

ART. VIII – *Demesne livestock farming in the Lake District: the vaccary at Gatesgarth, Buttermere, in the later thirteenth century.*

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GATESGARTH Farm, at the head of Buttermere, has been famed for the breeding of Herdwick sheep for more than a century, since “old” Edward (Ned) Nelson took over the estate in the mid-nineteenth century. But in the thirteenth century Gatesgarth was a demesne cattle farm, or “vaccary”, belonging to the lords of the honour of Cockermouth. The survival of surveys and account rolls from the Cockermouth estate between 1259 and 1318 sheds rare light on medieval stock farming in the heart of the Lake District and enables a vivid picture of the vaccary at Gatesgarth to be reconstructed.

The hills of the medieval North were, as Edward Miller put it, “cattle country” in the thirteenth century.¹ Most of the Pennines and Lake District fells were technically hunting forest or chase, land over which the great lay landowners retained direct control. By the later thirteenth century the area preserved as hunting forest had shrunk to cover only the upper reaches of the dales and preservation of game seems to have become secondary to the desire to exploit the dales and fells as pasture. Various strategies were employed. Some upland forests, notably those in the Lake District, were settled by peasant communities who yielded rents and services for the lands they enclosed. Other areas were retained as private demesne pastures, some exploited through agistment; others as directly-managed stock farms, of which vaccaries were one category.²

Vaccaries were particularly numerous in the Pennine forests such as Bowland, Pendle, Wensleydale, Mallerstang, Swaledale and Arkengarthdale, for example.³ There were fewer vaccaries in the medieval forests of the Lake District, but several are recorded at the head of the western dales. As well as Gatesgarth, there were groups of vaccaries in the forest of Copeland, at Wasdalehead and Gillerthwaite in Ennerdale, belonging to the barons of Egremont, while Furness and Fountains abbeys had vaccaries at Brotherilkeld in Eskdale and Stonethwaite in Borrowdale respectively.⁴ The term “vaccary” has been used since the late middle ages to translate the word *vaccaria*, derived from the Latin *vacca* (cow), which was used by medieval estate managers in two distinct ways. On the one hand it is clear that *vaccaria* could refer to a building, a cow house or byre; but it is equally clear from its use in estate accounts that the term was also used of stock-rearing establishments as a whole and came to refer to a settlement and its associated pastures. The hamlets which had developed on the sites of medieval vaccaries in the forests of Over Wyresdale and Pendle, in Lancashire, for example, continued to be called vaccaries well into the post-medieval centuries.

What, then, was the nature of these places to which the label *vaccaria* was given? Most surviving estate records from the upland forests of the north date from the fourteenth and fifteenth centuries, by which time direct demesne exploitation had ceased and the vaccaries and other private pastures had been leased. Most references, therefore, simply record the rent paid by the tenants of named vaccaries

