidence on the type of sheep kept in Britain during prehistoric times. But it seems very likely that, at least during the later period of prehistory, the main sheep was the horned, brown, woolly Soay, or a sheep akin to it.

(2) The next type of sheep to arrive in Britain was probably white-faced, and mainly hornless. It seems likely that this came with the Romans. Crosses of these sheep with the indigenous Soay could have given rise to the white- or tan-faced horned type of sheep, the breeds of which are still associated with Scotland and the western parts of Britain.

(3) This hornless white-face was probably associated with the Merino of the continent, and could, on its own, have given rise, first, to the medieval short-wool, now probably represented by the Ryeland breed, and second, to the medieval long-wool that may have been like the modern Romney.

(4) The third main stock to arrive was black-faced, horned, and hairy. These sheep seem to have an Asiatic origin, and the fact that this type of sheep emerged into recent history in the north and east of England, areas occupied by the Danes, suggests that the Danes brought them. This type seems to have influenced the Southdown, the ancestor of the other modern down breeds. On its own it gave rise to the black-faced breeds of the Pennines and the Scottish Blackface.

(5) Medieval and later illustrations show mostly white-faced short-wools. Wool fibres remaining in parchments indicate a predominance of fine (probably short) wools in the Middle Ages, a coarsening of the wool during the sixteenth and seventeenth centuries, and a predominance of medium wools (long-wools) during the eighteenth. This was when the long-wools were replacing the short and fine-fleeced Ryeland, the eclipse of which became complete with the rise of the modern down breeds in the nineteenth century.

Agrarian History: Some Vistas and Pitfalls¹

By REGINALD LENNARD

PEOPLE unacquainted with agrarian history probably think that we who study it are engaged upon very humdrum tasks. They envisage us, I imagine, as plodding both literally and metaphorically over flat and rather muddy fields, where we avoid the perils of the mountaineer, but are never blest with far-reaching views. They may even suspect that it is almost as hard for us to attain wisdom as the author of Ecclesiasticus thought it was for him "that holdeth the plough—and whose talk is of bullocks."

How different is the reality! We make our way in fact—if now I may speak altogether metaphorically—on narrow mountain paths that are beset with pitfalls, but reveal to our eyes the most entrancing scenes of distant country. One wonders indeed whether any other kind of knowledge can open up a more splendid vista of thought than is provided—to take the most obvious example—by the simple reflection that such tremendous human achievements as the cathedrals of the middle ages, the books that fill our great libraries, our orchestras and operas, the multitude of motor cars, and that most hideous of modern inventions the nation in arms maintaining the conflict of war for years on end, all depend upon the degree to which the men who till the soil and tend the livestock are able to produce food over and above what they require for their own sustenance. Perhaps only those who know how small the surplus was in the middle ages can fully appreciate the strength of the religious devotion and the will to beauty which we find reflected in the architectural glories of the twelfth and thirteenth centuries. In the simple words of an old French *chanson*,

Il n'est ni roi ni prince
Ni ducque, ni seigneur
Qui n'vive de la peine
Du pauvre laboureur.

It is not, however, of the importance of our studies, nor of their interest, that I wish to speak this morning, but of certain perils that we are liable to encounter—various ways in which pitfalls in our path may cause us to

¹ This paper was read to the December Conference of the British Agricultural History Society, 1963.

stumble in our search for truth and others in which the dazzling fascinations of distant horizons may blind us to some aspects of it, so that our account of what we learn becomes one-sided and incomplete. If some of my examples are taken from the writings of really great historians, that is not because I am wanting in reverence or gratitude for their work, but because the slips of great men are particularly instructive and provide the most powerful incentives both to carefulness and to modesty.

The Concise Oxford Dictionary tells me that one of the meanings of the word *vista* is "a long narrow view as between rows of trees"; and we know that a vista of that kind reveals some things but conceals others. The poet Yeats once said of Shakespeare's Hamlet that "he saw too great issues everywhere to play the trivial game of life." I am reminded of that when I think of the way in which attention to the greater vistas of history may prevent us from perceiving the trivial bearing of some of the facts recorded in agrarian documents.

For example we look down the vista which shows us the gradual displacement of modes of 'Natural Economy'—*Naturalwirtschaft* as the Germans call it—by 'Money Economy' (*Geldwirtschaft*), and we rightly recognize that process in the commutation of labour services on the manors of medieval England. Then perhaps we take a hasty glance at one of the early twelfth-century surveys of Burton Abbey and when we find there several cases of tenants owing a money rent instead of the services they had previously owed, we may be tempted to take this as showing that the great movement of commutation had begun very early on these estates. But, if we read on, we also find in the same survey, and on the very same manors, men who had formerly held land for a money rent which they now hold *ad opus*. It looks too as if the money rents on these estates tended to be paid by people with special occupations. At Stretton in Staffordshire a man named Ernwi holds for works land which William the Cook used to hold for a money rent, while Orm the smith pays twelve pence—or does the repairs of two ploughs—for a small holding for which his predecessor had owed works.¹ From a different part of the country we receive another warning against the possible delusiveness of the commutation vista, for in the same period to which the Burton surveys belong a certain Herbert of Gatindene gave to the church of Rochester "all his tithe *or* forty pence *or* their value in eels."²

Another type of economic vista is that which reveals some wide-ranging change such as rising prices and shows us clearly enough the general char-

¹ *Collections for a History of Staffordshire*, Wm. Salt. Soc., 1918 for 1916, pp. 219, 221, 230, 242.

² *Textus Roffensis*, ed. Hearne, 1720, pp. 176-7.

acter of its effect, say upon the prospects of the small farmer, but leads us to overlook the various personal factors which modify its action in individual cases, so that what is a disaster for many may come as an opportunity for profitable expansion to the man who has good health, an industrious wife, and a large family of sons.

Some of the vistas which are liable to entrance and mislead us are not primarily economic. And the peril of these can be illustrated from the work of a great pioneer in agrarian history, whose memory we all cherish—my old friend and one-time colleague in the Workers Educational Association, Professor Tawney. Tawney was nothing if not a man of vision. He was profoundly influenced by his awareness of great moral and religious issues and I think there can be little doubt that his concentration upon such issues somewhat distorted the perspectives of the historical picture painted in his famous book, *The Agrarian Problem of the Sixteenth Century*—which, we should remember, was written when he was little more than thirty years of age. He seems to have approached his subject in the light of a general conception of the sixteenth century as an age which witnessed a fundamental change in human beliefs and standards of behaviour. Protestantism, Individualism, and Capitalism were taking the place of the religious, moral, and economic standards of the middle ages. Now the Tudor governments were certainly the first to recognize depopulating enclosures as a problem calling for drastic action, but Tawney writes as if the problem itself was virtually a new one in that age. He speaks more than once of “the agrarian *revolution* of the sixteenth century,” and though he quotes Hales’s assertion that “the chief destruction of Townes and decaye of houses was before the beginning of the reigne of Kynge Henry the Seventh,” he describes it as a “strange statement” and says “it may well have been a curt summary of the impression produced by a century of gradual consolidation and piecemeal enclosures carried out by the smaller cultivators.”¹ Tawney was admirably scrupulous in reporting any facts he had observed which made against his general conception. He quotes what Sir Thomas More said about enclosing abbots. He notes that no prominent ecclesiastic appears to have made any protest before the Reformation comparable to that made by the Protestant Latimer afterwards. But he evidently thought such facts could be explained without altering the general perspectives of the history. “Cobbett,” he says, “and those who follow Cobbett in representing the economic evils of the sixteenth century as the fruit of the religious changes, err in linking as parent and child movements which were rather brother and sister, twin aspects of the individualism which seems inseparable from any swift increase in

¹ R. H. Tawney, *The Agrarian Problem of the Sixteenth Century*, 1912, pp. 15, 402, 166-7.

riches.”¹ I don’t suppose Tawney intended the chronological implications of the word “twin” to be taken quite literally, but he certainly regarded the agrarian and religious changes as roughly contemporaneous manifestations of a new individualist spirit.

Some of us have always felt dissatisfied with this view. Nearly fifty years ago Lipson, though ludicrously sceptical about the assertions of John Rous, repudiated Tawney’s attempt to explain away the precise statement of Hales and called attention to some early fifteenth-century evidence which tended to support it.² More recently the researches of Dr Hoskins and Professor Beresford have made it pretty certain that Tawney’s chronology was radically wrong. In Beresford’s judgement the evidence “points to a period between 1440 and 1520 as that in which the main flood of depopulation took place.”³

Even if it was only in the middle of the fifteenth century that a real movement of enclosure for sheep-farming got under way, that is far too early for the hypothesis of a fraternal relation between that movement and the Reformation to be at all acceptable. But further, while Tawney was thus misled by the fascinations of his ethical vista, his history was also distorted by the fact that his chronological vista was much too short. More than once he told me in conversation that “he didn’t know a thing” about the Middle Ages. That of course was excessive modesty. But he could hardly have written as he did if he had been aware of certain hard facts of medieval history. It may be that the actions which caused suffering among the peasants in the twelfth and thirteenth centuries were caused mainly by encroachments upon their common pastures rather than by the conversion of arable to grass, but after all the enclosure of common pastures was one of the things complained of in the sixteenth century, and Tawney was primarily interested not in the technical aspects of change, but in the oppression of humble folk by high-handed and self-seeking actions on the part of the rich and powerful. And the medieval evidence is remarkable. Tawney would have been surprised, I think, if he had known that the words of Ovid which were adapted towards the end of the sixteenth century by an anti-enclosure poet in the line “The grasse grows greene where litle Troy did stand” had actually been quoted in the twelfth century by Walter Map in his diatribe against the Cistercians and their clearances—*Nunc seges est ubi Troia fuit*.⁴ No doubt the word *seges* was understood by Map as meaning corn, not grass. But of course there was

¹ *Ibid.*, p. 382. ² E. Lipson, *Economic History of England: The Middle Ages*, 1915, pp. 125–7.

³ M. Beresford, *The Lost Villages of England*, 1954, p. 166.

⁴ Tawney and Power, *Tudor Economic Documents*, III, p. 80; Walter Map, *De Nugis Curialium*, ed. M. R. James, *Anecdota Oxoniensia* (Medieval and Modern Series), XIV, p. 45.

plenty of large-scale sheep-farming in the middle ages. The abbey of Ely had some 9,000 sheep on its demesne farms in 1086; the central flock of the abbey of Crowland numbered more than 8,000 in 1314; between 1284 and 1306 an abbot of Gloucester increased the abbey's sheep until they numbered 10,000 and he was able to sell 46 sacks of wool in a single year.¹

I mustn't weary you with details; but I doubt if the weight of the medieval evidence is generally appreciated. Before the end of the twelfth century we read of peasants being uprooted not only at Revesby in Lincolnshire, but at Bruern in Oxfordshire, at Accrington in Lancashire, and at Witham in Somerset. At Revesby and at Witham they were certainly offered holdings elsewhere, but a majority at Revesby and some of those at Witham chose the alternative of freedom. At Accrington the reaction was violent: the grange which the Abbot of Kirkstall had erected was burnt down and the *conversi* were murdered. Half a century later there was further trouble there, nine men having thrown down a hedge which they said had deprived them of their pasture rights.²

In 1222 Pope Honorius III ordered an enquiry into the conduct of the monks of Holm Cultram in Cumberland because the bishop of Glasgow had complained that they had "usurped parochial churches in his diocese and made them into granges and chapels, expelling the clergy and the tenantry." In 1246 the four sons of the parson of Blackburn in Lancashire were charged with burning a Cistercian grange at Staining, and the state of popular feeling is shown by the fact that forty other persons were accused of sheltering them after they had done this. In 1254 fifty-seven people threw down the enclosure at Wilden Grange and a crowd about eighty strong combined to destroy that at Fawdington Grange. That was in Yorkshire: both places were granges of Byland Abbey. Then in 1284 Archbishop Peckham wrote to the king urging that a Cistercian abbey which it was proposed to plant in the diocese of St Asaph, where there were already four such abbeys, should instead be established in the diocese of Bangor, in which there was no Cistercian house. Peckham told the king that the bishop of St Asaph and his chapter and the parson of the place which was suggested as a site for the abbey, and many other persons too, viewed the threatened advent of the white monks with

¹ E. Miller: *The Abbey and Bishopric of Ely*, 1951, p. 41; F. M. Page in *Economic History* (Supplement to *Economic Journal*), 1920, p. 611; *Hist. et Cart. Monasterii Gloucestriae*, Rolls Series, I, p. 39.

² Foundation Charter of Revesby in *Facsimiles of Early Charters*, Northants Record Soc., 1930, ed. Stenton, pp. 2-4; *Decretales Gregorii IX* lib. 3, tit. 30 c. 3 (in *Corpus Juris Canonici*, ed. Friedberg, II, cols 556-7); *Monasticon Anglicanum*, v, pp. 528, 531; Whitaker, *History of Whalley* (4th edition), II, p. 286; *Coucher Book of Kirkstall*, Thoresby Soc., 1896, p. 21; *Magna Vita S. Hugonis*, Rolls Series, pp. 68-70.

horror, for, good men though they may be, they are "the hardest neighbours that prelates and parsons could have" because where they set foot "they destroy villages" and take away tithes.¹

The sense of grievance was by no means confined to monastic enclosures. A meadow at Somersham in Huntingdonshire is said to have been "unjustly" enclosed some time between 1216-30. This deprived the abbey of Ramsey and its tenants of common pasture—the offender being apparently the bishop of Ely. In 1221 nineteen men were charged with casting down a bank at Yardley in Worcestershire which they said impaired their common rights. The bank had been made by a certain Thomas of Swanhurst. A few years later, at Nottingham, five men—one of them a reeve—were charged with illegally destroying a bank at a place called *Pesenhall*, which I have not been able to identify. Apparently this bank had been made by one William, son of Osbert, and the accused were acquitted because their common rights were injured by it. Then in 1258 or 1259 a court of law ordered that an enclosure of thirty acres which the bishop-elect of Winchester had made at or near Baughurst in Hampshire should be thrown down because it did not leave the plaintiff sufficient pasture. No doubt this decision was taken in accordance with the Statute of Merton, but that, we must remember, only protected free tenants; and from the last decade of the century we read of concerted attacks upon enclosures that had seemingly been made by laymen at Dillworth and Chipping in Lancashire and at Lydlinch in Dorset.² Even more significant as incidental evidence, both of the extent of the enclosure movement and of popular opposition to it, are the words of the statute known as Westminster II which was enacted in 1285. "And since," we read, "it sometimes happens that one having the right to approve has raised a bank or hedge, and some persons by night or at some other time when they do not think their deed will be known, have thrown down the bank or hedge and it cannot be known, by verdict of the assize or jury, who threw down the bank or hedge, *and the men of the neighbouring townships are not willing to indict those guilty of such a deed*, the townships near adjoining shall be distrained to raise the bank or hedge at their own expense and make good the loss."³

¹ *Register and Records of Holm Cultram*, Cumberland and Westmorland Antiquarian Soc. (Record Series) 1929, pp. 53-4; *Lancashire Assize Rolls*, Lancs. and Cheshire Record Soc., XLVII, pp. 91-4 and XLIX, p. 282; *Yorkshire Inquisitions*, Yorks. Archaeological and Topographical Assoc., Record Series, 1892 for 1891, I, pp. 38-40; *Registrum Ep. J. Peckham*, Rolls Series, II, pp. 726-7, 769-70.

² *Cartularium Monasterii de Rameseia*, Rolls Series, I, p. 283; *Rolls of the Justices in Eyre*, Selden Soc., 53, No. 928; *Placitorum Abbreviatio*, p. 103, col. 1; Whitaker, *History of Whalley*, II, p. 468; *Dorset Inquisitiones Post Mortem*, ed. E. A. Fry, 1916, p. 59.

³ Stat. Westminster II, c. 46.

One can think too of other non-economic vistas which have misled or are liable to mislead agrarian historians. There is what one might call the 'racial vista', which, for example, deluded Meitzen into supposing that the *Einzelhof*, or isolated settlement, is almost everywhere a Celtic characteristic in contrast to the nucleated village which he took to be Germanic. Meitzen appears to ignore the influence of geographical and topographical factors upon the form of settlement; and in Westphalia, where he judged the prevalence of scattered homesteads to be a survival of Celtic tradition, he was led to an imaginary and very fanciful reconstruction of the history as a means of explaining the nucleated villages of a particular district—the *Hellweg*—where a comparatively level terrain seems the obvious reason for their presence. He also overlooked the evidence which, there and elsewhere, often shows that the isolated farmsteads are comparatively modern creations.¹ More recently, I am inclined to think that Mr Jolliffe, in arguing for widespread Jutish influence in parts of southern England, is a little prone to take as marks of racial, or rather tribal, peculiarity customs which are more readily explicable as a response to the prevalence of woodland.²

The geographical vista can also prove delusively fascinating. Gonner, for example, exaggerated the geographical factor in the chronological development of enclosures in this country.³ Certainly, historians, faced with the unchanging conditions of physical geography, can easily pay too little attention to the various circumstances that make them potent in some places or in certain periods, but nullify their influence in others. The issue is over-simplified if we take market prices as the only other factor to be considered. Prices and soil conditions may favour enclosure in two adjoining villages; but in one of them it may come quickly because all the land belongs to a single landlord who is an enterprising man and can afford the initial expense of the change, while in the other it may be delayed through the failure of several landlords to reach agreement. Again, to take a medieval example, in a district suitable for wool production, specialization in sheep-farming may be possible, to a certain degree, for a manorial lord who possesses other manors suitable for corn-growing, but not for the lord of a single manor. In general, difficulties of transport in the middle ages prevented much differentiation of agricultural practice in accordance with differences of soil and climate. Fundamentally too we must remember that at all times it is not geographical

¹ Dopsch, *Grundlagen der Europäischen Kulturentwicklung*, Second Edition, 1923, I, pp. 290–2; cf. Vinogradoff, *Growth of the Manor*, 1905, pp. 16 and 91 note 20.

