

## Issue 24 | January 2013

the Lord Berwick – see page 6

Above: A Hereford bull owned by

The research is based on the tran slated records of the annual audit of demesne farms on the manors of St. Swithun's Priory and the Winchester episcopal/bishopric estates using John Drew's unpublished typescripts of the St Swithun's Priory manors of Houghton, (1248-1331), Michelmersh, (1248-1331), Chilbolton, (1248-1433), Silkstead, (1267-1396) and Silkstead compotus roll, 2, 1267-1566, held in the Hampshire Record Office (HRO), and Mark Page, ed, The Pipe Roll of the Bishopric of Winchester, vol.1, 1301-02, 1996 & vol. 2, 1409-10, 1999.

## Vetches in Medieval farming

Using the documents of Winchester Abbey, Gavin Bowie re-considers the use of pulse crops for animal feed on the Hampshire chalk uplands in the late-medieval period

The introduction and spread of pulse crops (nowadays called grain legumes) in late-medieval England has been described elsewhere (Bruce M.S. Campbell, The Diffusion of Vetches in Medieval England, Economic History Review (EHR), 2nd ser., vol. 41, no. 2, May 1988, pp 193-208).

It is evident that their cultivation was an important part of the prevailing farming system on the Hampshire chalks in terms of the provision of winter fodder, but little has been published about how the crops were cultivated and how they were used as animal feed. This short paper aims to fill this gap, and also challenges a current theory about pulses and their function in latemedieval agriculture. In a paper written in 2003 David Stone claimed that pulses were grown as a substitute for meadow hay after the Black Death, that these pulse crops were inferior in feed value to meadow hay and that this change in fodder provision was a major reason for a deterioration in the health and welfare of flocks in the late 14th century (David Stone, The productivity and management of sheep in late-medieval England, Agricultural History Review (AHR), vol 51, pt 1, 2003, pp 1-22, particularly pp 7-9). However it will be explained here that in reality in the late-medieval period pulses hay provided the opposite of what he has claimed - that is a high protein feed supplement with medicinal properties.

The pulses available to the late-medieval farmer were beans, peas and vetches. Beans grow better on heavier loams, and peas and vetches perform better on medium and light loams. Peas and vetches were first grown as a crop on some of the Winchester bishopric manors on the Hampshire chalks in the early 13th century, and peas were usually denoted as lenten vetches. These pulses were innovative in that they were the first of such crops that were grown on fallows, and can be regarded as the precursors of the fodder crops introduced in the 17th century (Caroline Lane, The Development of Pastures and Watermeadows during the Sixteenth and Seventeenth Centuries, AHR, vol 28, 1980, p 29).

Pulses were grown on a limited acreage of the full fallow in the usual 2 or 3 'field' systems This was after



Vicia Sativa or common vetch has been cultivated as an arable field crop in England since the late 12th century.

the spring grains had been harvested in late summer one year, and before wheat was sown in autumn the next year; they normally constituted 5-15% of the total arable acreage (Hampshire Record Office, J.Z. Titow, Field crops and their cultivation in Hampshire, 1200-1350, unpublished paper, nd, p 9).

Winter vetches were sown in September, and peas were sown between late February and mid-March, depending on weather conditions. In both cases the seed was broadcast first, and followed by a shallow ploughing to bury the seed and try to avoid the depredations of pigeons and crows. In such ploughing the furrows were made shallow so that most of the seed did not end up more than 2 inches deep, and also close together so as to make a fairly flat seedbed (C.W. Chalkin, Agriculture in Kent in the 17th century, 1965, pp 82-83). Both winter vetches and spring peas have a peak nutritional value for only about 2 or 3 weeks around harvest, and in the late-medieval period were not used as a green feed and were converted into a dry crop instead. Hence they were treated in the same way

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# The experience of farm women during World War Two

Immediately after the War, it was frequently said that the first condition to be met, if the land was ever to remain in good condition and fit for purpose, was the maintenance of skilled agricultural labour. This was an argument that had already gained currency in the 1930s.

Karen Sayer is Professor of Social and Cultural History at Leeds Trinity University College where the history of women in farming is one of her research projects. To keep the skilled labourer on the land, and therefore farming in a fit state given the prospect of war, it was widely believed that it would be necessary to improve the condition of the farm houses and cottages. As Sir George Stapledon put it in the Way of the Land (1942): "There is hardly a district where housing conditions are in toto adequate or fit for a robust rural population. Something is always wrong.' Viscount Astor and B. Seebohm Rowntree in Mixed farming and Muddled Thinking, (1946) for instance, were absolutely certain that the provision of 'Water and Electricity Mains' were crucial to the improvement 'not only in the quantity and quality of the milk supply, but also in the health of the rural population generally.'