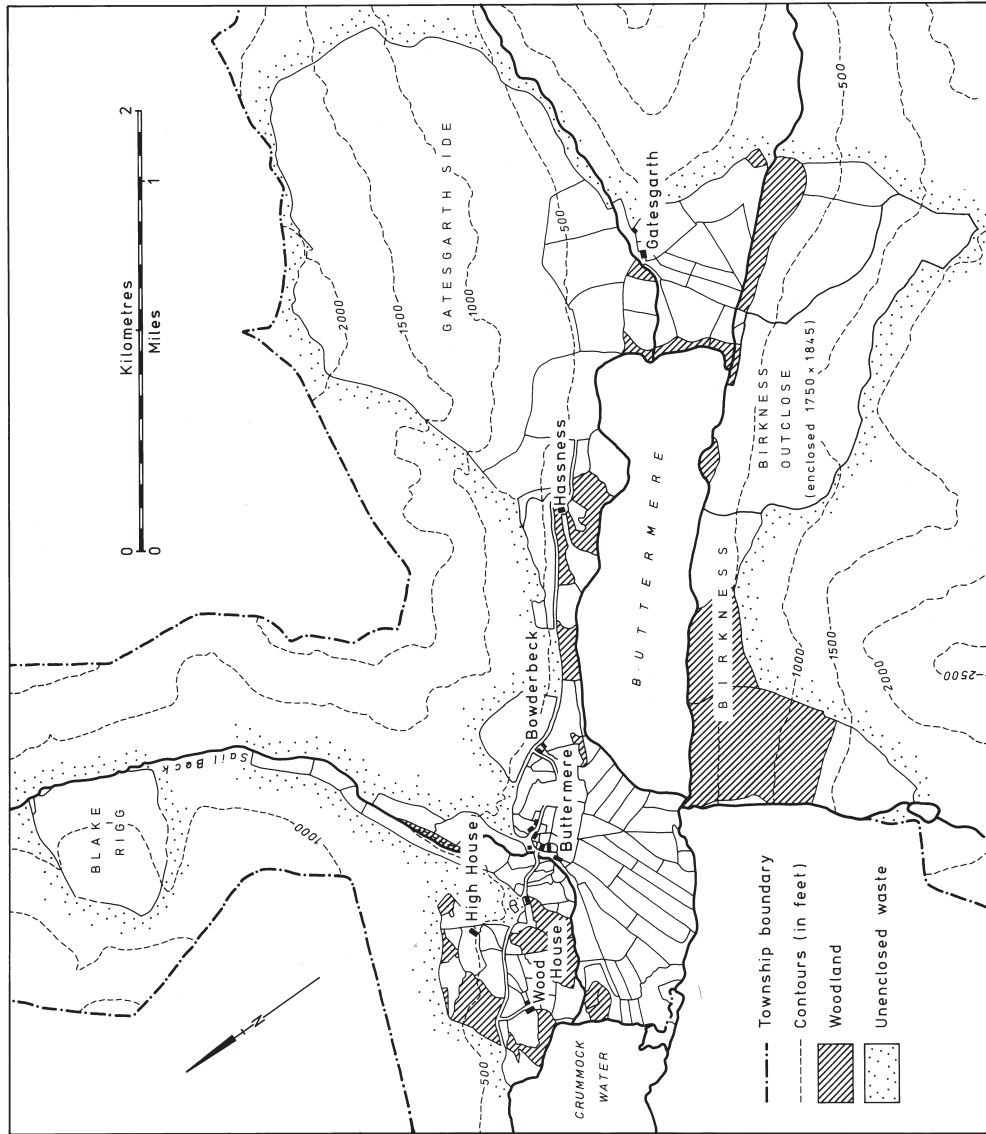


Fig. 1. Buttermere in the Nineteenth Century.

and give no details about the type of farming or the character of the estate. The general picture across the northern uplands is that, once leased, vaccaries tended to be subdivided into smaller tenanted farms, with the result that many vaccaries had grown into small hamlets by the end of the fifteenth century.⁵ We know comparatively little about the character of vaccaries before they were leased, when they were run as demesne enterprises. The major exception is in the Lancashire forests of Trawden, Pendle, Rossendale and Accrington, where detailed account rolls of the de Lacy estate for 1295-6 and 1304-5 enable not only a reconstruction of the stock-rearing strategies on this extensive estate but also something of the nature of individual vaccaries. Each of the 27 vaccaries on the estate was in the charge of a vaccary-keeper and ran a core breeding herd of around 40 cows and a bull. The vaccaries cannot be viewed in isolation, as they were only one element in an integrated stock-rearing system, in which animals young and old were moved between farms. The vaccaries were essentially breeding grounds, from which bullocks and oxen, surplus young cattle and old, barren cows were drawn.⁶ In the private forests of the Lake District fells it is only for the vaccary at Gatesgarth that documentary evidence survives to enable comparisons to be drawn with the vaccaries in the Pennines.