² J. E. A. Jolliffe, *Pre-Feudal England: The Jutes*, 1933, *passim*.

³ E. C. K. Gonner, *Common Land and Inclosure*, 1912, *passim*: cf. Vinogradoff's criticism in *Oxford Studies in Social and Legal History*, v, 1916, p. vii.

conditions which affect the use to which land is put, but man's knowledge of the opportunities they present and his ability to take advantage of them. The same applies to the vista of general movements of prices and their effect upon, say, the decision of a manorial lord to let his demesne on lease. Such decisions depend not upon the actual movements of prices but upon the degree to which contemporaries are aware of them. As Professor Duby points out, an agricultural employer in the middle ages would be immediately conscious of a rise in wage-rates, but is not very likely to perceive a general trend in grain prices, because under medieval conditions those prices vary so much from month to month and from place to place.¹

But I must leave the subject of vistas and consider the pitfalls, though I confess that my metaphors are getting a little mixed and that the distinction between them is becoming rather blurred. However, the pitfalls do seem divisible into fairly definite classes.

There is first the danger of not appreciating to the full the limited relevance of many agrarian records or of failing to give sufficient consideration to the circumstances of their appearance. Duby makes the suggestive observation that early medieval inventories like the *Polyptiques* of the Carolingian age only include the holdings of such peasants as were dependent upon the landlord whose estates were being surveyed, and that there may well have been others who were independent and of whom we know nothing.² When, again, we read of rad-knights or riding-men in Domesday, we should do wrong if we supposed that that was all they were. In that admirable book, Professor and Mrs Gras's monograph on the village of Crawley in Hampshire, there is a curious slip which sprang from failure to appreciate the exact scope of a medieval manorial account. We are told that at Crawley the lord—who was the bishop of Winchester—"paid no tithes on grain but he did on cattle, sheep, swine, wool, and cheese."³ Of course the fact is that tithe sheaves were taken in the field, and that the reeves' account only deals with the remaining nine-tenths of the grain, but naturally mentions the tithe on the animal products because it was he who made the payment in their case. To take a more important example, there can be little doubt, I think, that the sudden appearance of an eloquent literature of complaint about depopulating enclosures in the early Tudor age has been wrongly taken as an indication that the evil was a new one at that time. Historians

¹ Georges Duby, *L'Economie Rurale et la Vie des Campagnes dans l'Occident Médiéval*, Paris, 1962, pp. 584-5.

² *Ibid.*, p. 91.

³ N. and E. Gras, *The Economic and Social History of an English Village*, Harvard Economic Studies, 1930, p. 206.

have overlooked the fact that there was little opportunity for successful pamphleteering until printing presses became more frequent and a strong Tudor government able to take action was in power. John Rous's early invective remained in manuscript. True, there is a footnote in Tawney's book referring to these very points; but I hope I shall not be committing an indiscretion if I reveal the fact that that footnote was not in the original draft of the book, but was inserted after I had read that draft and raised these very matters as objections to Tawney's argument.¹ I don't think he ever gave them as much weight as I believe they deserve. To take another point, what seems a perfectly plain statement in a medieval document may conceal a hidden trap. This is well illustrated by the account rolls of Crawley. These accounts contain a section headed *Defectus* and there record rents for which the reeve was not answerable, because for some reason they had ceased to be payable. In the year 1448-9 this section begins *In defectu redditus (terre) Willelmi le Straunge tracte in dominicum per annum duo solidi*. Two shillings rent are not chargeable to the reeve because Le Straunge's land has been incorporated in the demesne. Several cases of the same kind follow. One is at once interested and rather surprised to find the demesne being increased in the middle of the fifteenth century. But then one turns to the roll for 1356-7, and, behold, the same facts are repeated there. Now 1356 is only a few years after the Black Death, so it looks as if that was the explanation. These people were surely victims of the pestilence, for whose holdings no fresh tenants had been found. But before we jump to that conclusion, we turn back another century to the account for 1256-7, and there we find that the lands of these men—three of them—had already been taken into the demesne. In fact an allowance of rent because Strong's land had been thus absorbed is recorded in the earliest roll of all—that for 1208-9. There is a slight difference in the spelling of Strong's name, but the rent—two shillings—is the same. What is reported in the middle of the fifteenth century as if it were a recent event had in fact happened at least 240 years earlier. If the earlier rolls had not been preserved we might have come to some very wrong conclusions.²

Secondly, linguistic pitfalls have caused many to stumble. Those who have perceived the fantastic character of many of his statistical assumptions will not be surprised that Professor J. C. Russell was beaten by what I used to tell pupils was the 'fool's mate' of Domesday studies. He quotes the famous instructions to the Domesday commissioners with its words *quot carrucae in dominio, quot hominum*, but overlooks the genitive case of *hominum* and its contrast to the nominative of the following words *quot villani*, and so

¹ *Op. cit.*, p. 166 footnote; cf. Beresford, *op. cit.*, p. 150.

² N. and E. Gras, *op. cit.*, pp. 476, 278, 214, 188.

translates *quot hominum* as "How many men."¹ More shocking is the way in which two good historians—Mr Bennett, and Kosminsky—have, with serious consequences, misinterpreted a passage in the Hundred Rolls through a simple failure to appreciate the sense of a reflexive pronoun. The passage in question is one which tells us that at Chalgrove in Oxfordshire a villein named William—the typical villein whose services are described in detail—must present his sons at the manorial court and can there choose one of them *ut sibi serviat* while the others may serve the lord, if the lord wants them and they are willing. Both Bennett and Kosminsky say that the chosen son had to serve not his father, but the lord. The error is made still worse by Duby who says that the lord did the choosing.² It is, however, only fair to the memory of a distinguished historian to add that, when Kosminsky saw a review in which I called attention to his error on this matter, he wrote to me from Moscow and said, "I thank you very much for noticing my mistakes. Your observations are quite just and I shall profit by them." To take another case, my own revered master, Vinogradoff—of whom it was said *In vino veritas*—made linguistic mistakes about two entries in Domesday Book. The first is a real howler. Domesday tells us that there were 61 villages dependent upon Preston in Lancashire and goes on to say: *Ex his xvi a paucis incoluntur* and that the rest are waste. Vinogradoff actually took the preposition *a* to be an abbreviation of the word *acrae* and asserted that "only sixteen acres were still cultivated."³ His other mistake is very pardonable. He failed to perceive that Domesday in its account of Leominster uses the word *dominium* in two distinct senses—on the one hand for the manorial demesne or home farm, and on the other hand for the whole manor less the subinfeudated portions of it. The arithmetic involved makes this quite certain.⁴ A further example is provided by the late Miss Neilson. In her introduction to the Terrier of Fleet she discussed an action which was brought in 1295 by the prior of Spalding against some men who had destroyed an enclosure that he had made in the fen, and she says "the defendants claimed that the prior had enclosed as much as 2000 acres." But if you look at the Latin text you will see she had failed to notice that the critical verbs are in the subjunctive mood. It was in fact only asserted that the prior had enclosed about a hundred acres; but the defendants contended that this was more than he

¹ J. C. Russell, *British Medieval Population*, University of New Mexico Press, 1948, p. 36.

² *Rotuli Hundredorum*, II, p. 768; H. S. Bennett, *Life on the English Manor*, 1937, p. 184; E. A. Kosminsky, *Studies in the Agrarian History of England*, ed. R. H. Hilton, 1956, pp. 292-3; Duby, *op. cit.*, p. 448.

³ Vinogradoff, *English Society in the Eleventh Century*, 1908, p. 295.

⁴ *Ibid.*, pp. 313-14; cf. *Econ. Hist. Rev.*, Second Series, vii, 1954, pp. 67 *et seq.*

needed for drying the peat he had an undisputed right to dig, and that, if he could thus enclose more than that at his pleasure, it would follow that he *could* enclose a thousand or two thousand acres.¹ Apart from actual misunderstandings, inexact translation is a real pitfall. Duby, in translating a charter of Offa the king of Mercia—or rather Miss Whitelock's English translation of it—renders the 'hides' of her version (*manentes* in the original) as "*ménages de paysans*," which may be right, but implies an absence of manorial demesne in the lands granted, which the text does not really compel us to suppose.² Then I have seen *animalia* translated as "ploughing-oxen." Very likely they were that, but the word 'beasts' would have preserved the indefiniteness of the original. And to take *ociosa animalia* for ploughing oxen, as Professor Postan does in regard to a Glastonbury document, seems to be quite indefensible.³ Nor must one forget the trap in which inexperienced students sometimes get caught through using a dictionary of classical Latin, so that they are led to take *siligo* as meaning not rye, but 'fine white wheat'. It was not, however, a dictionary, but a wild guess, which led one student, in a thesis I once examined, to render *siligo* as silage! And I am tempted to cite one linguistic blunder which does not belong to agrarian history at all, because it has a rather comic flavour. In 1183 the archbishop of Canterbury in a letter summoned the proctors of the dean and chapter of Lichfield to meet him *ad viri Galilei* in Caen. The editor of the Register in which this occurs—himself a clerical dignitary—interpreted this as "at the sign of the Man of Galilee." It does not seem to have struck him as a bit odd that the archbishop should hold an important meeting in a pub or that the lack of any reference to a time of meeting would seem to imply that the primate was spending most of his time there. In fact, as Charles Johnson pointed out, *ad Viri Galilei* means 'on Ascension Day'—for the *Introit* for that day is "Ye men of Galilee, why stand ye gazing up to Heaven?"⁴

I suppose we are all sufficiently rural to avoid agricultural pitfalls. But one very distinguished historian managed to combine a linguistic and an agricultural howler by translating *jumenta et sequela eorum* as oxen and their offspring—or perhaps he said bullocks. I won't reveal the name of the writer who did that, for I've not been able to find the reference and my memory may deceive me. Then in the late H. E. Salter's edition of the Eynsham Cartulary

¹ N. Neilson, *A Terrier of Fleet*, British Academy Records of Social and Economic History, IV, 1920, pp. xxix, 164–5.

² Duby, *op. cit.*, p. 309.

³ *Econ. Hist. Rev.*, Second Series, v, p. 361; cf. VIII, p. 355, IX, pp. 106–7 footnote and p. 110 footnote 4.

⁴ *English Hist. Rev.*, XLII, 1927, p. 276, in a review of *The Great Register of Lichfield*, ed. H. E. Savage, Wm. Salt Soc. Collections, 1926 (for 1924), with reference to document 366.

the word *tramasium* is explained as 'corn cut green' though the document on which he is commenting describes it as measured in bushels and quarters.¹ Another agricultural blunder occurs in Professor Homans's admirable volume on *The English Villagers of the Thirteenth Century*. He is discussing different kinds of ploughs. He points out that the *araire*, in contrast to the *caruca*, can be drawn by a very small team—even a single ox or horse—and so "can be turned easily." But then he goes on to say, "Accordingly the *araire* is adapted to cross-plowing, first drawing the furrows in one direction and then at right angles across them, and so encouraged a régime of squarish fields." Evidently he didn't understand that cross-ploughing doesn't start until the first ploughing is completed!²

Finally, we have the treacherous pitfalls that attend the use of statistics. Blunders often occur through the employment of statistical methods where a little common sense would show them to be inapplicable. The most striking examples that I know are provided by a Frenchman and an American—the late André Déléage and Prof. J. C. Russell of the University of New Mexico. In his gigantic book upon the early agrarian history of Burgundy, Déléage makes an attempt to discover the area of some woodland on an estate in the Côte d'Or belonging to the cathedral of Autun—woodland which is described in a tenth-century survey as enough to fatten 2,000 pigs. He cites two entries in the early ninth-century *Polyptique* of St Germain des Prés, one of which mentions a wood 70 *bunuarua* in extent in which 100 pigs could be fattened, and the other four woods containing 12 *bunuarua* in all which would fatten 50 pigs. He then combines these figures—82 *bunuarua* feeding 150 pigs—and from that calculates the area of the woods which would feed 2,000 pigs in Burgundy. It is really ludicrous. The figures supplied by the *Polyptique* show that the pig-feeding capacity of some woods can be nearly three times as great in relation to their area as that of others. Yet Déléage assumes that woods are so nearly uniform in this matter that one can discover the size of other woods by taking the average of these two figures.³ In another part of his book the same author cites some evidence suggesting that twelve *bunuarua* was the customary size of the *mansus* or regular holding in Brabant. He then says one can recognize this 12-*bunuarua* holding in Hainault where some surveys reveal holdings whose average size was 12½ *bunuarua*. But the figures from which he obtains this average are 5, 7, 9, 15, 15, 16, and 20! Ob-

¹ *Oxford Historical Soc.*, 1907-8, I, p. 8, note 3.

² *Op. cit.*, Harvard Univ. Press, 1942, p. 43.

³ André Déléage, *La Vie Rurale en Bourgogne jusqu'au Début du Onzième Siècle*, Macon, 1941, p. 1212. The figure 10 in the sixth line is a misprint for 70, as is shown by the arithmetic: cf. the text of the *Polyptique* (ed. Longnon, 1886), p. 98.

viously an average of such radically different figures is quite without meaning.¹

I turn to the lamentable case of Professor J. C. Russell. Take first his amazing attempt to estimate the rural population, for the date of Domesday, in those northern counties which were not included in the Domesday survey. Multiplying the numbers he obtained from Ellis by 3·5 which he reckons to be the number of persons per household, he takes the average number of rural persons per square mile in the three counties of Cheshire, Lancashire, and Yorkshire taken together and impresses the careless reader by calculating this average to three places of decimals. He then applies this figure—3·928 per square mile—to each of the four unsurveyed counties, but throws in an imagined figure of a thousand persons for what he calls “the borough of Durham.” Ordinary common sense would suggest that devastated Yorkshire was not very suitable for inclusion in his sample, and that the very various physical geography of the four northern counties makes it extremely unlikely that the ratio of rural population to area was the same in each. But apart from all that, Russell has fallen into the same statistical trap that Déléage fell into in trying to estimate the area of woodland for a thousand swine in Burgundy. Russell reached his average figure of 3·928 by combining the figures for Cheshire, where the average was over seven, with those for Yorkshire and Lancashire taken together, which give an average less than half that of Cheshire. As the evidence of Domesday shows this large difference between the two areas, it is surely ridiculous to suggest that the average of their combined figures will give us a worth-while estimate of the population for each of the counties for which that evidence is not available. But Russell’s faith in averages has carried him to an even greater height of absurdity. On page 313 he gives a table showing what he takes to be the number of persons per square mile in 1086 in every county in England, and in this table he makes that number identical not only in the four northern counties but also in Lancashire, Yorkshire, and Cheshire, though that is in flat contradiction to the figures he has himself supplied from the Domesday evidence on page 53.²

Another example of Russell’s deplorable statistical methods is provided by his attempt to ascertain the proportion of the population that was omitted from the Domesday figures. He takes a sample of entries from each county and on this basis calculates the ratio of recorded population to hides or carucates in that county. Then, if there is any indication in a Domesday entry of the presence of unnumbered persons, he exhibits the difference between the

¹ *Ibid.*, p. 343 and p. 1093 for the figure 7 omitted from the text.