One problem was often an absence/lack of cottages and therefore continuity of living in, which Stapledon said the farmers' and labourers' wives loathed; another was the dire condition of the cottages and farmhouses. So, he stated of the investment required: 'First the houses and cottages, then the workers and then the farming.' Arguments like this unwittingly came to place the farmer's/labourer's wife centre stage, as it was the



Peel House Farm, Skipwith, Yorkshire 1925–30.

Mr and Mrs Dixon with daughter Sarah, baby Margaret and servant Anne (Yorkshire Museum of Farmina)

women who principally had to tackle the daily/weekly round of cooking, cleaning, washing. And, together with the testimony of those who lived and worked at the time, they tell us a lot about life in the British countryside before and during the Second World War.

Irene Megginson, who wrote occasionally for the home section of Farmer's Weekly in the 1940s, described joining a farming family in Yorkshire during the war, and helping her future mother-in-law with the housework. She had to learn both how to do that housework, and how to do so with what she identifies as 'a lack of "mod. Cons." - amenities taken for granted by most townspeople then, and almost all country folk now.' In describing the farm she notes that, there 'was no electricity of course, and lamps or candles were our only illumination.' The radio had 'batteries that needed "charging" at a garage'. They had a bathroom, but the number of baths was limited by the extent of 'pumping up' required – 20 minutes of hand pumping in the back kitchen to get the tank to the right level - they used a copper for washing laundry, and baked in coal-fired ovens. The first tenancy that she and her husband got, for a farm of 147 acres, had neither electricity, nor, initially, mains water. Though the farm did have a 'Yorkist range in the kitchen,' to which they were able to add a back boiler once they had the mains connected, 'wash days still involved boiling water in a copper'.

Even simple jobs took a long time. So, the introduction of relatively simple equipment like a paraffin stove, or a small bottled gas stove, for cooking, could make a great deal of difference. 'About this time,'

Pegson Ltd advert from Journal of the Farmer's Club 1945

(c. 1943) Megginson says, 'we had a great improvement in our cooking arrangements. A two-burner Calor gas stove with a grill was bought and installed on a little table near the kitchen range with the cylinder sitting underneath. What luxury! It was such a joy to poach eggs and stir custard without the danger of smutts dropping in. The pans got so black on the fire too, and inclined to burn on one side. Now I could grill sausages or chops when we could get them, and that single little cooking stove was the most labour-saving gadget I'd ever had.' Once their fourth child was born in 1947, (when they had 'four under five',) she cut back on her indoor work - she stopped making her own bread for instance - and installed a hard-wearing carpet in the kitchen to reduce the amount of floor washing required.

The women also had responsibility for a lot of the tasks in and around the farm, as they always had done: looking after the hens, for instance, not simply feeding them and collecting the eggs, but also rearing the chickens, lighting the Tilley lamps in the winter, managing the deep litter, washing and preserving the eggs. Fuel, ('sticks'), had to be collected for the fires, cows had to be milked (often this was still done by hand), the milking utensils washed and the milk cooled. Given the focus on raising production because of the war effort, the production records also had to be overseen, a job that was as likely to fall to the farmer's wife as to the farmer himself. None of this looks like 'war work', but it was these conditions shaped rural women's experience of the Second World War.

Rural women were also tasked with looking after evacuees billeted on them, and this could be an additional domestic burden. It's very hard to know exactly how day-to-day life was managed in this case, but the Women's Institute collected information at the time, and wrote a report on the subject, Town Children Through Country Eyes (1940) which showed that conditions in the country were hard. It also recognised that many of the children evacuated were very anxious and stressed, something which had not really been thought through in the preparations for evacuation, that there were uncalculated burdens in the mix of, for example, ruined bedclothes and extra washing, and a large gap between the experiences of country people and the children and women evacuated from the towns. As Maggie Andrews has pointed out, country women frequently felt that this aspect of their War work was not really appreciated, unlike, say munitions work. The WI, perhaps most famous for their preservation and jam making, did their best to address the very real needs of evacuees, and another organisation that similarly helped out in very practical ways was the Women's Voluntary Service. The work of the WVS underpinned the war effort as a whole, and in country areas included the Agricultural Pie Scheme: a plan from 1941 to get food out to those working in the fields that did not have easy access to the British Restaurants. On average they delivered 1,324,000 pies a week.