Demesne farming in the honour of Cockermouth in the later thirteenth century

The Gatesgarth vaccary can only be understood if viewed in the context of the exploitation of demesnes across the Cockermouth estate. For the purposes of this discussion, that estate was the half of the honour of Cockermouth which was in the hands of Isabella de Fortibus, widow of William de Fortibus (III), earl of Albemarle, (d.1260), whose grandfather had acquired a moiety of Allerdale and the honour of Cockermouth *c.*1190 through his marriage to Hawise, daughter of Alice de Romilli. That moiety included the castle and demesnes at Cockermouth itself and the southern half of the forest of Derwentfells, including Buttermere and Newlands, which had been assigned to the earl in 1247.⁷ It also included demesnes in Allerdale barony, north of the Derwent. After the earl's death in 1260, Cockermouth, along with Holderness (Yorks. East Riding), Radstone (Northants.) and other property were assigned in dower to the countess Isabella.⁸ However, links with the earl's other great northern property, the honour of Skipton, continued during the minority of Thomas, the earl's son, for some years.⁹ After Thomas' death in 1269, the link with Skipton was broken and Cockermouth became an even more distant outpost, as the countess' estates were administered from Holderness and Radstone.¹⁰ These changes are significant, since they appear to have affected the management of the Cockermouth demesnes, as will be seen.

The documents which allow a reconstruction of demesne farming on the Cockermouth estate include two surveys, one made in 1260, after the death of William de Fortibus III, the other *c.*1270, probably commissioned after the death of Thomas, his son, in 1269, while a ward of the king.¹¹ These are complemented by twelve estate account rolls which survive for the accounting years ending Michaelmas 1267, 1268, 1269, 1271, 1274, 1278, 1279, 1281, 1283, 1290, and for irregular periods of time in 1293-4, 1309-10 and 1316-18.¹² These chart the

management of the estate during Isabella's widowhood, the later irregular accounts dating from when the estate had escheated to the Crown after her death in November 1293.

The survey of the estate *c.* 1270 provides an overview of the land held in demesne. At Cockermouth, in addition to the park attached to the castle, there were 165 acres of arable land, while at Birkby ("Breteby"), near the coast in Crosscanonby parish, were a further 100 acres of land which were "fallow for pasture" (*frixto ad pasturam*). In the upland portion of the estate fell grazings were retained as demesne pastures. Cattle were concentrated on pastures at Gatesgarth, which could sustain 60 cows with their followers of two years, and Skiddaw, where 140 oxen, bullocks and heifers could be kept. Remote daleheads in the forest of Derwentfells were sheep pastures, the survey giving the following carrying capacities: in Coledale, behind Braithwaite, 300 "two-toothed" sheep (*bidentes*); in Hobcarton, to the south of Whinlatter pass, 350 "two-toothed" sheep and 60 goats; and in Keskadale, at the head of the Newlands valley, 400 wethers and 100 ewes.¹³

When the surviving accounts start, in 1267-8, demesne farming was in the charge of two principal officials, the castle reeve, who was responsible for the arable grange at Cockermouth, and the "storer" or head stockman (*instaurarius*) who had overall responsibility for livestock management. Arable cultivation was concentrated at Cockermouth, where over 160 acres were under crop in 1269, almost all of it sown with oats, and at Birkby, where 120 acres, again predominantly oats, were harvested that year. Arable cultivation at Cockermouth declined across the 1270s and increasing acreages of the demesne land was leased. All the grain from the 1277 harvest was sold and by 1281 the castle farm switched briefly to dairying, a herd of 16 cows (which produced 118 cheeses and 7½ stone of butter) being bought that year, though none of the cattle remained there two years later.

TABLE 1: Livestock accounted for by the *instaurarius*, 1268-79.