² *Op. cit.*, pp. 52-4, 312-13.

numbers that are recorded and those which would, on his reckoning, correspond to the hidation. It is hard to imagine anything more absurd than the assumption that there was in each county a constant ratio between hides or carucates and the population; and, in fact, of the ten cases he cites of entries that mention unnumbered persons additional to those recorded, there are two where his method provides a total considerably less than that actually recorded. Incidentally, the inadequacy of the elaborate sampling process he adopts seems to be indicated by the fact that he gives 3·5 as the average number of persons per hide in Cheshire and 4·2 as the figure for Bedfordshire, whereas if we take the total figures as reckoned by Maitland we find that the ratio was much higher in Cheshire than it was in Bedfordshire. One wonders why Russell did not choose plough-teams rather than assessment units for comparison with the numbers of recorded persons. Though there can have been no close correspondence between teams and population, the ratios between them are probably a good deal nearer to normality than those between the population figures and the hides, carucates, or sulungs. And at least the sharp contradictions that one finds between these two ratios in some cases is a further reason for distrusting calculations based on the latter. Russell gives 4·2 for the average number of persons per assessment unit in Bedfordshire and 2·3 as the corresponding figure for Middlesex. Maitland's figures for persons per plough-team are almost the exact opposite—4·2 for Middlesex and 2·8 for Bedfordshire.¹

The employment of Domesday statistics is certainly a tricky business demanding both common sense and critical acumen. But the later part of Russell's book seems to me even more misleading than the chapters concerned with Domesday material. I am thinking especially of those sections of it which are devoted to the expectation of life at different periods. I must confess at once that I have utterly failed to understand a good deal of what I read there. But if the statistical calculations are quite mystifying in their extreme elaboration, there can be no mistaking the fact that they are employed with an extraordinary lack of common sense. It is true that the difficulties of interpreting the material are often discussed at considerable length, but hypotheses and conjectures are generally forthcoming to brush them aside. And though the chief obstacle to research in this field is obviously the scantiness of the evidence and the fact that it is almost entirely limited to the upper classes of the population, the reader is hardly ever given any information about the number of cases comprised in the data for different periods. Moreover, though I am a mere layman in statistical science, the conclusions offered us seem to me to be in themselves sufficient to discredit the whole

¹ *Ibid.*, pp. 39-41; cf. Maitland, *Domesday Book and Beyond*, 1907 edn., pp. 400-3.

process of investigation by which they have been reached. For example, we are asked to believe that the expectation of life at birth was 31.08 years between 1276 and 1300 but only 20.21 years for those born between 1376 and 1400, and yet that a person who had attained thirty years had a slightly better expectation in the later period than in the earlier. Then we are told that "before 1276"—whatever that means—expectation at birth was 35.28 years, which is considerably better than the figures given for any subsequent medieval period.¹ Again, in spite of the fact that the tables containing these figures show large variations between the different periods of twenty-five years to which they relate, we are actually offered an elaborate table indicating what professes to be the expectation of life for the children of English kings, though this is based upon the history of the offspring of all the kings from the Conqueror to Henry VII.² Not only so. After some apology for the smallness of the evidence available—unaccompanied, however, by any information as to what in fact that evidence amounts to—Russell has thought it worth while to print a table of about a hundred figures designed to show the expectation of life in Roman Britain. From this it would appear that anyone born at any time during the four centuries of Roman rule would enjoy an expectation of life of 30.3 years and that anyone who during that period was fortunate enough to have attained an age of between 87 and 91 years could still look forward to a prospect of 2.5 more years of life.³

I am sorry to have worried you with so much detail in exposing the unreliable nature of Russell's book and I am sorry that I have felt obliged to pass such a severe judgement upon an author who has obviously spent a great deal of time and taken a vast amount of trouble in pursuing these investigations. But his book is the classic example of the pitfall presented by statistical ingenuity unchecked by common sense. Moreover it is itself an instance of a slightly different sort of pitfall. I mean the pitfall of taking for granted the conclusions of a writer if they are exhibited as the results of an impressive-looking mass of figures and diagrams which we find it difficult or even impossible to understand. I am shocked to find that Russell's book is often quoted as if it were authoritative, and am reminded of a remark made—I think in 1813—by Robert Hamilton in a criticism of governmental finance: "A complicated system may perplex and mislead, but it can never ameliorate."

In conclusion, just a word about one very simple statistical pitfall. There seems to be a tendency for young students and novices in research to employ

¹ *Ibid.*, p. 374. Tables 13.4 and 8.11. But I fail to see how these figures can be reconciled with those given in some of the other tables.

² *Ibid.*, pp. 178–80.

³ *Ibid.*, pp. 372–3.

the device of the *median* where it is inappropriate. The word 'median' sounds a bit *recherché* and high-brow and may seem more likely to impress examiners than the humdrum average. Of course there are cases where it can be a very useful means of exhibiting the significance of a series of numerical data—for example with stock exchange prices where you have a large number of transactions at prices differing only in a very slight degree from one another. But in some agrarian matters the median can be quite misleading. Take a simplified hypothetical case. Suppose one is investigating the scale of agricultural holdings in two villages, in each of which they fall into two nearly equal groups—say *nine* 30-acre holdings and *eleven* 5-acre holdings in the one and in the other *eleven* 30-acre holdings and *nine* 5-acre holdings. Obviously the tenurial conditions in these two villages are almost identical. But the median would indicate a sharp contrast between them—being five acres in the first case and thirty acres in the second.

I apologize for keeping you so long and still more for appearing before you in the disgusting role of a fault-finder. But the cause of truth must be served; and I'm afraid it's always easier to see—or think one sees—the motes in other people's eyes than the beam in one's own. But in this afternoon's discussion you will be able to redress the balance.

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Northumberland Field Systems

By R. A. BUTLIN

THE AGRARIAN history of the county of Northumberland has been the subject of much speculative enquiry, yet its main outlines are still unknown. Gray thought the county to be a "region which in regard to its settlement and field systems was transitional between Celtic and Midland areas."¹ Uhlig, in his study of the landscape of north-eastern England, states that "the former use of permanent arable land in small, long strips, and its location on the naturally best drained fields close to the settlement, whilst the outer fields remained a *Block-Flur* with a field-grass system, show striking similarities not only to the Scottish run-rig system, but also to the *Esch*, the strip infield of the oldest nuclei of the North Western German villages."² The Orwins were satisfied that "in the Middle Ages the system (open-field) prevailed all over Northumberland, except in the moorland areas,"³ and Tate, in the preface to his study of Northumberland enclosures, says: "one would expect the county to fall into a group of transitional districts, whose agriculture shows traces of Celtic 'run-rig' and of the more pure Germanic open fields of the Midlands."⁴ It is perhaps unfortunate that none of these authors has chosen to make extensive use of the surveys and maps of the county which appeared during the course of the sixteenth and seventeenth centuries, for these, in many instances, give a detailed picture of the anatomy of the Northumberland field system, and confirm the suspicion, voiced by some of these authors, that the field systems of the county show marked affinities with both Scottish and Midland arrangements.

The immediate impression given by these surveys is that regional variations in agricultural practices were strongly related to the varied physiographic and edaphic conditions which obtain in Northumberland, and the most significant contrast appears not to be between areas which had experienced differing ethnic or social histories, but between the high barren moorlands in the western, central, and southern districts, and the lower,

¹ H. L. Gray, *English Field Systems*, 1915, p. 227.

² H. Uhlig, *Die Kulturlandschaft: Methoden der Forschung und das Beispiel Nordost England*, Cologne, 1956. See also an article by same author: 'Old Hamlets with Infield and Outfield systems in Western and Central Europe', XIXth Internat. Geog. Cong., Symposium on The Morphogenesis of the Agrarian Cultural Landscape, Stockholm, 1960.

³ C. S. and C. S. Orwin, *The Open Fields*, Oxford, 1954, p. 66.

⁴ W. E. Tate, 'A Handlist of English Enclosure Acts and Awards, Part 26—Northumberland', *Proc. Soc. of Antiquaries of Newcastle-upon-Tyne*, ix, 4th Series, p. 39.

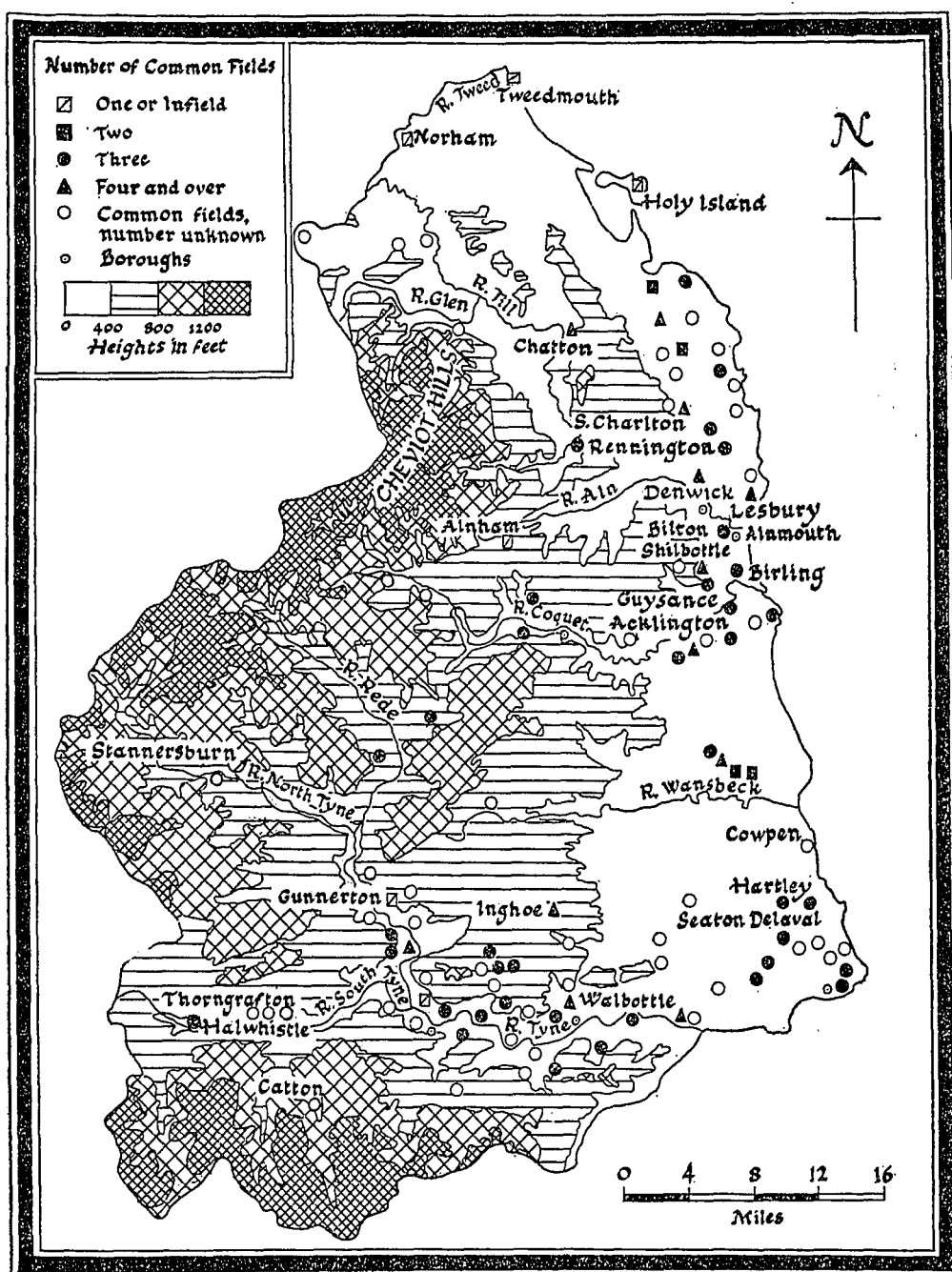


FIG. I
NORTHUMBERLAND FIELD SYSTEMS

drift-covered, scarps and coastal plain, and the alluvial valley floors of such rivers as the North and South Tyne, Wansbeck, Blyth, Till, Glen, Aln, Rede, and Coquet.¹ The importance of the physiography of the county in this respect is mirrored in the varied amounts of arable land recorded in the sixteenth- and seventeenth-century estate surveys, for these indicate a marked concentration, in the coastal plain and major river valleys, of townships with 200 or more acres. There seems to have been a remarkable concentration on Tweedside and in the valleys of the Till and the Beamish, where the soils are derived in large measure from boulder clay, glacial gravels, river alluvium, and terrace gravels. The heavier concentration of arable land in the northern half of the coastal plain, in contrast to the lesser amounts of the southern half, can also be seen as a reflection of edaphic conditions, for the boulder clay of the northern half is less heavy than that in the south. It would be wrong to assume that all the arable land recorded in the surveys was common and open, but the maps and terriers show that almost 90 per cent of the arable was both common and open, and was located in large fields which were greatly subdivided into small elongated parcels. It is these quantities of common arable, when studied in conjunction with the number of fields and the distribution of holdings within them, that point to the fact that many parts of Northumberland had, at this time, field systems which bore strong resemblance to the systems of lowland and Midland England. From these they differed only in respect of the large areas of pasture and waste, appropriated or lying adjacent to many of the townships, which facilitated a process of temporary expansion of the arable area.

Of a total of 115 townships in the county which, in the sixteenth- and seventeenth-century surveys, record the existence of common and open fields, 4 had two fields, 36 had three, 10 had four, one had five, one had six, 6 had 'infields' or 'ingrounds', 51 had 'common fields' but make no mention of the precise number, and there were 6 boroughs with open 'town fields'. Within each of these groups there was naturally a great deal of local variation, but a number of common characteristics can be discerned in some of them.

There are a number of townships where the basis of intensive cultivation was three common fields, between which the highly fragmented holdings of the tenants were equally divided. These two facts indicate the similarity of the field systems of parts of Northumberland to the 'Midland' three-field system, and they are illustrated by the agrarian arrangements of the townships of Shilbottle, Chatton, Walbottle, Hartley, Seaton Delaval, and many others.²

¹ See note on "Maps and Surveys" at end of paper.

² For location of examples cited see Fig. I.

In 1618, the common arable and part of the common meadow of Shilbottle consisted of four parts: the North Field (347a. 1r. 37p.), Middle Field (268a. 9p.), South Field (349a. 3r. 32p.), and the 'Four farms at the head of Shilbottle' (200a.). This latter part of the township had been separated from

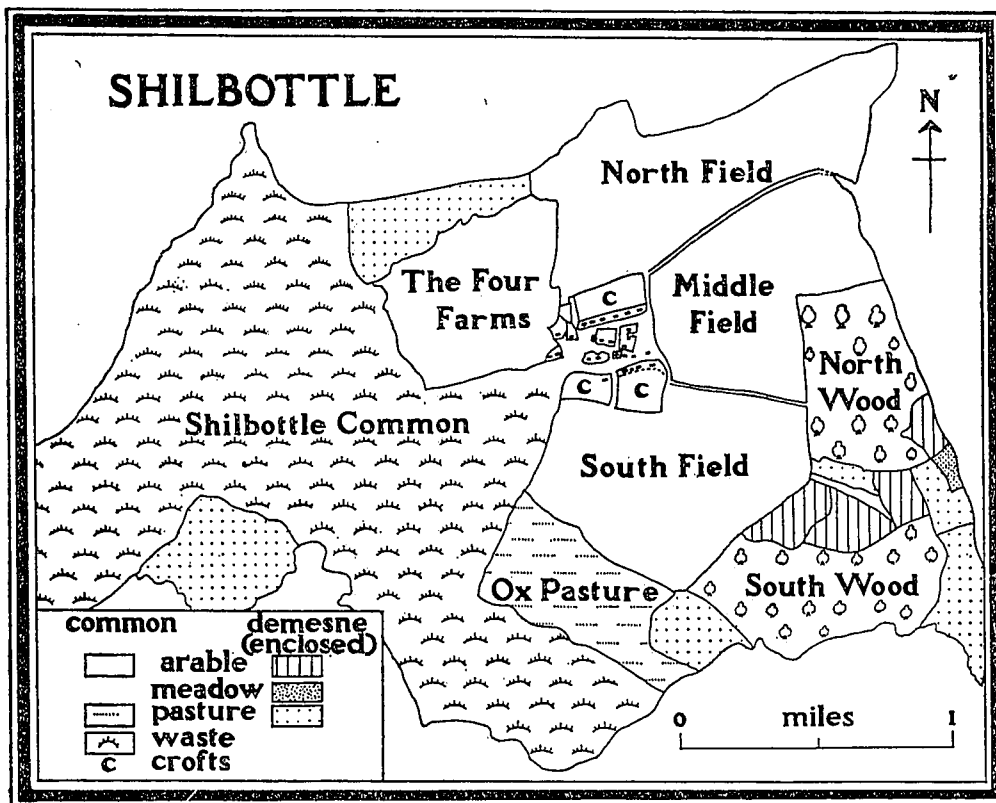


FIG. II
SHILBOTTLE

Based on Norton's map of 1624 (Aln. Mss. O. IV, 1 (a)). The North and South woods were enclosed demesne land (pasture and woodland) demised to Thomas Stamp.

the rest by four customary tenants during the course of the sixteenth century: "for they have their arable land and medowe lying together with a certain parcell of pasture ground enclosed with hedges within themselves which is more comodyous to them than yf yt lay as thother doth."¹ The land of the other tenants lay in the three common fields, with their "lands lying on the fiede rigge by rigge to his neighbours according to the old devysion of lands

¹ G. Clarkson, A description and survey of divers of the possessions of the Right Honble the Earl of Northumberland in the County of Northumberland etc., 1566 (1567) (=Clarkson), MS. Alnwick Castle (=Aln. Mss.) A.11.

in this country." There were nineteen customary tenants in Shilbottle at this date of whom four occupied the four farms "at the head of" the town.¹ Table A shows the disposition of the holdings of the others. Gray considers that "this is unquestionably the fundamental trait of the system under con-

TABLE A
DISTRIBUTION OF HOLDINGS IN SHILBOTTLE COMMON FIELDS

Size of Field	NORTH FIELD			MIDDLE FIELD			SOUTH FIELD		
	<i>Acres</i>	<i>Roods</i>	<i>Perches</i>	<i>A.</i>	<i>R.</i>	<i>P.</i>	<i>A.</i>	<i>R.</i>	<i>P.</i>
	341	1	37	268	0	9	349	3	32
Copyholders									
John Johnson	12	3	25	12	1	15	17	2	10
Richard Garrat	15	0	8	14	1	0	17	3	38
John Garrat	14	0	8	12	1	10	18	2	10
Thomas Stamp Sen.	14	3	27	13	0	23	16	3	12
Thomas Stamp Jun.	13	3	16	13	3	14	17	0	24
Oswald Chambers	15	1	26	12	3	27	15	3	25
John Emleton	14	0	2	13	0	35	15	3	30
Nicholas Horne	14	0	11	11	3	17	15	0	23
Robert Huntley	15	2	6	12	3	1	16	1	39
Thomas Emleton	14	2	12	13	3	3	14	1	20
Christopher Lishman	13	1	4	13	0	5	18	1	10
John Stamp	13	3	33	14	3	34	15	3	27
Arthur Strother	28	3	0	24	1	19	33	3	30
William Turner	16	1	12	13	0	26	17	1	18
Nicholas Stamp	12	3	21	15	0	11	16	0	20

Notes: In addition to houses and garths, the copyhold tenants of whom there were 19 (four having the 'Four Farms') held *c.* 3 acres of meadow land in the common fields and had 8 oxgait in the ox pasture, together with common of pasture in Shilbottle common. The remaining land in the township was held in four cottage farms (*c.* 13 acres each), the church farm, four freehold farms, and the demesne land (largely enclosed). There were 1,079 acres, 1 rood, 30 perches of unenclosed arable in Shilbottle, of which the land of the copyholders and cottars totalled 820a. 1r. 26p., or *c.* 76 per cent. The enclosed demesne arable was 132a. 3r. 6p.

sideration. It depends of course on the fact that a fixed ratio had to be maintained year after year between tilled land and fallow. Any departure from an equal division of the acres of a holding between fields involved shortage for a tenant during the year in which his largest group of holdings lay fallow.