of the

FOR THE HOME

AT DOWNING STREET

ar Downing Sirker ime Minister and Mrs. Chamber-take over a vastly improved "when the alterations effected Office of Works are completed. occupants in recent years have

A GAYER GARDEN

The gardens of No. 10 and No Downing Street are combined, makin large enough for the parties which Prime Minister's wife or the wife of Chancellor of the Exchequer may

MAREL HADLEY

## **MUSEUM NEWS**

An 18th century cottage has now joined the many fine buildings re-erected at to the Weald and Downland Museum at Singleton, East Sussex.

Placed on a woodland edge on top of the hill between Bayleaf Farmhouse and Poplar Cottage, it provides a significant link in the development of domestic buildings. After being fully recorded, it was dismantled in 1974 in advance of the creation of Bewl Water Reservoir. Tindalls Cottage is timber-framed with a large stone and brick chimney. After dismantling, the timbers had to be examined in detail to determine the levels of restoration needed. Once this work was completed a new site had to be agreed upon, funding had to be sought, and, re-erection could begin. The frame was put together, timber by timber and raised on its new foundations over the weekend 22/23rd September in front of an audience of 1,500 people. When completed the cottage will be furnished as it might have been in 1765 when occupied by the first John Tindall who lived there from 1748. For further information visit the museums website www.wealddown.co.uk

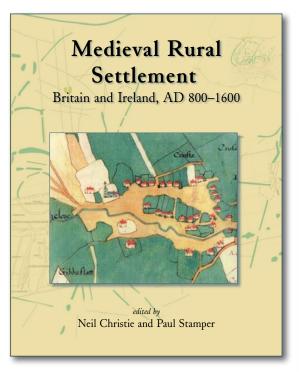
'A London Woman to her Country Relatives'. Home supplement to the Farmer & Stockbreeder 15th Feb 1938. The woman in the picture patented the hand-operated washing machine pictured.

## **RECENT PUBLICATIONS**

# Publications about medieval rural settlement: a landmark year

Publications from the later months of 2011 up to September 2012 have amounted to an annus mirabilis in medieval settlement studies, when we see previous discoveries being evaluated, and the opening of new vistas.

Professor Chris Dyer of the Departhment of Local History, University of Leicester describes some of the recent publications on Medieval rural history.



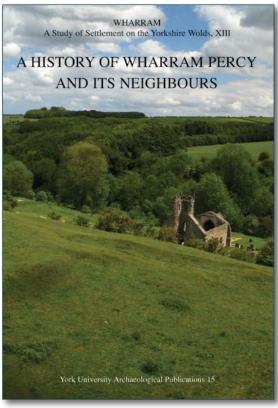
Neil Christie and Paul Stamper: in *Medieval Rural*Settlement. Britain and Ireland, AD 800–1600

Follows in the footsteps of books published in 1971 and 1989, providing in a series of essays a new synthesis of current knowledge and a survey the development of the subject. It look at methods of investigation, and locates villages and hamlets in the context of castles, manor houses and towns. Chapters by different specialists sum up the state of research in each region and country, including Ireland with plenty of indicators of future avenues of inquiry.

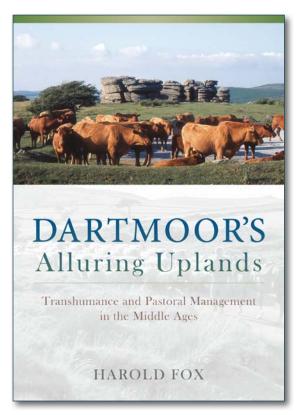
### A History of Wharram Percy and its Neighbours,

edited by Stuart Wrathmell is a synthesis of the results from one of the most celebrated and influential projects of the late twentieth century. This is much more than a summary of the findings: rather a succession of novelties are revealed, including Wharram's importance as a large Middle Saxon settlement, and about its last phases. This single village in Yorkshire has taken on a representative role, which means that

thinking about the prehistoric and Roman legacy, nucleation in the first millennium, the way of life of peasant communities, and their ultimate decline have developed at Wharram and have been applied elsewhere.