	1268	1269	1271	1274	1278	1279
Bulls	2	1	7	5	4	3
Cows	123	118	112	76	64	65
Oxen	4	1	0	0	1	5
Bullocks (3½ yrs)	4	0	7	8		
Heifers (3½ yrs)	13	15	3	10		
Bullocks (2½ yrs)	0	24	22	14	5	4
Heifers (2½ yrs)	15	17	10	12	2	2
Yearlings (male)	27	9	27	12	4	12
Yearlings (female)	17	10	23	8	2	11
Calves	29	32	39	40	24	27
<i>Total cattle:</i>	<i>234</i>	<i>227</i>	<i>250</i>	<i>185</i>	<i>106</i>	<i>129</i>
Wethers	396	305	328	274	182	42
Ewes	114	152	134	113	(all 42 sold)	
Hoggs	67	81	66	64	2	
<i>Total sheep:</i>	<i>577</i>	<i>538</i>	<i>528</i>	<i>451</i>	<i>184</i>	<i>42</i>

Note: figures are those for Michaelmas at the end of the accounting year.

Source: PRO, SC6/824/7-11.

A similar picture of a reduction in direct exploitation of the demesnes is visible in the storer's accounts (Table 1). The earliest account (1267-8) shows that livestock rearing on the Cockermouth estates was extensive. In that year the storer accounted for 234 cattle and 577 sheep, the former apparently kept on vaccaries at Birkby and Gatesgarth, the latter probably grazing the fells in Derwentfells forest, though reference to a *bercaria* (sheep house) at Birkby in 1274 suggests that some were kept there. Meadows at Birkby, Gatesgarth and Keskadale provided hay to keep the stock over the winter. Seven stockmen were employed: a "geldhurde" and two shepherds for the whole year, three *vaccarii* for the winter half year and a lamb keeper for half the year. The principal income came from sales of wool and milk, the combined value of which formed over 80 per cent of the receipts that year. The 469 fleeces remaining after payment of tithes made 45 stone of white wool, two stone of black wool, and two stone of "locks" and yielded £9 3s. 10d., while milk from 108 cows and 82 ewes yielded £7 11s. There were also significant internal transfers of stock, six oxen and 18 yearling cattle being sent to the stock keeper of Craven, reflecting the continuing link between Cockermouth and the honour of Skipton. Sales of animals were limited to two cows, one bullock and 21 wethers, presumably the annual draft of old and weak stock.

Across the 1270s stock-rearing on the estate declined (Table 1), perhaps reflecting the severing of the link with Skipton and the distance from the countess' estate managers in Holderness and Northamptonshire. More animals were sold: 20 cows and seven heifers, as well as 10 male cattle, in 1271; 13 cows, 19 oxen and two bulls in 1274. The breeding herd of cows was reduced by half in a decade, from 123 in 1268 to 64 in 1278 and younger stock were deemed to mature earlier, heifers and bullocks being added to the categories of cows and oxen when three years old, rather than four. But the biggest change took place in the sheep flock, where, after a steady decline in the breeding flock, all the ewes and gimmers (young females) were sold in 1278 and the majority of the wethers (castrated males) the following year, leaving a rump of only 42 wethers, compared to the 396 in 1268. Whether the decision to sell was connected to the prevalence of disease is unclear. Losses from "murrain" were very high in some years: almost half the ewes (54 out of 129) died of murrain in 1267-8 and almost one third (58 out of 189) in 1270-1, while one quarter of the reduced flock of wethers (46 out of 182) died in 1278-9 before the bulk of the remainder were sold.

Whatever the causes of the virtual cessation of sheep farming on the estate, a major reorganisation of the cattle enterprise took place in 1280-1, when Walter Hardheid, who had been storer for much of the period covered by the accounts, divided all the remaining cattle between the vaccaries at Birkby and Gatesgarth, the bulk of the animals, including all the oxen, bullocks and heifers, going to Birkby. As a result, separate accounts were kept, enabling us to chart in greater detail activity at the vaccary at Gatesgarth during the 1280s.