¹ The information relating to size of fields and holdings is based principally on: A General Survey and Terrier of the Possessions of the Earl of Northumberland, 1612-20, by Wm. Mayson (=Mayson's Survey), Aln. Mss. A. IV, 10, and The Exemplification of Mayson's Survey being a general survey and terrier of the possessions of the Right Honble Henry Earl of Northumberland . . . 24th day of June 1622 (1622-4) (=Mayson's Exemp.) Aln. Mss. A.V. (2).

This approximately equal distribution of the acres of a holding between fields must therefore be employed as a crucial test.¹ The application of this test to Shilbottle suggests that over the three common fields a normal three-field system of management operated.

Another example of a similar three-field arrangement is the township of Chatton, in the Till valley, where in 1616 there were five fields, Milneside Quarter (248a. 2r. 1p.), Peppott Quarter (255a. 3r. 10p.), Henlaw Quarter (246a. 9p.), Gorbutt Quarter (85a. 13p.), and East Field (18 a. 2r. 37p.). East Field was held by one tenant, and was apparently excluded from communal management, and the common arable of Gorbutt Quarter was largely tilled by a minor class of tenant—the cottars. The size of the other three common fields, and the distribution of holdings between them, again suggests that a regular three-field system was in operation, with a small quantity of supplementary arable in the Gorbutt Quarter.² This is of particular interest, for the common land at Chatton had been re-arranged during the sixteenth century to obviate the inequalities in the size and value of the holdings of the customary tenants, and in spite of this the basis of farming had remained a three-field system.³

The occurrence of this regular type of three-field system in more southerly parts of the county is shown by the townships of Walbottle, Hartley, and Seaton Delaval. In 1613, at Walbottle, in the Tyne Valley, there were three common arable fields: East Field (162a. 3r. 7p.), Quarrell Field (187a. 3r.), and West Field (196a. 3r. 32p.), within which the holdings of the customary tenants were distributed in the ratio of 1:1:1½, i.e. a simple three-field system.⁴ Hartley, in the south-east, was surveyed in 1563, and the survey gives the names of shotts and fields in which the holdings of William Taylor were distributed, and refers to three common fields: West Field, North Field, and South Field. Further information relating to the distribution of holdings in the fields is provided by a deposition, made in 1596, against Robert Delaval, who had obtained possession of more than two-thirds of the township, and had evicted a number of tenants. The deponent states that before 1596 there were 15 tenants and 15 ploughs in the township. "Sixty

¹ Gray, *op. cit.*, p. 40.

² Mayson's Survey (1616-20), Aln. Mss. A.I.V. No. 5, and Mayson's Exemp., *ibid.*, A.V., 8. The ratio of holdings between Henlaw Quarter, Gorbutt Quarter, Milneside Quarter, and Peppott Quarter was in the order of 3½:1:3½, e.g. William Shell had 10a. 1r. 36p. in the first, 3a. 2r. 23p. in the second, 10a. 1r. 28p. in the third, and 9a. 2r. 13p. in the fourth.

³ For a detailed account, see Northumberland County History Committee, *A History of Northumberland*, 15 vols., Newcastle upon Tyne and London, 1893-1940 (=H.N.), xiv, pp. 211-13.

⁴ Mayson's Survey, Aln. Mss. A. IV. 3, Mayson's Exemp., *ibid.*, A.V.7.

acres of arable land at least to every plough, twenty acres in each field."¹ Similar evidence is given for the neighbouring townships of Seaton Delaval, where, previous to the evictions in 1596, "the said seven farmholds displaced had to every one of them sixty acres of arable land, viz., twenty in each field at the least."² Gray did not think this was reliable evidence for a three-field system. He thought it possible "that the author, speaking as it were parenthetically, may have been referring to a three-course rotation of crops. This method of tillage might appear where open-field furlongs were not grouped into three compact fields . . . even in the most typical of midland townships the acres of the copyhold were not divided with this precision among the fields."³ Unfortunately, in neither instance does Gray take note of the words "at the least," spoken by the deponent. They are, however, important, for in Northumberland at this period surveys of other townships and estates (such as Clarkson's Survey) frequently suffix statements of acreages with the phrase "by estimacion." The exact science of the measurement of area was largely unknown at this time, and was not practised in the county until the second decade of the seventeenth century, and then only on the estates of the more important landowners. The deponent's statement was in all probability an assessment of the size of a tenant's holding in each common field, figures to the nearest ten being typical of such assessment. The idea behind this assessment was the notion of the equal division of a holding between three common fields—a feature which other examples show to have been fairly common at this time.⁴

This three-field system appears to have been modified in many areas of Northumberland by physiographic influence, and this modification is widely shown by the existence of a number of townships whose cultivation was based, either temporarily or more permanently, on more than three common fields. The relief map shows that a large area of the county is of an altitude of 800 feet or more, which consists for the most part of vast areas of unimproved pasture, heathland, and moorland, developed on the Fell Sandstone, the Scremerston Series, Millstone Grit, and the lavas and granites of Cheviot. Although the highest of these moorlands have never been conducive to tillage except on a very small scale, the lower slopes of these common wastes and pastures were effectively utilized, at least from the sixteenth century (and probably from a much earlier date) onwards, as valuable supplementary sources of arable land. It is interesting to note Gray's opinion in this context: "One influence only the waste had upon the tillage of the arable fields, and

¹ H.N., IX, p. 124.

² H.N., IX, p. 201.

³ Gray, *op. cit.*, p. 221.

⁴ One must also bear in mind the fact that the existence of a three-course rotation of such a precise nature in any part of England is now widely disputed.

this arose from the relative size of the two areas. If, in any township, the waste was extensive in comparison with the open-field arable, utilization of the latter for pasturage might be a matter of little moment, the former sufficing for cattle and sheep. In consequence, deviation from a strict two- or three-field system in the cultivation of the arable and in the rotation of crops became relatively easy."¹ Although the use of the common fields as shack land was widespread and therefore more important than Gray imagined, the large quantities of common waste either within or near to a township strongly influenced the nature of field systems, and this influence took two principal forms.² First, where the common arable fields were adjacent to unimproved common waste, land was frequently ploughed from it and became an integral part of one or more of the fields, thus creating, in some instances, inequality in the size of the fields. Secondly, the alternative was to plough out one or more additional fields from the unimproved common which could be cultivated for a number of years and then be allowed to revert to its original form, or, in some cases, these became permanent features.

The process of supplementing the area of the common fields is well illustrated in the case of Acklington where, in 1616, there were three common fields: South Field (195a. 1r.), East Field (206a. 3r.), and North Field (291a.).³ In each of the larger fields, the surveyor refers to land newly ploughed from the common, for example, to Deane's Flatt, in East Field, which had an area of 23 acres: "this furshott last goienge before was common pasture and now lately ploughed upp, and devided among the tenants themselves, with their appointment, without privity of the officer." Part of the 'Moore Landes' (whose total area was 98 acres) which virtually constituted a separate field, though reckoned as being part of the North Field, had recently been converted from the common: "some of this field called the Moore Landes, being all lately taken out of the common, and converted to arable." The selions in this field were allocated in strict rotation, Henry Johnson, for example, receiving the first, twenty-first, and forty-first allotments. The smallest of the three fields—South Field—did not contain land which had been recently converted to tillage, and in fact the reverse process operated in this instance, for the 'Brocks haining', had been "formerly arable, but now laid to pasture because of the barrenness:" this had an area

¹ Gray, *op. cit.*, p. 47.

² Even the townships of the coastal plain had high percentages of waste or 'common': in the early seventeenth century, the figure for Shilbottle was 50 per cent, Alnwick 40, Rennington 59, Denwick 42, South Charlton 65, and the figure was much higher in the west, and to the south of the Tyne.

³ Mayson's Survey, Aln. Mss. A IV. 6; Mayson's Exemp., Aln. Mss. A.V. 6.

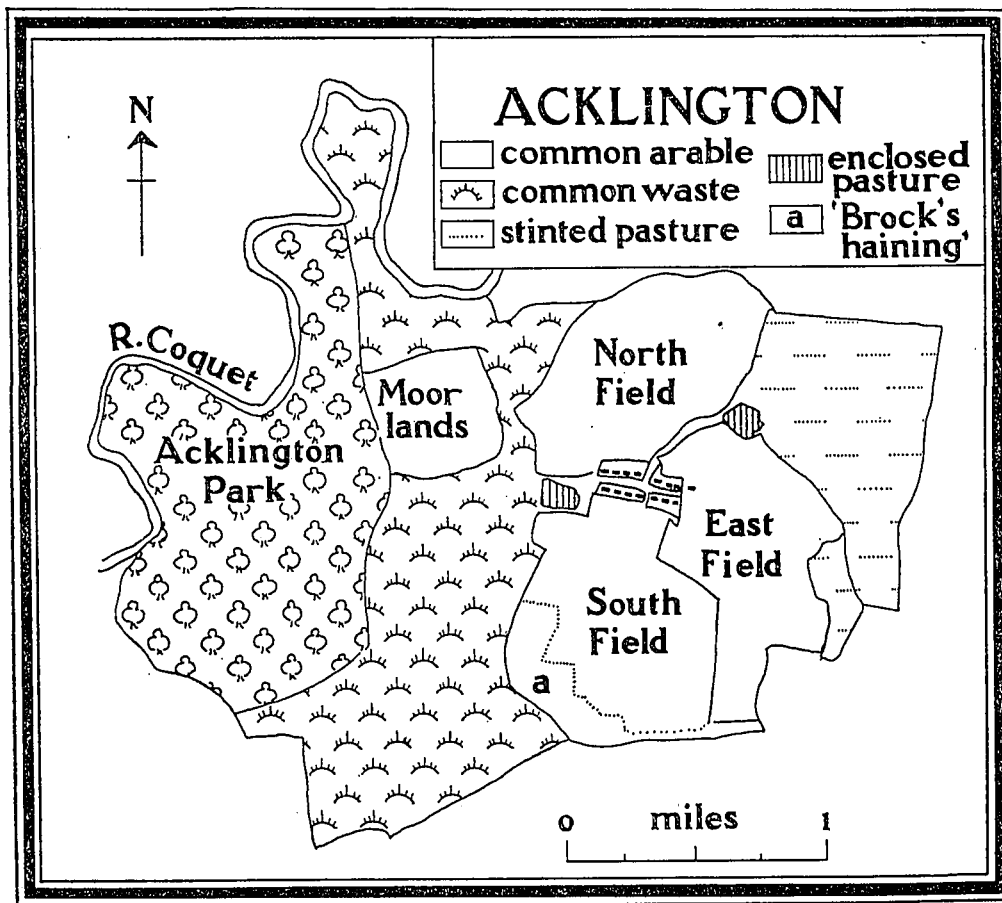


FIG. III
ACKLINGTON

Based on Norton's map of c. 1624 (Aln. Mss. OXVI, 1 (d)). The part of Acklington Park shown on the map was enclosed demesne well-timbered pasture land, held by Lawrence Rishforth.

of 34 acres. There are other examples of this process in other parts of the township. Another interesting feature of the Acklington fields is the occurrence of the term 'cavill' in shott names—as in 'Long Cavills', 'West Cavills', and 'Eastland Cavills'—suggesting that these had originally been allocated by the drawing of lots, for a 'cable' or 'cavel' or 'Kyeval' was "a stripe or share of land apportioned by lot."¹ Two important conclusions can be drawn from this example: first, that a township such as Acklington which had a reasonably large area of improvable 'common' or waste could supplement the arable area by periodically converting parts of this land to arable cultivation, and still maintain land fertility and also a reasonable balance between

¹ R. O. Heslop, *Northumberland Words. A Glossary*, London, 1892.

the areas of the three common fields (and therefore of the distribution of holdings) by allowing part of the common fields to revert to its original state.¹ Secondly, conversion to arable could vary in scale, from a few acres added to a shott, to the creation of what was almost a new field. Subsequent examples show that both types of modification were frequent. The temptation arises, however, at this stage, to argue that this modification is no more than an infield-outfield system, and Gray has suggested this in the case of the township of Cowpen, which has many features similar to those of Acklington. In the case of Acklington, the evidence is very much in favour of a three-field (or modified three-field) system, as shown by the existence of three common fields, not greatly dissimilar in size, and the disposition of the holdings of the customary tenants. These facts, together with the absence both of the terms 'infield' and 'outfield' and of evidence of a regular rotational system of land improvement from the waste, tend to refute the idea of an infield-outfield system. For the township of Cowpen, there is a valuable account of the improvement of waste in similar fashion to that described for Acklington. This account, of the queen's demesne lands at Cowpen in 1599 states that "att the layenge forth of any decayed or wasted corne feilde, and takinge in any new feildes of the common wastes in lieue thereof, everie tenaunte was and is to have so much land in everie new feilde as everie of them layde forth in everie wasted or decayed corne feilde." The deponent also refers to the occupation "of all their arable lands by partinge by lott," and states that such conversion and reversion of arable was by general consent.² Gray's suggestion that "this description might well apply to the Scottish outfield" is only partly true, for it might equally apply to a process similar to that described for Acklington, and there is no reference to an infield or an outfield.³ Furthermore, when articles were drawn up on November 15th, 1619, for a division in severalty of the township, reference was made to the existence of two open fields, North Field(s) and Mill Field, in which the holdings of at least two tenants were divided in the ratio of 1:2.⁴ Although the re-allocation of land was practised at Cowpen, this 'run-rig' is not in itself indicative of infield-outfield, and seems to have been experienced in townships (such as Acklington) where this system did not operate.

Further examples of the expansion of the area of tillage land at this time are furnished by the townships of Guysance and Rennington. Clarkson, in

¹ William Clay, a customary tenant, had for example 12a. 3r. 23p. in the South Field; 12a. 2r. 37p. in the East Field; and 15a. 1r. 31p. in the North Field.

² P.R.O. Northumberland Exchequer Com. and Dep., 41 Eliz., Easter 19.

³ Gray, *op. cit.*, p. 223.

⁴ J. C. Hodgson, *A History of Northumberland*, 1820-58, II, part 2, p. 272.

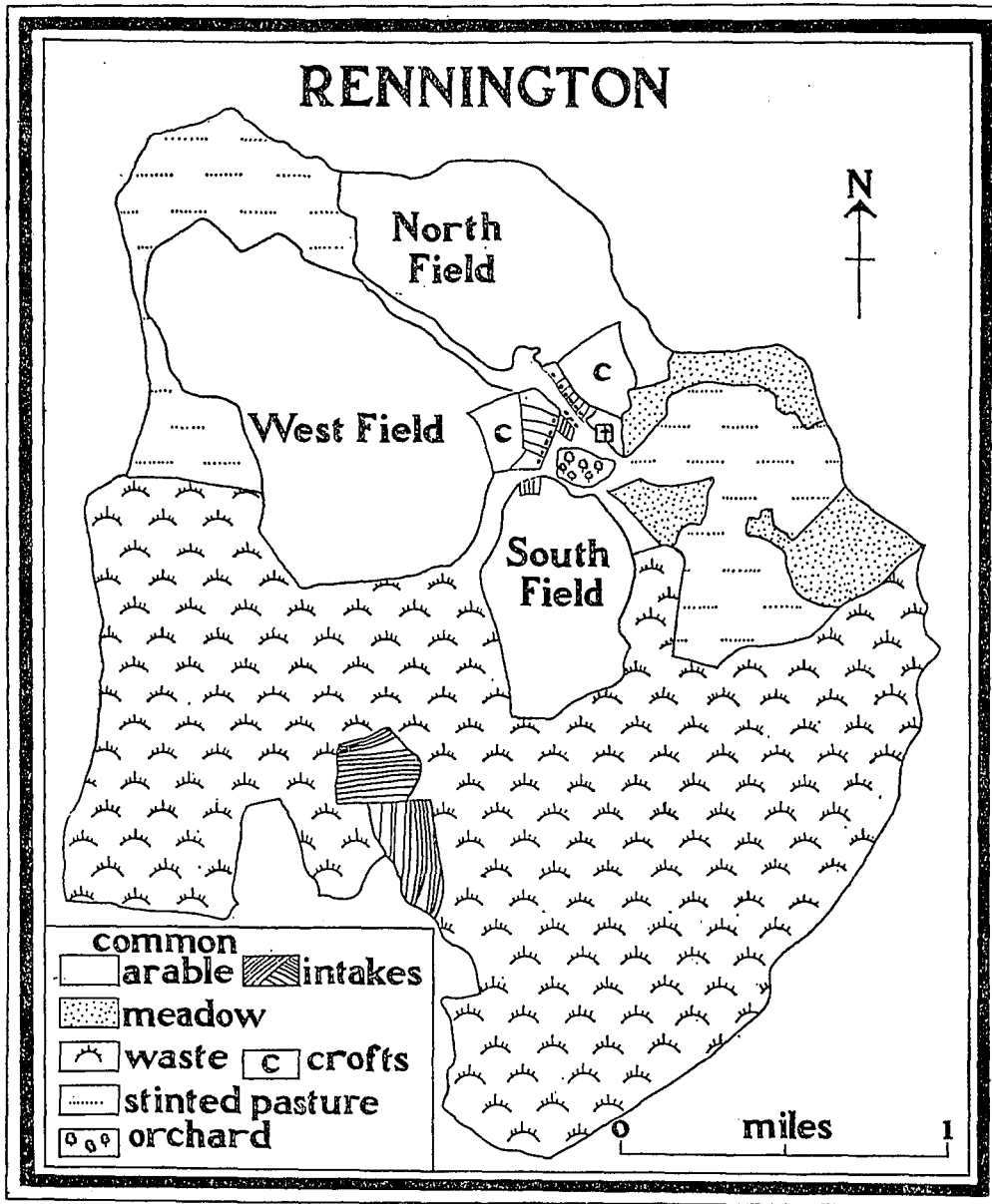


FIG. IV
RENNINGTON

Based on Norton's map of c. 1624 (Aln. Mss. O. VIII 1 (a)).

his survey, states that in Guysance certain tenants have "the xvith rigge in every new rifte which is to be made arable and which before was lee or pasture ground."¹ In 1619, there were three fields at Guysance: East Field

¹ Clarkson, Aln. Mss. A.I. 11.