Another local study is the late Harold Fox's *Dartmoor's Alluring Uplands*. Transhumance and Pastoral Management in the Middle Ages which presses forward the study of the exploitation of pastures, and the example of Dartmoor aids our understanding of moors and uplands in all parts of these islands, and beyond. Another south-western landscape has been subjected to a very scientific dissection, in Steve Rippon's Making Sense of an Historic Landscape which considers the varieties of countryside around the Blackdown Hills. The complex and detailed analysis of the data will be a hard act to follow, but the lessons deserve to be applied in other regions.



We have long known that newly excavated evidence for Anglo-Saxon settlements was accumulating from the recovery of information before sites were destroyed by modern development. Some have been fully published, while others have yet to appear in print. A much needed survey of the evidence is provided in Helena Hamerow's *Rural Settlements and Society in Anglo Saxon England*, which opens up new dimensions of rural life in the period 400-1000, with chapters on communities, domesticity, farming and exchange. Space does not allow every publication in this remarkable year to be discussed here, though mention should be made of Sam Turner and Bob Silvester's *Life in Medieval Landscapes*, which celebrates the memory of Harold Fox with appropriate essays.

Just before the beginning of this fruitful year an entirely new venture in applying place-name studies resulted in *Thorps in a Changing Landscape*, by Paul Cullen, Richard Jones and David Parsons; and at the end of the year two important books are imminent: *Interpreting the English Village: Landscape and Community at Shapwick, Somerset*, in which Mick Aston and Chris Gerrard provide a readable account of a famous research project, and a new synthesis of standing buildings by Nat Alcock and Dan Miles called *The Medieval Peasant House* in Midland England is eagerly anticipated.

▶ Publishers: Christie & Stamper, Turner & Silvester, and Aston & Gerrard: Windgather (Oxbow); Wrathmell: York Archaeology; Fox: Exeter UP; Rippon, and Hamerow: Oxford UP; Cullen, Jones & Parsons: Herts UP; Alcock & Miles: Oxbow.

## FORTHCOMING CONFERENCES

### **BAHS Spring Conference**

#### 8-10 April 2013

▶ The 2013 Spring Conference will be held at Askham Bryon College, near York from 8-10 April. Speakers include Professor Michael Turner (University of Hull) on the hidden history of 'yeoman' survival in the twentieth century, Dr Paul Brassley (University of Exeter) on technical change in agriculture in the mid-twentieth century using evidence from the south-west Farm Management Survey, and Professor Joyce Burnette will jopin us from Wabash University, Indiana to speak on the utility of 18th and 19th century farm account books. There will be a New Reasearchers' Session which this year will feature three papers from scholars researching various issues connected with early modern rural history. The conference fieldtrip will visit the recently restored Coulton Mill, Hovington, which has documentary evidence of its use dating back to 1230. Nigel Copsey, the project manager and historian will present a history of the mill and farm buildings on the visit.

## Transforming the countryside? The electrification of rural England, 1890–1970

Leeds Trinity University/ Interwar Rural History Research Group Saturday 9 March 2013

▶ The arrival of mains electricity had major implications for agriculture, industry and domestic life in rural areas. As late as 1938 less than one in ten farms had an electricity supply although already two-thirds of rural dwellings had been connected to the mains. Reaching the remainder was a long-drawn out process. Surprisingly, however, there has been little academic investigation of this vast, protracted undertaking.

If the process by which electrification occurred remains unclear, the consequences, both economic and cultural are even more so. All these topics will be discussed at this important one-day conference.

Further details from Karen Sayer:

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## The 5th Lord Berwick and the Attingham Herefords

Richard Noel-Hill, the soon to be 5th Lord Berwick, was born in 1800 and inherited the Attingham estate in 1848. The estate by this date was heavily encumbered and the family had moved out of the hall to live in rather less grand style in the John Nash villa at Cronkhill employing in 1851 no more than a house keeper, two general servants, a groom and a stable boy.

Claude Hart spent much of his working life in London, mostly in the advertising industry. On retirement he moved to Shrewsbury and became a volunteer at Attingham Park. He has always been interested in agricultural matters but his particular interest in the 5th Lord Berwick's herd was triggered by a print of the RASE's meeting in Bristol. Hes would welcome any additional information that readers may be able to pass on to him. (burtonhse@ btinternet.com)

In common with many of the landowners of his time, he developed an interest in breeding pedigree livestock, and as well as trotting ponies and decorative fowl, he chose to concentrate on Hereford cattle. This interest began before he inherited as his first purchases being made at the Ashley Moor sales in 1844 at which he bought some grey heifers, and also a famous grey bull named Tom Thumb, which was to become a successful Attingham sire.