The vaccary at Gatesgarth

As we have seen, Gatesgarth was an integral part of the estate's stock-rearing system. The "pasture called Gatescarth" was valued at 10s. a year in 1260 and was said c.1270 to be capable of keeping 60 cows and their followers.¹⁴ The two earliest

surviving storer's accounts, running from August 1267 to Michaelmas 1269, provide some topographical information about the vaccary at Gatesgarth. The cow house (*vaccaria*) there was mended, a house (*domus*) for hay and calves was built, the enclosure (*haya*) around the meadow was repaired and hay made. A man was paid to keep what was referred to as "the wood of Gadscard" in 1268 and the "park of Gaschard" in 1269, and to repair the palings.¹⁵ Identifying this wood or park can inevitably only be tentative but it may be represented on the modern map by the large enclosure known as Gatesgarthside (see Fig. 1), the boundaries of which seem to coincide with those of the "forest of Gatesgarth", perambulated in 1489.¹⁶ The vaccary probably included both the flat meadowland between Warnscale Bottom and the head of the lake and grazing on the fells to the north and east. The location of the vaccary buildings is not known, though they may have been in the vicinity of the modern farm and Gatesgarth Cottage, where there were formerly remains of more buildings.¹⁷

TABLE 2: Receipts and Expenditure at Gatesgarth vaccary, 1281-90.

	1280-1	1282-3	1289-90
<i>Receipts</i>			
Sales of livestock	14s. 5d.	—	24s. 6d.
Sales of hides and meat	5s. 7d.	4s. 1d.	3s. 4d.
Sales of milk	54s. 0d.	104s. 6d.	55s. 6d.
<i>Income from milk sales broken down as follows:</i>			
cows which have calved	14	29	14
<i>vaccae annulares</i>	8	13	9
<i>Expenditure</i>			
Repairs to vaccary buildings	0s. 9 ¹ / ₂ d.	13s. 8d.	—
Costs of hay-making	3s. 6d.	4s. 0d.	4s. 0d.
Tithes of hay	—	2s. 0d. (2 years)	1s. 0d.
Salaries	11s. 0d.	11s. 0d.	18s. 0d.

Source: PRO, SC6/824/12-14.

The three surviving accounts for the vaccary, for the years ending Michaelmas 1281, 1283 and 1290, are summarised in Tables 2 and 3. The vaccary appears to have been similar in scale to those in the forests of Blackburnshire, sustaining a herd of approximately 40 cows, two bulls and their young. The stock were housed in the winter – a *vaccaria* 67 feet long was built in 1282-3 – and fed on the hay gathered from the meadows at the head of the lake, on which their winter dung was spread (the 1283 account records the purchase of a dung cart). Initially, the vaccary was managed by one official, described as the "cow keeper (*vaccarius*) in winter", whose salary was 11s. a year. The 1290 account also records the payment of salaries to a "keeper" of Gatesgarth (5s.) and a "keeper of the idle draught beasts in winter" (*custodiens averia otiosa in Jeme*).

As Table 2 shows, the main income yielded by the vaccary came from sales of milk, both from suckling cows (described as "cows having calves") and from *vaccae annulares* (variants *anul-*; *anel-*). The income figures suggest that milk from suckling cows was sold at the rate of 3s. 0d. per cow, that from the *vaccae annulares* for

1s. 6d.,¹⁸ prices which suggest a parallel with Durham Priory's vaccary at Muggleswick (Co. Durham), where a distinction was drawn in 1384 between cows whose milk was sold "at full rent" (*ad plenam firmam*) and those "at half rent" (*ad medietatem firmam*).¹⁹ What is meant by *vaccae annulares* is not completely clear but it may have referred to cows which were still feeding the previous year's calf.²⁰ The sales of milk suggest that, despite its remote location at the head of a valley, the Gatesgarth vaccary supported a local dairying enterprise, presumably among the neighbouring peasant community at Buttermere. Smaller amounts of income came from the sale of stock (three cows in 1280-1; two oxen and three cows in 1289-90) and from the sale of the hides and meat of animals which had died.