(113a. 30p.), North Field (121a. 1r. 5p.), and West Field (77a. 22p.).¹ This arrangement may well have been produced by a disproportionate increase in the size of the East and North Fields. Rennington, in 1618, had three fields of unequal size: South Field (892a. 36p.), West Field (282a. 24r. 11p.), and North Field (145a. 3r.),² located on soils derived from boulder clay and river alluvium, which Clarkson described as good corn soil "if the same were used with good husbandry."³ These fields lay to the south, west, and north of the village (see Fig. IV) at a much lower elevation than the common or moor which lay to the south. In his attempt to discover the field system which operated at Rennington, Gray uses a terrier of the holding of Trestram Philipson, printed in the *History of Northumberland*.⁴ On the basis of this terrier, he concludes that "the acres of a Northumberland holding, whether apportioned to two, three, or four fields, were not disposed as they would have been in a normal township of the midland area."⁵ This conclusion is unfortunate, for it is partly based on a terrier of a holding which was definitely not typical of tenant holdings of this particular township. Table B shows Philipson's holding compared with the others, which bear much

TABLE B
DISTRIBUTION OF HOLDINGS IN RENNINGTON COMMON FIELDS

Size of Field	SOUTH FIELD			WEST FIELD			NORTH FIELD		
	A.	R.	P.	A.	R.	P.	A.	R.	P.
	89	0	36	248	2	11	145	3	0
Copyholders									
Trestram Philipson	10	0	27	21	0	5	8	3	11
William Watson	8	3	7	22	2	7	10	3	33
Thomas Ernieton	8	0	29	21	0	35	11	0	17
John Richardson	5	3	32	13	1	13	12	2	16
William Blith Jun.	8	1	17	19	2	13	13	1	14
Symon Richardson	6	3	6	11	1	39	13	0	0
Robert Wilson	5	0	22	21	3	30	13	1	25
Michael Wilson	9	2	12	19	1	2	11	0	27
Bartram Wilson	7	1	22	20	2	21	14	0	16
William Blith Sen.	2	1	23	21	3	11	12	3	11

Notes: The copyhold tenants (holders of 'tenement farms') of whom there were ten at this period, also held land in Rennington orchard and c. 2 acres each on Barelaw field (a small improvement of some 28 acres), meadow in the meadow 'dayles', and 8 'gaits' (stints) in the Oxpasture. The remaining land in the township was held by 7 cottars and 1 freeholder (whose holding was approximately equal in size with those of the tenants listed above). There were 498 acres, 3 roods, 37 perches of unenclosed arable in the township, held by the copyholders, the freehold tenant, and the cottars. There was no demesne arable.

¹ Mayson's Survey, Aln. Mss. A.IV. 10; Mayson's Exemp., *ibid.*, A.V. 2.

² Mayson's Survey, Aln. Mss. A.IV. 8; Mayson's Exemp., *ibid.*, A.V. 4.

³ Clarkson, Aln. Mss. A. I. 1. c.

⁴ H.N., I, p. 234.

⁵ Gray, *op. cit.*, p. 212.

closer relation to the size of the fields. Assuming that supplementation of the tillage area was carried out (a small example of this is in fact shown to the south of the village), one would have to evoke the influence of topography to explain the small size of the South Field, particularly the steep slope of the land to the south of the South Field. In this instance, however, there are a number of alternative explanations which would seem to have equal validity: there may have been, originally, a two-field system, to which the South Field had been added at a later date; or part of the South Field may have been allowed to revert to moor.

An alternative modification of the regular three-field system, seen in Northumberland—that whereby additional common fields were created—is illustrated by the townships of Denwick, Lesbury, Bilton, Birling, and South Charlton.

The 1618 survey of Denwick¹ states that “there is in Denwick Fower

TABLE C
DISTRIBUTION OF HOLDINGS IN DENWICK COMMON FIELDS

Size of Field	SOUTH FIELD			WEST FIELD			EAST FIELD			NORTH FIELD		
	A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.
Arable*	209	2	34	67	0	25	97	2	25	142	2	38
	142	2	23	65	1	32	97	2	25	136	2	7
Copyholders												
George Gray	17	0	36	6	0	35	12	3	15	17	3	15
Robert Clark	15	3	35	5	2	28	9	2	32	13	1	12
Robert Gibson Sen.	9	3	14	4	2	12	6	1	3	9	3	36
John Harper	9	3	37	4	3	34	7	0	30	9	3	10
Thomas Shepherd	11	1	17	4	2	38	7	0	35	10	3	36
William Mason	9	2	11	4	1	11	8	0	27	8	3	0
William Robinson	9	1	4	4	0	8	7	2	3	9	0	28
Thomas Read	12	1	27	3	2	23	5	2	33	9	2	22
Thomas Clark	9	3	39	3	3	30	7	1	39	10	0	30
Ralph Thew	9	2	22	3	2	12	7	1	5	10	3	22
Robert Thew	11	0	26	4	0	14	7	1	17	9	3	14
William Bowden	8	0	22	2	2	35	5	0	5	6	3	10
Robert Gibson Jun.	6	3	3	9	0	6	4	2	11	6	3	3

Notes: There were 13 copyhold tenants at Denwick at this time, who also held land in Gynsen meadow, Denwick rifts, an average of 18 gaits in the ox pastures, and common of pasture on Denwick common. There was very little freehold, demesne, or cottar land, and the greater part of the common arable was allocated as shown above.

* Most common fields of the lowland townships contained varying quantities of meadow land which, in many cases, is not distinguished in the surveys. Denwick is important in this respect, for there was a large area of meadow in the South Field (which abuts on an alluvial meander of the Aln) which is distinguished from the arable land in the terrier.

¹ Mayson's Survey, Aln. Mss. A. IV.8., and Mayson's Exemp., *ibid.*, A.V. 1.

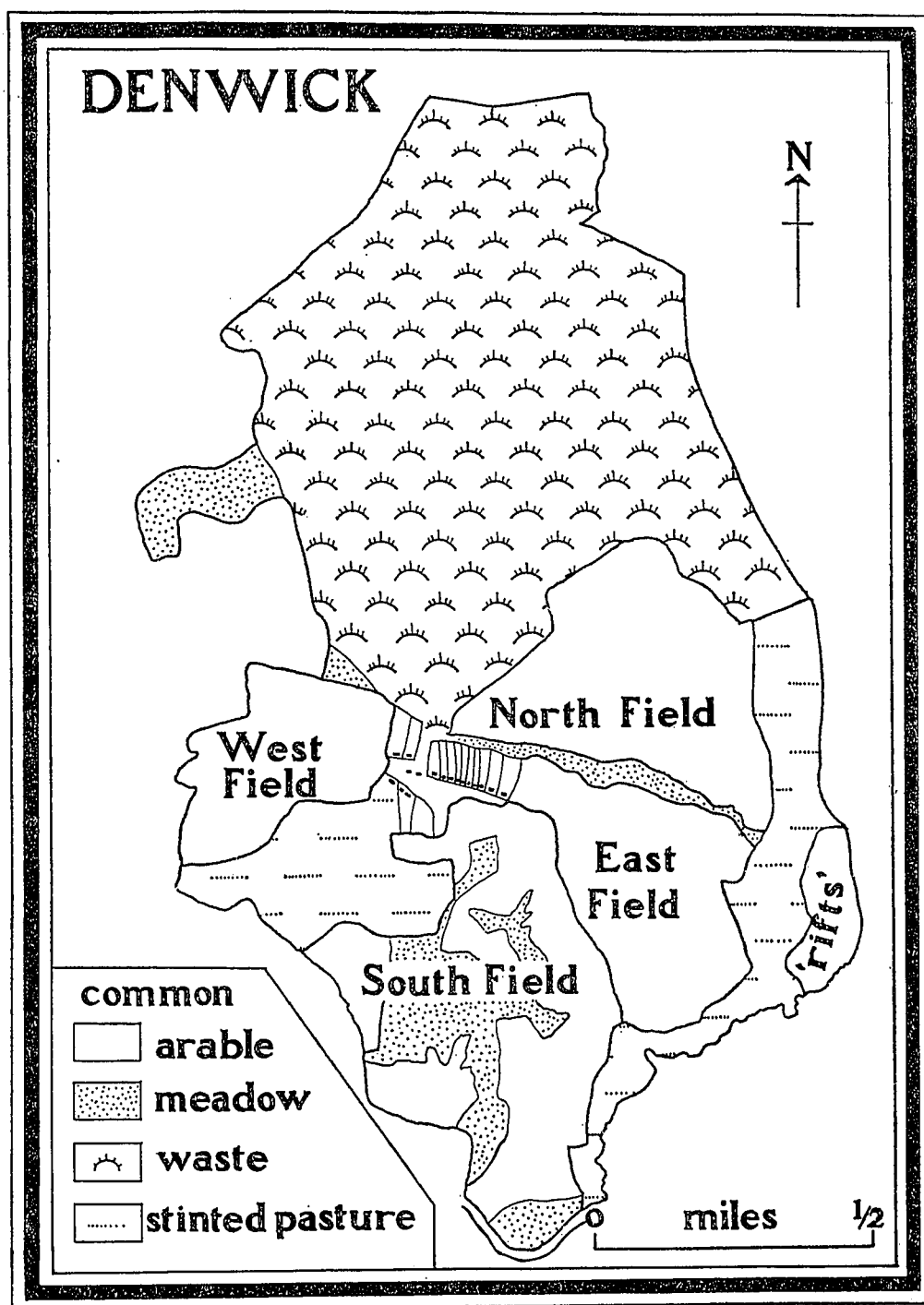


FIG. V

DENWICK

Based on Norton's map of 1624 (Aln. Mss. O. III 1 (a)). The 'rifts' were lands converted to arable, and shared equally between tenants.

severall fields named the South Field, West Field, East Field, and North Field, wherein every whole tenement is to have twenty-eight beast stints yearly, and every half farm eighteen beast stints viz. the summer half yeare in the oute pasture and the winter half yeare in the corn fieldes after the corn and hay be carried away. And it is not lawful for any of the said tenants to enclose any common fields or meadows without the licence of the lord and consent of the tenant." The accompanying map and terrier reveal that the sizes of these fields were: South Field, 209a. 24r. 34p.; West Field, 67a. 25p.; East Field, 97a. 25p.; North Field, 142a. 3r. 8p. The holdings of the customary tenants were distributed in proportion to the size of each field (Table C). The small size and peripheral location of the West Field suggests that it is a later addition to an older three-field system, possibly acting as a supplement to the East Field. Although there is no documentary evidence to support this hypothesis, there is evidence which reveals the temporary nature of one of the fields in a neighbouring township, for at Lesbury in 1614 there were four common fields: West Field (110a. 1r. 25p.), North East Field (395a. 23p.), East Field (245a. 2r. 24p.), and South Field (287a. 1r. 37p.).¹ The distribution of holdings, which is again proportionate to the size of the fields, suggests that the North East Field, South Field, and East Field, were the main components of the tillage land, with the West Field as a supplementary (and possibly a temporary) addition, perhaps to supplement the arable acreage when the largest field—North East Field (or part of it)—lay fallow. This idea is confirmed by the fact that the West Field does not appear on a map drawn ten years later. The large size of North East Field obviously bears some relation to its proximity to the common waste.

The township of Birling, located between the Coquet and the sea, in 1616 had four common fields: North Field (120a. 1r. 1p.), East Field (133a.), West Field (144a. 1r.), and Kirk Field (59a.).² This would seem to be a three-field system with a later addition. A similar situation obtained at South Charlton, where there were four fields: North Field (142a. 2r. 19p.), East Field (113a. 3r. 30p.), Middle Field (58a.), and West Field (147a. 36p.).³ Apart from the Middle Field, the symmetry of the other three would lend itself to some kind of three-field system: "by continuing the arable of the East Field and Middle Field we should get a total greater by only 30 acres than the area of each of the other fields, a not impossible three-field arrangement."⁴

¹ Mayson's Survey, Aln. Mss. A. IV. 4, and Mayson's Exemp., *ibid.*, A.V. 3.

² Mayson's Survey, Aln. Mss. A. IV. 7, and Mayson's Exemp., *ibid.*, A.V. 6.

³ Mayson's Survey, Aln. Mss. A. IV. 11, and Mayson's Exemp., *ibid.*, A.V. 4.

⁴ Gray, *op. cit.*, p. 212.

The examples quoted above, and those shown on Fig. I, confirm the thesis, which has hitherto been largely a suspicion, that a field system akin to the three-field system of midland England had a more northerly extension than was originally suggested. This does not imply, of course, the non-existence of another type of field system: in fact there is evidence which suggests that in the extreme northern, western, and southern parts of the county a type of infield-outfield system existed in the past.

INFIELD AND OUTFIELD

The documentary evidence for the existence of a field system closely approximating to the infield-outfield (as found in Scotland, for example) is not substantial. Smailes, however, in his book on North England, stated that "over most of North England the system of cultivation practised was more closely related to the Scottish run-rig than to the open-field system of the English lowland . . . as such it was characterized by a fundamental distinction between the infield and the outfield, and by the annual re-distribution of strips among the cultivators. The infield, which received all the manure available, was cultivated continuously until soil exhaustion necessitated fallowing."¹ Uhlig is similarly convinced of the existence of "Langstreifen-infields" in the north-east.² In the former case, the evidence cited for Northumberland is a single enclosure award—for Gunnerton,³ which makes reference to 'ingrounds' and 'outgrounds', which terms, as shown below, are not necessarily synonymous with 'infield' and 'outfield'. In Uhlig's work many of the conclusions are inferred from present-day survivals, such as 'fossilized' ridges and furrows and parish boundaries, and are largely unsubstantiated by documentary evidence.

The suspicion of dissimilarity of the terms 'infield' and 'outfield' and 'ingrounds' (or 'infields') and 'outgrounds' in their Northumberland context stems initially from instances where these latter terms are used to describe land in a township which had a three or four-field system. In the township of Rennington, for example, the tenants of the south side⁴ in 1707 petitioned

¹ A. Smailes, *North England*, Edinburgh, 1960, p. 93.

² H. Uhlig, 'Old Hamlets and Infield and Outfield Systems in Western and Central Europe', *loc. cit.*, p. 303.

³ Gunnerton Enclosure Act 1740; Award 1741: Northumberland County Record Office (=N.C.R.O.), No. 24.

⁴ The division of Northumberland townships into two halves is an event of frequent occurrence in the sixteenth and seventeenth centuries: it seems to have been due to the desire to overcome the obvious deficiencies of the open-field system without resorting to total enclosure; this would have weakened the defence of the village at a time when border warfare was still prevalent.

for enclosure, and they "most humbly crave of their Graces the Duke and Duchess of Somerset that the Infields of the South Side may be equally divided and parted."¹ At Acklington, in 1686, the tenants of the south side agreed to the division of lands in the 'ingrounds' and the 'outpasture'.² There were also 'ingrounds' and 'outgrounds' at Seaton Delaval³ and 'infields' at Inghoe (which had four common fields—three large and one small).⁴ It seems, therefore, difficult to equate infield and outfield, in their normally accepted sense, with the equivalent Northumberland terms, for 'ingrounds', 'infields', and 'outgrounds' appear to be general terms used to distinguish between land near the settlements—normally arable, meadow, and pasture, subject to intensive use—in contrast to the moors and wastes, many of which were unappropriated, and which were generally used as grazing grounds (the more distant ones in summer only) and as additional sources of arable or improved pasture.