Hereford cattle at this date were not always the red and white beasts we see today. The breed can be traced back, in some form or other, to mediaeval times and, some believe, originated in specially bred oxen. However, the first true representation of one of the species is to be found in a painting by George Garrard, of 1811, showing the famous 'Oakley Hereford bull', where it stands in the centre of the picture. It is worth noting that most of these early Hereford competitors were from outside of the county itself. For example, the Duke of Bedford at Woburn was a great enthusiast of the breed. In British Farming - a description of The Mixed Husbandry of Great Britain, written in 1862, Herefords are described as 'admirable graziers' cattle, and when of mature age and fully fattened, present exceedingly level, compact, and massive carcases of excellent beef. But the cows are poor milkers, and the oxen require to be at least two years old before being put to fatten'. The fact that they took so long to mature led the author of British Farming to postulate that graziers would eventually prefer the Short-Horn breed which matures earlier. He also states that Hereford breeders should try to emulate the Short-Horns' earlier maturing or 'we may expect to see them more and more giving place to Short-Horns'. However, Herefords have remained a popular if minority breed, still much valued for the quality of its beef.

While by 1840, the accepted Hereford colouring was light or dark red with a white face, frequently with white marks on the neck, along the back and on the underparts of the body, some had mottled faces and a greyish body described as 'mottled' and 'silver or pigeon'. The literature states that Lord Berwick had a preference for the greys and in breeding from some of his prize beasts could not have known that

the grey strain would not come out in their progeny. However for Lord Berwick 'no good animal was ever a bad colour'. In fact, his purchases of cattle were always dictated by quality not colour. A show entry, from 1852, states:

'The Rt. Hon. Lord Berwick, of Cronkhill near Shrewsbury, a 3 year, 6 month and 2 days old red and white Bull - 'Albert Edward', bred by His Lordship, sire Wonder, dam Victoria'. The last grey from Cronkhill was shown at Lincoln in 1854 but did not win a prize. Volume two of the Hereford Herd book (1851-1867) lists all of Lord Berwick's animals while the third volume lists twenty-eight beasts still remaining of Lord Berwick's original herd. Over the years, according to Saddle and Sirloin, or English Farm and Sporting Worthies, by 'The Druid' published in 1870, 'His Lordship won 27 firsts and seconds at the Royal Agricultural Shows.' Typical names of his winners were Hotspur, Albert Edward, Silver, Walford and Severn. Lord Berwick died in 1861 when much of his herd was dispersed. There were 176 lots, 'the males averaging £40 the females £28. 'Silver' was sold for 65gns, with her calf, and seven of the tribe made £373 16s'. 'The Druid' went on the reminisce that 'As you loitered through the boxes (at Cronkhill?) you could sometimes see three great yearling bulls of the heavy-fleshed Silver ... amicably hob-nobbing together' A History of Hereford Cattle states that the 5th Lord Berwick's brother, the Hon. and Rev H.N. Hill, continued the family interest in the breeding and many animals were sold and subsequently bred from, so good was the stock. Progeny were still sought after in the 1880's. In the year 1882-3, no less than one hundred and four pedigree Hereford animals were exported to North America.

A distant relative of the family, John Hill, was responsible for uniting the scattered remnants of the Cronkhill herd and preserving them for posterity. The Attingham genes were still going strong in 1922.

That Lord Berwick took a particular pride in his stock is shown by the fact that between 1851 and 1859 he employed the eminent livestock artist W.H.Davis to paint thirteen portraits of his prize Herefords, one of which shows the Cronkhill villa in the background. In all Davis produced over 160 livestock portraits and was



Hereford cow near Cronkhill Farmhouse 1858 by W.H.Davis. By kind permission David Houlston, National Trust

employed by leading breeders of his day such as Lord Spencer as well as preparing engravings for *The Farmers' Magazine*. He deserves recognition not only as a painter but above all for his contribution to the agricultural record of his day. He witnessed, recorded and indirectly helped to foster the improvements of British livestock. For both agricultural and art historians, his legacy of paintings and prints remains to be fully appreciated.