The cattle at Gatesgarth (see Table 3) were a breeding herd. The first account, for 1280-1, records the establishment of the vaccary as a separate entity. Two bulls and 40 cows were brought in, the bulls and 26 cows from Walter Hardheid, formerly the estate's storer, the remaining 14 cows from the demesne farm at Birkby. The deaths of two cows and the sale of three more before calving reduced the number of milkers to 35 by the end of the accounting year. A year later the herd was back to 40 cows and an exchange of animals with Birkby (10 cows being brought in and two sent to Birkby) increased the core of the herd to 46 by the year end (after the death of two from murrain). A mare in foal was bought that year and horses were still kept in 1290, by which time the Gatesgarth herd was self-replenishing, 12 heifers being added to the core of 40 cows, three of which were sold and two died.

TABLE 3: Animals at Gatesgarth vaccary, 1281-90.

	1280-1	1282-3	1289-90
Mares	0	1	3
Foals	0	1	5
Bulls	2	2	2
Oxen	0	0	8
Cows	35	46	47
Bullocks (<i>bovetti</i>)	0	6	8
Heifers (<i>juvencae</i>)	0	3	6
Yearling bullocks (<i>boviculi</i>)	4	10	6
Yearling heifers (<i>juvenculae</i>)	3	11	6
Calves	10 (7 male)	24 (16 male)	13 (6 male)
Total livestock:	54	104	104

Note: figures are for stock on the vaccary at Michaelmas at the end of the accounting year.

Source: PRO, SC6/824/12-14.

Fertility rates were low and mortality rates comparatively high. Fewer than half the cows appear to have calved in any one year, a feature also noted on the vaccaries in Blackburnshire and on Bolton Priory's vaccaries in Wharfedale.²¹ At Gatesgarth, a total of 58 calves was born to the 120 (or possibly 128)²² cows during the period of the three accounts, giving a fertility rate of 0.48 or 0.45 calves per cow, figures which compare badly with those for the late thirteenth century from the manor of Rimpton in the much more gentle climate of Somerset.²³ If the interpretation of the term *vacca annularis* offered above is correct, the cows which were still feeding yearlings

would calve only every other year, though whether this was the result of chance or a deliberate strategy to limit calving remains unclear. Walter Hardheid, the storer, had earlier explained the low calving rate in 1278 (when 27 calves were born to perhaps 71 cows) by claiming that “many cows were not impregnated because of winter storms”.²⁴ Mortality rates among the calves were also higher than at Rimpton, the deaths of 11 of the 57 calves recorded on the three surviving accounts giving a survival rate of 80.7 per cent.

The later history of the vaccary at Gatesgarth parallels that of other vaccaries in northern England. After the death of the Countess Isabella in November 1293, the estate escheated to the Crown. Direct demesne farming continued to this point, the accounts for 1293-4 recording expenses for mowing hay and repairing enclosures at Gatesgarth and for paying a stock keeper there.²⁵ By 1310, however, the “pasture” of Gatesgarth had been let to farm at the will of the lord at an annual rent of £4,²⁶ and by the sixteenth century it had been sub-divided into three holdings, each held by members of the Hudson family. As well as the enclosed land at the head of the lake and the open fells surrounding it, the farms at Gatesgarth also included the fellside enclosures at Birkness (“Burtness” on modern Ordnance Survey maps) on the south-west side of the lake.²⁷ There were still two holdings at Gatesgarth in the mid eighteenth century, by which time the modern focus on sheep was established: in 1750 the two farms ran about 1,600 sheep in summer on the surrounding sheep heafs.²⁸