Paradoxically, the areas of Northumberland in which one suspects a field system akin to infield-outfield to have been utilized are those in which 'infield' and 'outfield', or similar terms, seem to have been used rather infrequently. From a physiographic point of view, one would expect that such a system would have prevailed in part of the west and south of the county, where the land consists largely of vast areas of infertile upland wastes, relieved only by the alluvial stretches of the valleys of such rivers as the North Tyne and Rede. The 1604 survey of the 'Debateable lands' of the border partly substantiates this inference, for it indicates the existence of a large number of relatively small units of cultivation, in which the quantity of arable land was small in comparison to that of meadow, pasture, and moor.⁵ (See Table D.) These small units were farmed by branches of the notorious border families—the Charltons, Riddleys, Halls, and others. The surveyor states that "they till, reap and mow each their known ground particularly, and after the first crop they eat all in common without stint or number, except in some places where the tenement lyeth in several." The arable land was located on the lower slopes of the valley sides and in the valley floors. This system of cultivation appears to be similar to the small-scale infield-outfield formerly practised in part of Scotland, and is also similar to that which existed in Cumberland, both in relation to physiographic conditions and to the emphasis on pastoralism, raiding, and theft.⁶ The emphasis on pastoral-

¹ Aln. Mss. J. III. 7(a).

² Aln. Mss. J. IX. 6.

³ H.N., IX, p. 202.

⁴ Aln. Mss. J. IV 6(h), 1697.

⁵ R. P. Sanderson (ed.), *Survey of the Debateable and Border Lands adjoining the Realm of Scotland and belonging to the Crown of England. 1604.*

⁶ G. G. Elliot, 'The system of cultivation and evidence of enclosure in the Cumberland open

TABLE D
FAMILY UNITS AND LAND USE IN ELSDON PARISH, 1604

<i>Place</i>	<i>Tenants</i>	<i>Meadow Acres</i>	<i>Arable Acres</i>	<i>Pasture Acres</i>
Troughend	J. Reade	120	240	1,306
	T. Reade	10	12	88
	J. Hall	4	8	48
Raylees Burn	R. Hall	12	64	80
	O. Hall	4	24	30
	W. Hall	4	24	30
Ravenscleugh	J. Hall	4	24	30
	W. Hall	4	24	30
Stobbs	N. Hedley	8	6	102
	T. Hedley	3	4	
	A. Hedley	3	4	
	P. Hedley	3	4	
	J. Hedley	1	2	
	E. Hedley	2	4	

Note: Elsdon parish was an area drained largely by the R. Rede and its numerous small tributary streams. Troughend is located on the right bank of the Rede, near Otterburn; Raylees burn and Ravenscleugh to the south of Elsdon on the Raylees burn, a western tributary stream of the Rede; and Stobbs is located further upstream than the first two, on the left bank of the Rede near Rochester.

ism is also reflected in the seasonal movement of men and animals to the higher pastures, or 'shielings', in summer: "Here every year round about in the wastes as they term them, as also in Gillsland, you may see, as it were, the ancient Nomads, a martial kind of men, who from the month of April lie out scattering and summering (as they term it) with their cattle in little cottages here and there, which they call sheals or shealings."¹ The 1604 Border Survey describes how "for their sheildinge grounds they doe begyn and end by agreement among themselves accordinge as the season falleth out."

A complicating factor in the analysis of this type of cultivation is the existence of the gavelkind system of inheritance. In 1580, a certificate of the musters of the middle marches, referring to North and South Tynedale, states that the inhabitants "have ever had a custom, if a man have issue ten sons, eight, six, five, or four, and sits on a holding of but 6s. rent, every son

fields in the sixteenth century', *Actes du Colloque International: Géographie et Histoire Agraires*, Nancy, 1957 (in *Annales de l'Est*, 1959, p. 118). For a detailed account of border conditions at this time see D. L. W. Tough, *The Last Years of a Frontier*, Oxford, 1927.

¹ Camden, *Britannia*, ed. E. Gibson, 1697, p. 816.

shall have a piece of his father's holding."¹ Because of population pressure on the better land as a result of this system of inheritance,² some of the shieling areas were developed as places of intensive cultivation though it is difficult to discover the precise nature of the system of cultivation in these areas. There is also evidence for a similar type of small-scale cultivation in the land to the south of the Tyne,³ though the evidence for communal cultivation is here less clear. The main difficulty of reconstructing the field system of these more remote parts of Northumberland in this period is the paucity of detailed documentary information, which is largely a reflection of the unsettled conditions which prevailed in those areas until the end of the seventeenth century.

The evidence afforded by Enclosure Acts and Awards sheds little light on the general picture of Northumberland field systems, for most of the open fields had been enclosed in the seventeenth and early eighteenth centuries, and the acts and awards deal mainly with moors and wastes.⁴ Of those which relate to the enclosure of common and open arable land, a number refer only to 'common fields', and the accompanying plans show that these were frequently small remaining pieces of common field lying among the 'ancient enclosures'. Such were the 'rig and dale lands' at Haltwhistle, enclosed in 1849, which were not contiguous, nor were they assigned to any field or shott,⁵ as also were the common field remnants at Thorngraston, enclosed in 1797.⁶ At Stannersburn, a small hamlet in North Tynedale, the 'common fields', which totalled 71½ acres, were enclosed in 1816,⁷ though there is no reference here to ancient enclosure, and it is possible that the system here was akin to that described for North Tynedale in the seventeenth century. At Catton, three common fields were enclosed in 1880: East Field (9a. 1r. 16p.), West Field (44a. 1r. 9p.), and the Prye (15a. 3r. 12p.), but the award gives little indication of the extent of previous enclosure.⁸ Catton may well have originally experienced an infield-outfield system, with the West Field as the infield, but there is no evidence to confirm this.

Of the remaining acts and awards, only those for Alnham, Gunnerton, Norham, Tweedmouth, and Holy Island indicate the possible existence of infield-outfield. A map of Alnham drawn in 1775⁹ —the year before the en-

¹ J. Bain (ed.), *The Border Papers: calendar of letters and papers relating to the affairs of the Borders of England and Scotland preserved in Her Majesty's Public Record Office*, 1894-6, I, para. 50.

² Reference to population pressure is made in Bowes and Elleker's Survey of the Border, printed in J. Hodgson, *op. cit.*, Part III.

³ 1608 Survey of the Regality of Hexham printed in H.N. III.

⁴ See W. Tate, *op. cit.*

⁵ N.C.R.O. 33.

⁶ N.C.R.O. 50.

⁷ N.C.R.O. 55.

⁸ N.C.R.O. 31.

⁹ Aln. Mss. O. XI. 2.

closure of the township's 'infields', shows that there was not one infield, but several: adjacent to the village were the North Field, East Field, Middle Field, and South Field, and the Ox Pasture, while to the north of the North Field lay Hartclay Field, Lee Field, Cobden Haugh, and several smaller fields. A contemporary map of larger scale¹ shows that the North Field did not consist solely of open arable and meadow, but was a heterogeneous mixture of 'tillage, meadow, common pasture, and closes'. The modern topographic map shows that some of these 'infields' were at a height of over 1,000 feet, and that part of the North Field had an extremely steep gradient. The smaller 'infields' were in fact pasture land of slightly better quality than the surrounding wastes. One can see therefore that this is not infield-outfield as normally experienced, nor is it the three- or four-field system seen in other parts of Northumberland at an earlier date. The 'fields', particularly the East, Middle, South, and North Fields, seem to have been topographic units, rather than units of arable cultivation. It is interesting to take note, in this instance, of John Grey's description of Northumberland agriculture in this period: "but still great tracts of land were not brought regularly under the plough, most farms being divided into what was called the infield and outfield lands; the former being subjected to a severe course of cropping, with very inadequate cultivation; the latter left to its native produce as a pasture for sheep and young cattle, or if choice portions of it were occasionally broken up, it was to rob it of its fertility by the production of a succession of corn crops, and then to leave it to recruit itself by several years of pasture."² It would seem, therefore, that the terms infield and outfield (ingrounds and outgrounds) were used in these barren areas to denote contrasts in intensity of land use, but not necessarily on an infield-outfield system (in the normally accepted sense). The award for Gunnerton, in North Tynedale, cited by Smailes, throws little light on the problem, for it refers to 'ingrounds' and 'outgrounds'. The ingrounds ("which containeth by estimation 1,300 acres and upwards") partly consisted of land which lay "dispersed in several small parcels (which) hath by a long and constant usage in tillage been greatly impoverished and cannot by reason of the distance and inconvenient situation of the several lands and grounds in the said common fields, be properly cultivated and manured, but at an insupportable expense." The award refers to an East Field and a Low Field, and to a number of "intacks," but further interpretation is difficult in the absence of a plan. The affinity of the above examples, if they do in fact represent late variations of an infield-outfield

¹ Aln. Mss. O. XI. 2.

² John Grey, 'A View of the past and present state of Agriculture in Northumberland', *Journal Royal Agricultural Society*, II, 1841, p. 153.

system, may well be with the south-west of England, that is with similar characteristics to those described in parts of Devon,¹ and not with Scotland. The area in which one would expect affinity with Scots agricultural practice is the northern part of the county, adjacent to Scotland. Marshall, writing of this district, says: "But Tweedside—as the more immediate banks of the river are emphatically named—being in natural character, and rural management the same on either bank, and partaking much more of Scottish than of English husbandry, I forbear to separate them."² This similarity is borne out by the reference of the respective enclosure acts to 'infields' at Norham,³ Tweedmouth,⁴ and Holy Island,⁵ though here again 'infield' referred to arable, meadow, and pasture land. If one interprets the word 'infield' (in the Northumbrian sense) as including the functions of both infield and outfield in their Scottish context, then one can reasonably acknowledge the existence of a field system in the north, west, and south of Northumberland which bears some similarity to the Scottish infield-outfield system. Much more investigation is needed, however, before the precise nature of such a system can be determined.

From the evidence available for Northumberland from the sixteenth century onwards, it would appear, therefore, that the main contrast in field systems was between the three- or four-field systems, found in the lower areas of the coastal plain and the river valleys, and a system somewhat similar to the infield-outfield system of parts of Scotland and England. It is interesting to note that the evidence for a three- or four-field system is strongest in those areas where the settlements for the most part are nucleated villages, which may well be of Anglian origin, though it would be dangerous to attempt to read ethnic causes into variations in infield-systems at such a late period. The evidence available for the nature of crop rotations and fallowing practice within these systems is meagre, and although the relation between cropping systems is not a fixed one and (as has been frequently pointed out) the two can operate quite independently, it is interesting to note a further similarity between the field systems of lowland Northumberland and those of 'Midland' England: namely, that whole-year fallows seem to have been common.⁶

¹ H. P. R. Finberg, 'The Open Field in Devon', in W. G. Hoskins and H. P. R. Finberg, *Devonshire Studies*, 1952, p. 285.

² Wm. Marshall, *Review and Abstracts of the County Reports to the Board of Agriculture*, York, 1808, I, p. 2.

³ Collections of Local Acts, Lit. and Phil. Soc. of Newcastle upon Tyne, XII, No. 10.

⁴ *Loc. cit.*, XIV, No. 10. ⁵ *Loc. cit.*, XIII, No. 16.

⁶ For example, at Hazon and Hartlaw, in the reign of James I, one-third part of "Thirkeld's lands" lay fallow every third year: H.N., v, p. 465 fn. Other references to fallowing are made for: N. Guysance (1480), H.N. v, p. 486; Shilbottle (1566)—Aln. Mss. A.I.2; Elswick (1580)—

Gray, Tate, and Uhlig have suggested that if a Midland type of field system existed in Northumberland, then it did so as a late development of an infield-outfield system. Only a detailed examination of Northumberland field systems, in the period before the sixteenth century, will confirm or contradict these assertions. The author's present opinion is, however, that the two systems, even in the Border area, had quite different roots, and he would certainly contest the assertion that the three-field system in Northumberland was a product of Anglo-Norman manorialism,¹ for this was never a very influential factor in an area of constant border fighting, where military rather than economic subservience was a dominating characteristic.²

A NOTE ON THE MAPS AND SURVEYS OF NORTHUMBERLAND

The valuable surveys of the estates of the earls of Northumberland, housed at Alnwick Castle, are a product of careful estate management, particularly during the lifetime of the ninth earl, Henry Percy (1564-1632).³ The value of terriers drawn up by such surveyors as Wm. Mayson is enhanced when they are used in conjunction with the maps produced by Robert Norton to accompany Mayson's surveys, in the period 1610-30.⁴ These maps (Aln. Mss. O.), which seem to have been produced to show the location of demesne and freehold land, provide an extremely valuable picture of Northumberland field systems. The other surveys referred to in the text, though useful, do not provide such a detailed picture of the agrarian arrangements at this time.

P.R.O. Exchequer Comm. and Dep. (Northumberland), 23 Eliz., Hil. 6. The use of arable as shack land was most common in the lowland areas.

¹ H. Uhlig, *op. cit.*, p. 303.

² The author wishes to acknowledge the permission kindly granted by His Grace the Duke of Northumberland, and by the Northumberland County Archivist, to consult the archives housed in Alnwick Castle and the County Record Office respectively.

³ See: G. R. Batho, 'The Finances of an Elizabethan Nobleman: Henry Percy, Ninth Earl of Northumberland', *Economic History Review*, 2nd Ser., ix, 1957.

⁴ Robert Norton was an engineer and gunner, who made a large number of plans of the northern and southern Percy estates at this time. See G. R. Batho, 'Two newly discovered maps by Christopher Saxton', *Geographical Journal*, cxxv, Pt. 1, March 1959, p. 72.

Map of Over Haddon and Meadowplace, near Bakewell, Derbyshire, c. 1528

By E. M. YATES

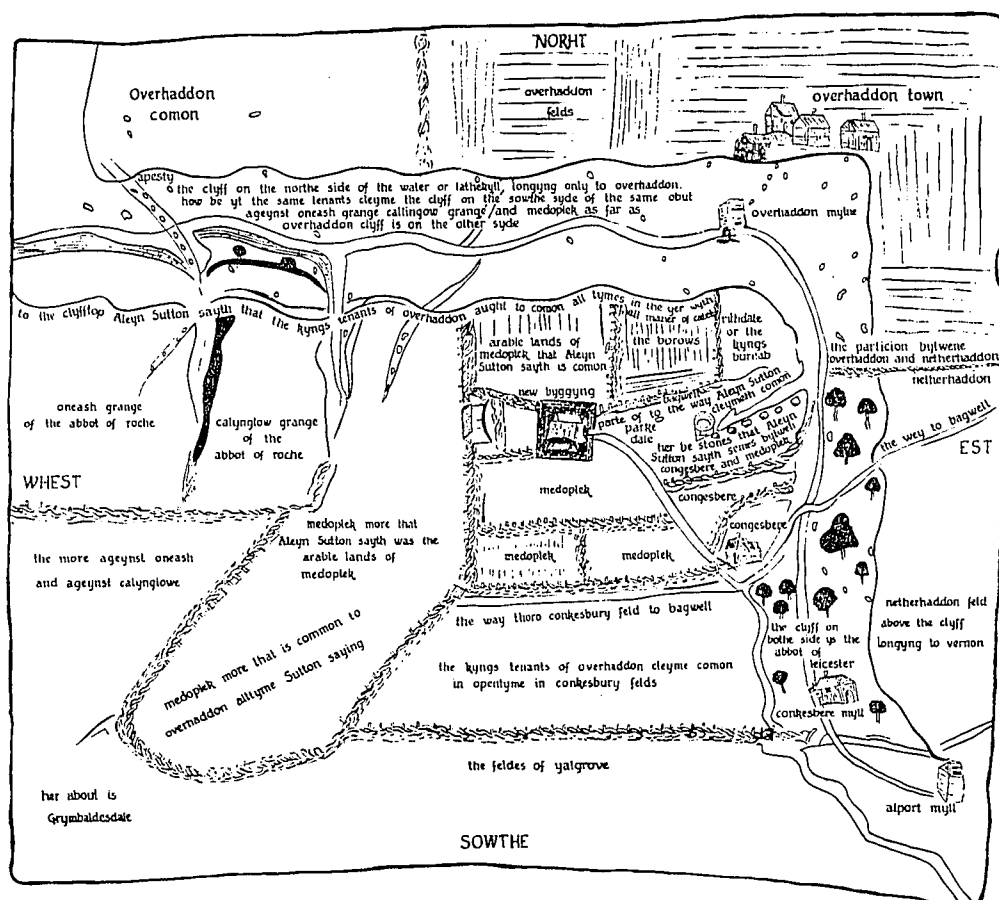
IN the Public Record Office are preserved a number of sixteenth-century maps of great agricultural interest. Many were drawn as evidence during the hearings before the Chamber of the Duchy of Lancaster and it is possible in some cases to find the associated written evidence. The Over Haddon map was prepared in 1528 during a dispute over common pasture, and some details of the dispute are available.¹ The map is coloured naturalistically with blue streams, green pasture land, and greyish brown arable land. The wall around "Newbygyng" is coloured red. The district is in the Derbyshire limestone country, and the valley scars are shown in white, with the same symbol for limestones as used today. The cartographer also attempted to show the limestone boulders on the valley slopes below the scars by white patches. The area of land portrayed is about 4 miles by 2 miles. No scale is given but the size of the original map is 24 by 20 inches. The map shown here on p. 122 is a relettered redrawing.