The Hereford Herd Book was started in 1846 and contained the records of 551 bulls entered by 75 breeders. There were four varieties of colour which prevailed at that time. To illustrate the categories, coloured prints of four bulls were reproduced in this first edition:

4 WELLINGTON, MF, calved 1808, bred by Mr. B. Tomkins, purchased at Mr. Price's sale, 1816, by Mr. Jellicoe, of Beighterton, for £283 10s. and afterwards passed into the possession of Mr. Germaine. He was considered by the late Mr. B. Tomkins the best bull he ever bred, his Silver Bull excepted, and also the best stock-getter.

485 BROXWOOD, LG, calved 1843, bred by Mr. J. Rickets, by Hope (439) dam, Charity, bred by Mr. Rickets, by Charity (375) g. dam, Beauty, bred by Mr. Rickets, also the dam of Conservative (478)

33 VICTORY, G, calved 1839, bred by Mr. J. Price by Blenheim (26) dam, Dove, also dam of the General (31) to which refer for her pedigree. Victory was purchased by Sir F. Lawley, at Mr. Price's sale, 1841, for £100.

376 COTMORE, WF, calved 1836, bred by the late Mr. T. Jeffries, by Old Sovereign (404) dam by Lottery (410). At Mr. Jeffries's sale, 1844, Cotmore was bought in for £100; he won, at different times, the prizes for two-year-old, three-year-old, and aged bulls, at Hereford; and the first prize for Hereford bulls, at the Meeting of the Royal Agricultural Society at Oxford; Cotmore's dam, at the Grove sale, 1844 was sold for £33.

#### **Footnotes:**

The archives at Attingham have come up with some medals awarded to the 5th Lord Berwick:

- 1 x Smithfield Club silver-plated Exhibition medal of 1865, as Breeder of Best Beef in Class 8, engraved 'The late Lord Berwick'
- 1 x Shropshire Practical Farmers' Society, for best Yearling Heifer, exhibited 1846
- 1 x Midland Counties Exhibition for Various Fowl, 1849
- 2 x Birmingham and Midland Counties Cattle and Poultry Show for Golden Spangled Hamburgh Chickens, 1856.
- 1 x Birmingham and Midland Counties Exhibition, for ducks (2nd Prize), 1857
- 1 x Birmingham and Midland Counties Exhibition, for ducks (2nd Prize), 1858
- 1 x Exhibition Medal as Breeder Best Beef, 1865 (by whom was this shown?)

### **Sources:**

Illustrated London News,

1840 to late 1860's

Saddle and Sirloin, Rogerson & Tuxford, London 1870 A History of Hereford Cattle, Duckworth, London 1983 British Farming, Adam & Charles Black, Edinburgh, 1862 Harvests of Change, Quiller Press, 1988 Bonhams, Auctioneers, Web site Hereford Herd Book, Volumes Two and Three Census Returns: 1841, 1851, 1861

Rural History Today is published by the British Agricultural History Society. The editor will be pleased to receive short articles, press releases, notes and queries for publication.

Articles for the next issue should be sent by 30 May 2013 to Susanna Wade Martins, The Longhouse, Eastgate Street, North Elmham, Dereham, Norfolk NR20 5HD or preferably by email scwmartins@btinternet.com

Membership of the BAHS is open to all who support its aim of promoting the study of agricultural history and the history of rural economy and society. Membership enquiries should be directed to the Treasurer, BAHS, Middle Blakebank, Underbarrow, Cumbria, LA8 8HP Email: taxcaddy@aol.com.

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as a meadow hay crop, that is, cut and air dried on the ground in about June, and then stored in the rick for late autumn, winter and early spring feed.

Peas and vetches appear to have been treated primarily as cash crops on the Winchester ecclesiastical manors before the early 14th century. Sufficient seed was kept back for sowing the next crop, but most of the rest of the yield was threshed and sold off-farm as seed, as for example on the bishopric manors of Crawley, Droxford and Merdon at the very beginning of the 14th century. Vetches were also used for human food at this time, as for example on the priory manor of Silkstead in 1299 when the whole of the net yield (14.5 qtr) of winter vetches was threshed and mixed with barley as a part of the wages for the famuli (permanent staff); meanwhile all of the net peas crop (12 qtr) was threshed and sold.