Of the demesne pastures on the estate listed in the survey of c.1270, only Gatesgarth acquired a permanent demesne farm. The subsequent history of the other pastures illustrates the spectrum of land use and settlement history seen in the private forests of the medieval northern hills. Skiddaw Forest remained an empty block of private pasture, its extra-parochial status reflecting the fact that it was never appropriated by surrounding manors; in the fifteenth century the herbage of Skiddaw was being let by the lords of Cockermouth.²⁹ The other demesne pastures in the forest of Derwentfells had different histories. Hobcarton, a remote valley deep in the hills, remained unenclosed and uninhabited and became absorbed into the common grazings attached to the township of Lorton. The only other reference to it in the later thirteenth century is to a “forge” (probably a bloomery) there in 1290.³⁰ Coledale and Keskadale were both settled by peasant farmers. The pasture of Keskadale was let from 1270: expenses for mowing hay there for the demesnes cease after 1269, the account for 1270-1 recording instead the payment of 6s. rent from the farm of the pasture. The survey of c.1270 describes the rent from Keskadale as being for a shieling (*scala*), suggesting that it had been leased as a summer grazing ground. By 1294, the 6s. rent was said to come from tenants at will there and by 1310 the account explained the absence of any mention of the pasture of Keskadale by stating that it had been absorbed into the global sum of rent from the tenants in Derwentfells.³¹

The documents discussed in this paper chart the decline in direct demesne exploitation of upland pastures across the later thirteenth century. The particular circumstances of the honour of Cockermouth (a distant outpost of an extensive estate administered from Holderness or even Radstone in Northamptonshire) combined with the impact of sheep “murrain” in the 1270s seem to have led to attempts to develop cattle rearing and dairying in the 1280s. But the end of the

Fortibus dynasty in 1293 and the consequent escheat to the Crown saw the wholesale leasing of the demesnes. The end of demesne farming at the vaccary at Gatesgarth was part of a much wider trend, as vaccaries elsewhere in northern England were also leased from the late thirteenth century, well before the economic and demographic crises of the fourteenth century.³²