The general theme of the dispute is obvious from the comments on the map. The tenants of Over Haddon, in particular Thurston and Edmund Hogekeynson, complained in 1525 that the abbot of the Leicester monastery of the Blessed Lady of the Meadows had denied them common of grazing and rights of estover in Lathkilldale. In the dispute that followed the abbot appears to have obtained the judgement, although (according to the Over Haddon tenants) only by making "dyverse and sundreye untrue depositions and sayings," including those by poor local people "which were corrupted and wagyd." Subsequent complaints were made by the tenants of Over Haddon, in

this instance represented by Allen Sutton, yeoman, and Thomas Fayrfyld, husbandman. They stated that, although they had kept to the terms of the decision reached by the Chamber, the abbot's tenants, including Richard Addyshed and Humphrey Smetheley, were now exceeding their rights. They (the abbot's tenants) had impounded stock found grazing at Burnab and the Springwood, and during the disturbances cows and oxen belonging to the Over Haddon people had been killed.

On the 14th of February 1528, owing to these further complaints, an instruction was sent from the Duchy Chamber to the abbot of Derby, Richard Howton vicar of Bakewell, John Wells, and Anthony Babyngton. They were required to go to Over Haddon and to put into writing "by a cart or platt the meres and boundes" and to send this to the Chamber "by the hand of one suche person as shall be well instructed by you to declare the same plot." Sworn evidence was collected from the local people on 16 April and it is likely that the map was drawn at about that date. The majority of the sworn testimonies supported the claim of the abbot that the Over Haddon tenants had no right to pasture in Meadowplace (Medowplek on map), and once again the abbot appears to have gained a decision in his favour. This did not terminate the grievance. In 1529 more depositions were taken and some of the witnesses claimed that Allen Sutton had probably had the result of the hearings communicated to him by the abbot, but that he had never informed the other tenants. In 1531 the abbot complained against Sutton and other men of Over Haddon. He stated that they had "riotously with force and

¹ P.R.O., M.P.C. 59; DL1, 2, 02; DL1, 21, 02; DL1 8, 01; DL3, 19, S1; DL3, 18, L1.



armes brokyn up the hegges and ground of the said Abbot and put in the hole herdshippe of bestys in to the same and in the riotous manner kept the same bestys and have syten desoyled and destroyed the grasses and corn of the said abbot and his tenants and riotously have fellyd the wodes of the said abbot growing in the same ground." There appears to be no further record of the dispute.

The abbey of the Blessed Lady of the Meadows was an Augustinian foundation, established c. 1143. The cartulary has been much damaged by fire, but some of the entries for its Derbyshire properties are legible: 8 messuages with 100 acres of arable, 20 acres of meadow, and 20 acres of pasture in Conksbury; 20 acres in Haddon called Chanon-slath; Newbygyng and Meadowplace; all re-

corded as the gift of William Avenell.¹ The date of the gift is not given but it was probably mid-thirteenth century. Meadowplace had previously been given by an Avenell to the Cluniac abbey of Lenton in Nottinghamshire at the beginning of the twelfth century and had therefore long been a separate property. It is indeed described as a grange in the depositions, and must have been once cultivated directly by the monastery. The valuation of church properties made in 1539 shows, however, that in 1531 Meadowplace had been let by indenture to William Smethley (possibly kin to the Humphrey Smethley above) for 31 years, and from the mention of the abbot's tenants in the dispute it had obviously been rented some time before that. Direct use of the grange by the monastery

¹ BM Cotton MS. Vit. F xviii.

had come to an end before the dissolution.¹

Despite this change the grange had left an abiding mark on the landscape. On the map, Meadowplace appears as a separate farm unit, divided by well-laid hedges or wattles from the open fields of Over Haddon. Over Haddon fields are open no longer, but the dry stone walls (of which incidentally there is no trace on the map) enclose long strips, and their pattern contrasts with the square fields of the grange.

Roche abbey was a Cistercian house established in 1147, and like Leicester abbey it received lands from William Avenell. No cartulary is extant but in one of the deeds quoted by Dugdale these lands were "a hill beyond the river and 20 acres in the field of Haddon." The hill beyond the river probably became Callinglow and One Ash granges. Like Meadowplace, both these granges were let for rent in 1538-9 when the valuation of the property of the abbey was made.² Roche and Leicester figured in the Florentine lists as wool producers, and one might guess that the grange farms provided some of this wool. This may have been true of the Roche granges, since, in the valuation of 1538-9, outgoings from One Ash included payments for common of pasture in Hartington moor and in Middleton moor (Hartington and Middleton are adjacent parishes, and since the pasture was common the grange was not an entirely independent unit). At Meadowplace however the appearance of a good deal of arable suggests that a mixed husbandry was practised in 1528. It was, of course, not exceptional for an Augustinian house to have a grange farm: Ronton, the Augustinian house in Staffordshire, had granges on the Millstone Grit country of the south-west Pennines.

The land-use of this part of Derbyshire, as portrayed on the map, was obviously controlled by slope. The steep valley sides, with their limestone scars, were grazing land; cultivation took place on the upland. Despite the upland character (Over Haddon fields go above 900 ft) the district appears to have been a corn-growing one. The numerous mills

show this, and one of the witnesses in the dispute, Thomas Clayton, testified to driving 200 oxen from Over Haddon to the pastures. Over Haddon fields are shown as open on the map, but there is no evidence in the depositions of the field division or of the rotation followed. There is however one extraordinary further reference to Over Haddon fields which can only be interpreted as a yearly re-allocation of strips.

In 1526 an entirely separate matter had been brought before the Chamber, regarding the ownership of 100 acres of land in Over Haddon called Wyndelonde.³ William Fayrefeld, perhaps kin of Thomas Fayrfyld above, appeared in this case. He held 10 acres of the 100, and said his ancestors had held it for 200 years. Asked where the 10 acres lay, his reply was "he cannot till howe ner the sayed 10 acres lye to the house of the sayed William Fayrefeld (himself) for they have it by lot as it is cast." This last part of his reply had been crossed out by the clerk, perhaps because it appeared irrelevant, but it is quite legible.

The persistence of the differences in field pattern shown on the map has already been mentioned. The difference is of course related to a contrast in settlement pattern which also persists; the contrast between the village and the single farmstead. If the identification of "the hill beyond the river" with One Ash and Callinglow be correct, then monastic farming has been responsible for this interposition of isolated farmsteads between the earlier villages. "Newbyggynge" suggests that Meadowplace may be another example of the same development.

This limestone country has little surface drainage apart from the main streams, and the supply to Meadowplace appears to have come from the stone cistern shown. A small pool, presumably spring fed, remains on the site of the cistern today. There is also near by a small wood, probably the descendant of the Springwood to which reference is made in the depositions. Lathkilldale also remains wooded, with a later growth of trees.

One of the most astonishing features of the

¹ P.R.O. SC6, Hen. VIII, 1827.

² SC6, Hen. VIII, 4534.

³ P.R.O. DL3, 16, R10.

dispute is the drawing of the map. The instructions from the Chamber assumed a familiarity with map drawing. There are of course much earlier maps of estates, such as that of part of the lands of Chertsey Abbey c. 1430, but the Meadowplace map is incomparably better as a large-scale guide to terrain. Its sketching must have called for a considerable knowledge of the district and for considerable skill. Similar large-scale maps appear in the Chamber records from about

1520 onwards. Some of the earliest are highly stylized and rectangular, but as a method of recording evidence over land disputes they are a great advance on verbal descriptions. A key and a scale are generally lacking, but in this instance the key was to be provided by the person "to declare the same plot."

From the evidence of the handwriting in the written evidence and in the map, the map-maker was probably Richard Howton the vicar of Bakewell.

Notes and Comments

THE BRITISH AGRICULTURAL HISTORY SOCIETY
Readers of this journal will learn with regret that John Higgs, the Secretary of the Society since its inception, the Treasurer, Professor Edgar Thomas, and the Editor of the REVIEW, Professor H. P. R. Finberg, have resigned from office this year. The Society owes more to them than to anyone, for it is through their labours that it has been established on such a firm foundation and that the REVIEW has achieved its high scholarly reputation.

THE ANNUAL CONFERENCE

The annual conference of the British Agricultural History Society was held at St Patrick's Hall, Reading, from 10 to 12 April in conjunction with the Economic History Society. On the first afternoon Dr A. H. John and Dr E. L. Jones read papers on 'Agricultural Change and Economic Growth in the Eighteenth Century' and in the evening Professor E. F. Söderlund spoke on 'Banking and Economic change in an Agrarian Economy: mid-nineteenth century Sweden'. The following morning Miss Barbara Dodwell read a paper on 'Holdings and Inheritance in Medieval East Anglia'. In the afternoon most members of the conference visited the parishes of Ardington and Lockinge in the Vale of the White Horse under the guidance of Mr B. Loughbrough, Assistant

Keeper, Museum of English Rural Life, and Mr M. A. Havinden. In the evening Professor F. J. Fisher discussed 'Agrarian Problems of sixteenth-century England'. The conference concluded on the Sunday with papers by Professor W. N. Parker on 'American Agriculture—North and South—1850 and 1910' and Mr H. S. Cobb on 'Documents of Interest to Economic Historians among the Records of Parliament at the House of Lords' Record Office'.

At the annual general meeting held on Sunday, 12 April, Mr R. V. Lennard was re-elected President of the Society. Professor Edgar Thomas and Mr J. W. Y. Higgs resigned as Treasurer and Secretary respectively. Mr C. A. Jewell was elected Treasurer and Mr T. W. Fletcher, Secretary, thus leaving two additional vacancies on the executive committee. Three members of the committee, Mrs C. S. Orwin, Mr W. Harwood Long, and Mr G. Houston, retired at the expiry of their term, and Miss Audrey Beecham, Mr G. Bisset, Dr W. H. Chaloner, Mr G. E. Fussell, and Mr J. W. Y. Higgs were elected to the five vacancies.

Mr Harwood Long, in presenting the report of the executive committee, paid warm tributes to Professor Thomas and Mr Higgs who had served the Society from its inception

(continued on p. 128)

Land Tenure and the Commercialization of Agriculture

By E. H. WHETHAM

THE historians of land tenure in medieval Europe might find much to interest them, and possibly some illumination on their problems, in the changes that are now taking place in land tenure in many parts of Africa. Of the two books here reviewed,¹ the first, edited by Prof. Biebuyck, contains 21 papers read at a conference at the University of Lovanium (Congo) in 1960; each paper, either in French or English, has a summary in the other language. The title might lead the English reader to suppose the book is about cropping systems, but the papers are in fact concerned with land tenure in Africa south of the Sahara, while Miss Polly Hill's book describes the extensive transactions in land for cocoa plantations which occurred in Ghana from the 1890's onward. Africa south of the Sahara contains vast zones each having much the same soil type, topography, and climate throughout its extent; within these zones the different peoples have evolved an astonishing variety of relationships to their land. Those relationships have in some respects conditioned the response of men to the influences of commercialization and of population pressure, which in turn are now affecting in various ways the adjustment of mental attitudes and social customs to the changes of the twentieth century.

In the symposium, a brief but important paper by Paul Bohannan (pp. 101-15) distinguishes between the modern European concept of a piece of land which can be owned, bought, and sold; and the concept held by many Africans of the 'right to share' the resources of a vaguely defined territory, in ac-

cordance with size of family or in accordance with inherited or acquired status. The 'right to share' normally implies the exclusive use of the produce of any plot of land personally cultivated, and this right often continues for as long as fallow land retains signs of previous cultivation; there are also rights to gather firewood and wild produce and to graze animals over uncultivated land. These rights derive from inheritance through one or both parents, or from grandparents, or through older brothers and sisters; a migrant family can be 'adopted' into another village but normally no family can live within one community and exercise rights to share in the produce derived from the territory of another, except within a strictly limited range of kinship.

The lack of manure and of plough beasts, the desiccation of the soil during the dry season, and shallow cultivation by the hoe have implied the frequent shift of the cultivated land within the effective territory of each unit, though there may be continuous cultivation of river valleys and other favourable sites. Some villages have frequently moved, either because the local spirits failed to provide adequate harvests or because the distance from huts to farmed plots became inconveniently large. Among the Tiv, according to Bohannan, "the position of a man's farm varies from one season to the next, but his juxtaposition with his agnatic kinsmen, and his rights to a farm, do not change" (p. 106). And this concept of a 'right to share', detached from any specific piece of land, is carried to the extreme among the pastoral

¹ D. Biebuyck (ed.), *African Agrarian Systems*, Oxford Univ. Press for International African Institute. xiv + 408 pp. 1963. Price 47s. Polly Hill, *Migrant Cocoa Farmers*. Camb. Univ. Press. xvi + 266 pp. Price 55s.

Fulani and the Masai, who graze their herds over hundreds of miles of savannah in accordance with the seasonal changes in grazing and the periodic ravages of drought and flood.

Concepts of land tenure are complicated in some areas by territorially overlapping 'rights', based on the earlier conquest of one tribe by another. Services or payments in cash or kind may be extracted from the conquered villages; their inhabitants may be forbidden to gather wild produce or to hunt in the forests but still be allowed to cultivate their land in accordance with their own customs (pp. 116-36 and 157-72, dealing with the Toucouleur in Senegal and the Luunda in the Congo). But in almost all areas, the person (or family) who for the time being has the right to farm any given portion of land does so partly in his own interest and partly in the interests of his lineage from whom he inherited his 'right to share', and to whom it will revert on his death, in accordance with complicated and varied customs.

The maximum area cultivated by a family at any one time has been limited by what could be planted and weeded by hand labour in the rainy season. A certain area of cocoa and coffee could be added, since, once established, the trees yielded an annual harvest with little labour. Cotton and groundnuts, however, could only be cultivated in addition to the food crops if extra labour was available. In some areas, the men who no longer hunted and made war turned their energies to these new pursuits; elsewhere, as in Buganda, immigrants from less fertile soils have been employed on cash crops, in return for the right to occupy a piece of land for the production of their own food.

Over much of Africa south of the Sahara there is still land available for adult men to establish their families on traditional lines. Land therefore has no price, though a stranger wishing to farm within the territory of a community not his own will be expected to pay for this privilege; he will render a goat or a chicken or a sum of money in acknowledgement of the 'superiority' (to use a Scottish term) of the community. When, in

the early years of this century, Ghanaian farmers on the crowded ridge to the east of the River Densu began to establish cocoa plantations on the empty western bank, the community 'owning' that territory enquired if "they had come to buy the land outright, or would they hire the land and then give a third share of the cultivation to the owner of the land? Or did they wish to take the land and plant the cocoa till it began to yield and have the farm split into two between themselves and the owner of the land? Or finally would they prefer to hire farms?" (Hill, p. 35, quoting Opoku). The land was mainly bought on instalments which were paid to the chiefs of the land-selling villages as representing the collective 'owner'; henceforth, it came under the customs of the buyers and within the orbit of inheritance by their kinship.

The pattern of these new settlements was influenced partly by geography but mainly, it seems, by methods of joint purchase and operation derived from matrilinear or patrilinear inheritance. For reasons which are not clear, matrilinear inheritance led to settlement in blocks, from which compact plots emerged as cousins and sisters' sons were accommodated with land. Villages with patrilinear inheritance cleared the forest from a base line forward in long strips which were later divided longitudinally between sons, or to which another strip was added by the second generation beyond the end of the first strip. The maps given by Miss Hill of these strip holdings as they have developed over fifty years reproduce the pattern of 'open-field' farming, yet in a totally different environment from the north European plain. It should also be noted that these tree crops implied the extension in time of the 'planter's' right to the harvest, subject only to the right of his kin to share that harvest during his life and after his death; the 'superiority' of the community over the planted land was pushed into abeyance by the long life of these crops during which the rights of individual families were dominant.

But in many parts of Africa the population has reached or exceeded that density which is

consistent with the maintenance of soil fertility in arid land cultivated by hoe with a bush fallow. The symposium indicates that this danger point has been reached in northern Nigeria round Kano (p. 71); among the Xhosa and Nyakyusa of the Eastern Cape Province of South Africa (pp. 374-92); and among the Chewa and Ngoni in northern Rhodesia (p. 371), to quote only three cases. Erosion, deterioration in soil structure, and falling yields under ordinary farming may reduce the value of the traditional 'right to share' until it no longer supplies subsistence. The expedients adopted by such communities to meet this threat are indeed varied, as were, no doubt, those of medieval communities in western Europe in similar circumstances.

Migration of individuals, families, or whole communities is an obvious response to falling yields in the home district, and no doubt it has been in the past the ultimate cause of many local wars. In modern Africa, migration is impeded by the distinctive customs and languages of quite small units, and also by the growing awareness of potential land shortage in many villages which no longer welcome immigrants (p. 65). But young men from the overcrowded areas often seek temporary or periodic employment in the Rhodesian mines, in towns, or in areas of intensive farming such as Buganda, in order to earn the income that cannot be supplied from the resources of their own villages (pp. 193-98). Such selective migration has notoriously evil effects both on the efficiency of local farming in the villages whence the young men set out, and on the social structure of the areas to which they go. (This expedient was, of course, a feature of the Irish economy and of the Scottish Highlands throughout the eighteenth and nineteenth centuries.) A number of governments have attempted to organize the migration of communities into new settlements on uncultivated land, with varying results (pp. 233-41; 149-42). One such scheme, at Shendam in central Nigeria for people from the overcrowded Plateau, has evolved a mixture of strip farming in blocks

under controlled rotations of crops and fallow which closely resembles, again, the pattern of 'open-field' farming (p. 75).