However it is evident that the feed value of these pulse crops for livestock (as a function of nutritive value, trace elements and digestibility in the rumen) was appreciated only a few years later in the 14th century. At Silkstead in 1315 the winter vetches yield was 16 qtr of which 3.5 qtr was kept back for seed, 9 qtr was sold and 3.5 qtr was fed as hay to the manor's sheep. Thereafter there is an increase of references to vetches and peas hay crops being fed to a manor's own livestock, particularly after the Black Death (there were 2 main plagues, 1349 and 1361). It is significant that the hay at Silkstead in 1315 was described as being 'in husk' or 'in the pod' (that is where the seed pods were left adhering to the crop), which would further increase the protein value of the hay. It is evident that by the early 15th century very little of these pulse crops were sold, and nearly all of the net yield was kept back as a hay crop in husk for a manor's own livestock. This shift is clearly evident on the bishopric manors of Crawley, Droxford and Merdon which are mentioned above.

Such hay in husk provided a high protein feed supplement that was used for the treatment of ailing or feeble farm animals. Take for example the following bishopric manors in the early 15th century. At Overton, North Waltham and East Meon manor, the whole of the net pulses yield was given as dry feed to ewes, young sheep and 'other feeble cattle'. Similarly at Bishops Sutton the pulses were reserved for 'sheep, cart horses and other feeble cattle' in winter. At Beauworth 5% of the arable had been sown with pulses, and the whole of the net yield devoted to 'feeble plough horses and sheep'.

It can also be shown that peas hay in husk was particularly valued at lambing time. This would be partly because it was a high protein feed but also because it acted as a vermicide to help prevent the young lambs from being infected with intestinal worms. Peas contain about 20% protein, and the tannins in the seed coat act as a vermicide. There is evidence for the different uses of vetches and peas on the bishopric manors. At Twyford the peas crop (estimated 8 quarters in husk) was devoted to 'supporting the ewes at lambing time',

and the vetches (8 qtr. in husk) used 'in supporting sheep in winter'. It was similar at Merdon, though in this case the 8 quarters of vetches were used in supporting calves as well as sheep during the winter. Finally at Crawley the peas crop (5 qtr) was used 'in supporting ewes at lambing time', and the vetches (10 qtr) in 'supporting sheep, horses and other cattle in winter'.

Clearly pulses hay was so valued that its cultivation was probably only limited by its cost of production. It was 3 to 4 times the price of meadow hay in the late 14th and early 15th centuries, as for example on the priory manor of Chilbolton, Hampshire downs, in 1406 where a cartload of meadow hay was valued at 2s. 4d. and a cartload of vetches hay at 9s. 2d. Pulses were more expensive than meadow hay because of the extra costs of cultivating an arable crop, they were not the easiest of crops to grow and their seed was difficult to thresh.

It should now be understood that during the latemedieval period pulses hay had a specific function in the provision of autumn and winter feed rations on this chalk hill country. These rations consisted of meadow hay (most of which had to be brought or bought in from lowland pasture off the chalks), chopped straw (wheat, barley, oats) and pulses hay in husk. A good example of the function of pulses hay was when extra feed had to be bought in on the bishopric manor of Crawley, Hampshire downs, during the very severe winter of 1434-35. The extra feed consisted principally of 13 cartloads of meadow hay and 20 of straw, both of which were intended to provide sufficient bulk, fibre and nutrients to help keep the sheep alive during the exceptionally severe weather. However only 3 cartloads of peas and beans hay were purchased, which shows that just enough of the expensive pulses hay was bought to provide for the estimated need for a high protein feed supplement for palliative and medicinal purposes (M.J. Stephenson, Wool Yields in the late-medieval economy, EHR, 2nd ser., vol. 41, no. 3, August 1988, pp.383-84).

To conclude, the relatively high production costs of pulses hay compared with meadow hay would have precluded its cultivation as a substitute for meadow hay as David Stone has claimed. Also, on the Hampshire chalks at least, contemporary evidence is lacking for an increase in the cultivation of pulses crops to compensate for a decline in meadow hay purchases. In reality the acreages of pulses crops declined as did the arable grain crops after the Black Death. Finally it has been shown that pulses hay in husk was not only recognised by contemporaries in the late-medieval period as being superior in feed value to meadow hay, but was also cultivated specifically to provide a high protein feed supplement for medicinal purposes. This means that such pulses crops could not possibly have contributed to an increase in sheep mortality during the late 14th and 15th centuries, or have had a negative impact on the health and welfare of flocks, as Stone has claimed.

Helpful advice has been given by Joan Thirsk, Chris Dyer, John Hare, John Martin, Henry Edmunds of Cholderton and Martyn Fletcher, head shepherd at Chilbolton Down Farm.