A second expedient is the emergence of a pricing system for land, which carries the implication that those who cannot afford the price must seek other employment or employment in other areas. The emergence of rents and the exchange of land against money shows first in dealings with strangers (p. 370). Conflicts then develop between family heads who may grant plots on a 'lease for life' or on outright sale to strangers in return for labour or for cash, and the expectations of members of the lineage to the free use of whatever land they may eventually want within the territory of their community (p. 255). The concept of price also emerges naturally when land is acquired specifically for the production of cash crops, which can furnish the annual rent, or the purchase price, as well as the ability to acquire food from other sources. The commercially minded Baganda have freely bought and sold land for some decades, at prices which increasingly reflect a 'scarcity value' for the production of the profitable coffee or cotton. The official protection here given to the occupation of land by the customary tenants at controlled rents has only encouraged the renting or sale of 'free' lands to immigrants from other areas (pp. 267-80).

A third response lies in the improved farming which enables a given area of land to yield more per acre. The integration of livestock into the crop economy has not, so far, been generally feasible in Africa, partly because of tsetse fly, partly because water is scarce in the dry season, partly because the hoe cultivation of 2-5 acres per family does not support both humans and large animals. Yet the Chagga, on the moist slopes of Kilimanjaro and surrounded by cattle-hungry Masai, have successfully combined the growing of maize, coffee, and bananas with the feeding of cattle stalled beside their huts, on the 'zero-grazing' principle. The 'mixed farming' scheme of the Northern Region of Nigeria still only includes a few thousand farmers whose operations re-

quire continuous financial support and technical advice; the twenty acres or so required to support a pair of working bullocks as well as a family imply the possession of land and of capital in units outside the range of most families in densely populated areas (p. 70). Meanwhile, a system of intensive crop farming has developed in the last thirty years round Kano, based on a large market for foods, fairly good water supplies, and the use of manure from the town. Farmers here have learnt to dispense with a bush fallow; they cultivate a continuous succession of inter-mixed crops of grain and vegetables which takes account of subtle differences in soil and the varying onset of the rains (p. 76). A large trade in foods has also developed in the densely populated Eastern Region of Nigeria, based on a similar system of continuous cropping and manuring; and round Entebbe and Kampala in Buganda. Where climate and soils are not too unfavourable, the African farmers have adapted their cropping and land tenure practices with remarkable speed to take advantage of economic opportunities, but farmers in the arid and semi-arid regions are more strictly bound by their climate to traditional methods.

These intensive types of farming, whether of annual crops or of tree crops, generally weaken the community's 'superiority' over the land, and strengthen the rights of the

small family to perpetual occupation of the same pieces of land, on which they have planted trees or expended donkey-loads of manure. This trend towards 'ownership' in the modern European sense has been marked among the Baganda; among the Yoruba of Dahomey (p. 313); among the Meru in Kenya (p. 228); among the Beta and Dida of the Ivory Coast (p. 250); as well as among the farmers of the Kano province (p. 77). On the other hand, overcrowding among the Xhosa and the employment elsewhere of many of their young men has strengthened the sense of 'ownership' by the community and its responsibility to provide some land for every family, irrespective of efficient farming (p. 383. A parallel could be found among the Irish and Welsh peasantry in the first half of the nineteenth century, when overcrowding led to boycotts and arson against the families that aggregated farms in order to adopt improved methods of cultivation). Throughout Africa south of the Sahara conflicts have developed between profitable farming and the creation of a landless class, between aggregation of land in efficient units on the one hand and subdivision and equality on the other, between overcrowding on the land and employment in congested towns—the same conflicts that provide the subject-matter for innumerable studies in the medieval history of western Europe.

NOTES AND COMMENTS (*continued from p. 124*)

in 1953. He also announced with regret the impending resignation of Professor Finberg who had edited the *Agricultural History Review* from its first number. The Assistant Editor, Dr Joan Thirsk, was appointed Editor as from September 1964. Membership of the Society had risen from 645 to 678. The Treasurer reported that the financial position of the Society was satisfactory.

At a meeting of the executive committee held later in the day, Dr W. H. Chaloner was elected chairman. It was agreed that the 1965 conference should be held at Keele and that Dublin should be considered for 1966.

FUTURE CONFERENCES

The December conference of the Society will be held jointly with the Association of Agriculture at the London School of Economics on Saturday, 5 December. The annual general meeting and conference will be held at Keele Hall, University of Keele, from tea-time on Wednesday 7 April to lunch time on Friday 9 April 1965.

The International Congress of Economic History will take place in Munich from 23 to 27 August 1965 followed by the Twelfth International Historical Congress in Vienna from 29 August to 2 September 1965.

Book Reviews

CLIFFORD GEERTZ, *Agricultural Involution: the process of ecological change in Indonesia*.

University of California Press (Cambridge University Press), 1963. xx+176 pp. 32s.

This book is a significant contribution to the methodology of agricultural history and an answer to those who scorn interdisciplinary research, quite apart from being a fresh view of the problems of underdeveloped tropical economies. Dr Geertz has written a compelling, beautifully integrated ecological and economic history of Indonesian agriculture, which he conceives as two ecosystems, slash-and-burn and paddy cultivation. Early last century the Dutch drafted seasonally unemployed local labour to create social overhead capital such as roads and dams, producing external economies of advantage to local entrepreneurs. Economic 'take-off' seemed nearer than today. But unprocessed cash crops were drained away to the Netherlands, largely from the enclaves of plantation agriculture which were breeding Indonesian coolies, not factory workers. The expansion of output from native agricultures was mopped up by the growing number of hands which produced it. The Dutch grew rich, the Javanese numerous.

Both paddy and slash-and-burn coped with increasing population and Dutch colonial requirements by 'involution', the perpetual elaboration of tenures and labour organization within existing farming systems. Constantly intensified hand labour raised yields per acre in the paddy areas, but never achieved the technical breakthrough needed to raise output per man. Today there are signs that even this 'static expansion' is ending, since both *per capita* food consumption and the average size of holding are falling. The ecological limits to slash-and-burn are narrower still, for, when over-exploited, the vegetational succession diverges from a tropical forest climax to one of agriculturally sterile *imperata* savannah. From the standpoint of economic growth ever more involved forms of

labour-intensive agriculture are sick responses to population pressure. Java seems much like pre-famine Ireland. Her experience becomes the more poignant when Dr Geertz contrasts it with that of Japan, which achieved economic growth and a capital-intensive agriculture.

The bulk of the book traces the different but equally stultifying steps with which the paddy terraces of Java and the slash-and-burn forests of outer Indonesia retreated from external pressures. This is an illuminating path along which to approach the problems of regional imbalance within low, nearly stagnant *per capita* national income which currently face and shape the Indonesian polity. But besides its intrinsic interest as a case study, *Agricultural Involution* can profitably be read as an example of a novel and purposeful kind of agricultural history.

E. L. JONES

Folk Life, Journal of the Society for Folk Life Studies. Vol. I, 1963. 112 pp. 24 plates.

Published by the Folk Life Society, c/o St Fagan's Castle, Cardiff, Wales.

The first volume of *Folk Life*, published by the Society for Folk Life Studies, is well presented and provides for a wide range of interests. Articles on the countryman's smock, bowl turners and spoon carvers, 'knur and spell' and allied games, and the hand craftsman in the wool textile trade are followed by an account of oral tradition and belief in an industrial region (Bradford) and disguise in English folk drama. There are notes and reviews of books. Those agricultural historians who have explored so many features of the material culture of past rural life will welcome this new journal. Others may think its title calls for some further explanation.

The name *folklivsforskning* (folk-life research) was coined in Sweden in 1909 where it has been regarded as a branch of general anthropology. Western or European regional ethnology rather than folk-life studies

might equally well have been used in Britain as terms to cover, umbrella fashion, a diversity of historically orientated investigations of regional communities and the relationships between their needs, resources, and traditions. So broad a subject might seem to be very much within the historian's field, particularly in England where the existence of a wealth of documentary material has overshadowed other sources of information such as the material evidence, oral tradition, and the more intimate details of landscape.

As compared with much of England, it is hardly surprising to find that in Ireland, Wales, and Scotland, where there are many gaps in the written records and where the elements of traditional folk cultures have survived more obviously to the present day, the methods of anthropology, archaeology, and the study of dialect, among other techniques, have been used to a proportionately greater extent. But what is still held precariously in the memory of old people, or is fast vanishing from homes and work places under the tide of industrialism, calls for systematic field work at a pace and on a scale which today may seem to be beyond the best endeavours of the half-dozen institutions in these islands devoted to folk-life studies.

To make known the urgent need to collect, record, and process information and to gain substantial support from all quarters must be one of the main aims of the Folk Life Society. It is to be hoped therefore that *Folk Life* will follow up Dr Buchanan's paper on Geography and Folk Life given at the Society's 1962 conference by printing other contributions on the scope and methods of closely related disciplines. It is unfortunate that another and important paper on Folk Life Research read at the same conference by Dr Sigurd Erixon, one-time Professor of Nordic and Comparative Ethnology at Stockholm University, could not also have been included in this volume. It was printed, however, in the last and final copy of *Gwerin* (Vol. 3, no. 6, 1962) and should be read by all who are concerned in any way with the study of folk-life.

C. A. JEWELL

HELEN M. CAM, *Liberties and Communities in Medieval England*. Merlin Press, 2nd edn., 1963. xiv+266 pp. 25s.

Readers will welcome this reprint of a collection of sixteen essays from such a distinguished pen. There is always a strong demand for Dr Cam's writings, and this book, first published by Cambridge University Press in 1944, has long been unobtainable. Most of the essays are of only marginal relevance to agricultural history, but it is useful to be reminded of the villein pedigrees by which Dr Cam established that in eastern England in the thirteenth century there were no class barriers at village level along the line of legal freedom and legal serfdom. At the other end of the social scale, the paper on 'The Early Burgesses of Cambridge in relation to the surrounding country-side' is fundamental for an appreciation of the interdependence of town and country in the early medieval period.

CYRIL HART

DAVID THOMAS, *Agriculture in Wales during the Napoleonic Wars*. University of Wales Press, 1963. xiv+196 pp. 30s.

An account of what happened to agriculture in Wales during the Napoleonic wars would be a valuable case study in agricultural history. But it is not to be found in this book which is, in essence, an inflated study of the 1801 crop returns on which Mr Thomas has been usefully and critically engaged in recent years. This analysis he has now supplemented by a discussion of other readily available material—the pre-1801 returns, the population censuses of 1801 and 1811, estate and farm plans, enclosure awards, and the literary evidence of the two sets of reports of the Board of Agriculture together with the topographical writings of the period. The range of material is not unpromising but Mr Thomas's method of procedure is most disappointing. Instead of using these sources as the basis of an account of the course of agriculture in Wales between 1793 and 1815, he discusses each type of evidence in isolation. The source material is merely summarized and not digested. This process is left to the

reader. In this he is little helped by the author who is, in the main, reticent of judgement. In addition, the absence of a bibliography makes it difficult to assess how much material lies behind some of the chapters. But an analysis of the footnotes suggests that, apart from the series of agricultural returns in the Public Record Office, Mr Thomas has made remarkably little use of manuscript material. Are there no farmers' diaries or accounts, no estate papers or manuscript topographical writings which could have been drawn upon to enrich the discussion? As if the segregation of the material were not enough, Mr Thomas has allowed the contents of his particular range of sources to dictate his description of the agriculture of Wales in this period. Wales is now, as it has always been, a predominantly pastoral country. Nevertheless, blinkered by his sources, Mr Thomas has performed the not inconsiderable feat of portraying Wales as a predominantly arable land. It is perhaps characteristic of the book that the frontispiece illustration is of an 1801 crop return for Coity (Glam.) which contains no mention of animals. We emerge from this book no wiser about pastoral husbandry in Wales between 1793 and 1815 than when we began. His discussion of enclosure awards, too, is lacking in precision. There is no discussion of timing or of extent in statistical terms. And his chapter on this subject ends with the limp sentence: "The result of parliamentary enclosure in Wales was that large parts of the agricultural area of the country were modified" though his map (Fig. 8) scarcely supports this contention. So confined, also, is Mr Thomas that he refrains from using material outside his time span, even where it might illuminate the forces at work within his period. Thus, his discussion of the population censuses is restricted to the first two and does not take account of the 1821 census. Finally, even as a geographer in the E. C. Bentley sense, he is less than first class. Considerable effort has obviously gone into the making of the maps but the usefulness of all of them is not immediately clear. And what is one to make of a

map, without relief, labelled whimsically "shires and streams," especially when only thirteen named rivers are given whereas the map of the river systems in Wales in *Wales*, edited by Professor E. G. Bowen (London, 1957), gives twenty-five main catchment areas? Mr Thomas usefully argues that the agriculture of Wales can be discussed under three main headings which he calls highland, peripheral, and ingressive; but he would have been well-advised to present his main discussion under these heads so that the effect of the course of economic events on each area during the Napoleonic wars could be clearly seen. That he has not done so severely limits the usefulness of this volume. If this is, as the sub-title avers, a study in the geographical interpretation of historical sources, then a historical interpretation of these sources would be more than welcome.

W. E. MINCHINTON

GAIUS CARLEY, *The Memoirs of a Sussex Blacksmith*, edited by Francis W. Steer.

Moore and Tillyer Ltd, 1963. viii+74 pp.
 "The head or coachman almost told some of the owners when they could ride their own horses. How different today, when owners sometimes look after their own horses, grooming them and riding them to the forge to be shod." The social gap between blacksmith and owner has narrowed, and many of us have stood listening to the observations and anecdotes of the craftsman who, as he works, may be holding our life in his hands.

This book reads as a smith speaks, bent grumbling over the hoof. "The silly men or riders who often used to say make the shoe thicker where he wears it most. This is wrong as the horse is finding its bearing and the metal could make him uncomfortable unless put there for surgical reasons by a vet's order." "The owner who told me to lower his horse's heels because he stumbled. Wrong he was. The shoe should be rounded off a bit and the heels raised to help the foot over." The smith's independence and pride dictated his reply: "I will shoe him my way."

Patient with horses, albeit firm when neces-

sary, smiths are often short-tempered with their fellow men. As with cooks and stokers, it is perhaps the intense heat near which they work that engenders a choleric disposition. Gaius Carley, as he moved from one village to another, from job to job, had often to fight with his fists to establish himself and his independence.

Horse-shoeing was not Carley's only trade. In accordance with the ancient Sussex tradition he worked in wrought iron. The intimate knowledge acquired of various villages, their inhabitants and houses, makes this book a valuable source of information to the local historian.

H. A. BEECHAM

W. H. BARRETT, *Tales from the Fens*, edited by Enid Porter. Routledge & Kegan Paul, 1963. xiii+204 pp., illus. 28s.

This book consists of a collection of traditional tales, in some cases handed down through many generations. Attempts to date the events narrated have been made, sometimes with curious effect: as when the setting of an old woman to break stones on the roads, when she had had to "go on the parish," is said to have taken place *circa* 1870. The descriptions of the Littleport Rising of 1816, and of the events of 1845, the hungriest year of all the Hungry Forties, have the freshness and authenticity of eye-witness accounts.

The old flood laws, said by a local lawyer to have been "kept since long before Ely Cathedral was built," were just, though harsh. Breach of them, and of many fen customs and traditions, met with deadly reprisal. Murder was safe and easy when bogs were everywhere to obliterate the evidence.

Through these tales, often sinister and sometimes macabre, there flits a succession of Cambridge scholars. These were gentle and generous, well-liked, and a little laughed at by the hard-living fenlanders. The scholars fished, questioned, explored, and, indeed, expropriated: a mantelshelf carved on by Alfred Lord Tennyson to a college room; a pointed arch built of clunch stones to a

Cambridge garden. Bone fish-hooks made by French prisoners of the Napoleonic wars were identified as thousands of years old, and an implement for catching rats, made by the local blacksmith, was later displayed in a glass case at Cambridge, labelled: "Fish trident of the Iron Age, dug from Feltwell Fen."

This is a book which social and economic historians will find stimulating and informative. To those who study folk tales and legends, it is an essential purchase.

H. A. BEECHAM

NORMAN POLLACK, *The Populist Response to Industrial America*. Harvard University Press, 1962. 166 pp.

A great deal of scholarly dust is being raised in America about the real character and significance of the Populist movement at the end of last century. While there is agreement that it was an agrarian protest against industrial capitalism, the debate turns on whether its nature was progressive or retrogressive. Many young scholars with an urban and recent-immigrant background suspect the white Protestant Populists on grounds of race and religion, thus neatly reversing older prejudices.

The author squarely challenges this view and argues forcibly by the method of copious illustration from the original sources that Populism was truly progressive, separated from socialism only by "a fine line." Despite a neat methodological frame backed up by the ebullient self-confidence of the author, it does not really convince. Campaign orators and small-town newspapers can be violent enough in their language in a time of crisis, but it is important to remember that they rarely understand the full implications of the radical phrases they use and have no intention of following them out to their logical ends. The hard fact remains that the Populist farmers were maddened by material sufferings and quickly recovered their sanity when better times came round.

E. R. R. GREEN

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