Notes and References

- ¹ E. Miller, "Farming in northern England during the twelfth and thirteenth Centuries", *Northern History*, 11 (1976 for 1975), 1-16.
- ² A. J. L. Winchester, "Hill farming landscapes of medieval northern England", in D. Hooke (ed.), *Landscape: the richest historical record* (Society for Landscape Studies, 2000), 75-84; A. J. L. Winchester, "Moorland forests of medieval England", forthcoming in I. D. Whyte and A. J. L. Winchester (eds.), *Upland Landscapes of Britain*.
- ³ For discussion see Winchester, "Hill farming landscapes", 76-78.
- ⁴ A. J. L. Winchester, *Landscape and Society in Medieval Cumbria* (Edinburgh, 1987), 42-43.
- ⁵ See Winchester, "Hill farming landscapes", 78; A. J. L. Winchester, *The Harvest of the Hills: rural life in northern England and the Scottish Borders, 1400-1700* (Edinburgh, 2000), 13-16; J. McDonnell, "Upland Pennine hamlets", *Northern History*, 26 (1990), 20-39.
- ⁶ M. A. Atkin, "Land use and management in the upland demesne of the de Lacy estate of Blackburnshire c.1300", *Agricultural History Review*, 42 (1994), 1-19.
- ⁷ For the descent of the honour of Cockermouth, see J. Wilson (ed.), *Register of the Priory of St Bees*, Surtees Society vol. 126, (Durham, 1915), 494-6, 532-533. The 1247 partition is discussed in Winchester, *Landscape and Society*, 140.
- ⁸ *Close Rolls of the Reign of Henry III*, XI (London, 1934), 97-98.
- ⁹ Income from the Cockermouth estate was paid to the coffers in Skipton in 1267: PRO, SC6/824/6.
- ¹⁰ Payments to the countess' receivers in Burstwick (East Riding), Holderness and Radstone are recorded in the accounts of the Cockermouth estates between 1271 and 1290: PRO, SC6/824/8-14.
- ¹¹ PRO, SC11/730. The later survey (mm. 9-15) is undated but comparison with rentals and other income recorded on the estate accounts (SC6/824/7-15) suggests a date of c.1270. I am grateful to David Wise for the suggestion that it was drawn up after the death of Thomas, the heir.
- ¹² The following discussion is based largely on these account rolls: PRO, SC6/824/7 (1267-8, 1268-9); SC6/824/8 (1270-1); SC6/824/9 (1273-4); SC6/824/10 (1277-8); SC6/824/11 (1278-9); SC6/824/12 (1280-1); SC6/824/13 (1282-3); SC6/824/14 (1289-90). The later accounts run Martinmas 1293 to Michaelmas 1294 (SC6/824/15); 5 Aug. 1309 to 13 June 1310 (E199/7/3) and 20 Aug. 1316 to 10 Dec. 1318 (SC6/824/18).
- ¹³ PRO, SC11/730, mm. 9v, 13v, 14v.
- ¹⁴ PRO, SC11/730, mm. 1v, 14v.
- ¹⁵ PRO, SC6/824/7.
- ¹⁶ CRO(C), D/Lec/301, Percy survey, f. 173. Few places on the boundary of the forest can now be identified but it ran in part from the "height of Robertsyde" (i.e. Robinson) to Hassness, the line followed by the NW boundary of Gatesgarthside.
- ¹⁷ Information from Annie Nelson, Gatesgarth Cottage, 1968.
- ¹⁸ The same vocabulary and prices are found on the storer's account for the honour of Skipton in 1270-1: PRO, SC6/1087/6, m. 5v.
- ¹⁹ Durham University Library Archives & Special Collections, DCD, Enr. Lstk. Acc. 1383-4, m. 4.
- ²⁰ R. E. Latham, *Dictionary of Medieval Latin from British Sources*, Fascicule I (London, 1975) notes the use of the term *annularis* elsewhere and suggests that it might mean "yearling". In this context, it would presumably refer to a cow still feeding a yearling calf. The Cockermouth estate accounts make it clear that the *vaccae annulares* were yielding milk but had not calved in the year of the account. The storer's account for 1274 divides the cows into three categories: 50 had calved that year, 24 were barren and 7 were *annular*. It is therefore suggested that *vacca annularis* is to be interpreted as meaning "a cow suckling a yearling calf". An alternative, though perhaps less likely, root of the adjective is *annula* or *anella*, "an old woman". I am grateful to Paul Booth and Thelma Rowell for stimulating

discussions about the meaning of this term.

- ²¹ Atkin, "De Lacy estate", 7; I. Kershaw, *Bolton Priory: the economy of a northern monastery, 1286-1325* (Oxford, 1973), 100.
- ²² It is unclear whether animals added to the category of "cows" during the accounting year would have calved during the accounting period. The total number of cows at the start of each year is 120; the total at the end of each year is 128.
- ²³ C. Thornton, "Efficiency in medieval livestock farming; the fertility and mortality of herds and flocks at Rimpton, Somerset, 1208-1349", *Thirteenth Century England IV: Proceedings of the Newcastle upon Tyne Conference 1991* (Woodbridge, 1992), 25-46, at 33, 44.
- ²⁴ PRO, SC6/824/10. The number of cows has been calculated thus: 50 brought over from the previous accounting period, plus 4 heifers from the previous account and 19 cows which had been bought, gives a total of 73, two of which died before calving.
- ²⁵ PRO, SC6/824/15.
- ²⁶ PRO, E199/7/3. The same rent, payable for the *vaccaria de Gattescarth*, is recorded in 1318: PRO, SC6/824/18.
- ²⁷ CRO(C), D/Lec/314/38; D/Lec/301, Percy survey, f. 170.
- ²⁸ CRO(C), D/Lons/W/Deeds/Gatesgarth, "Informations from Gerard Ullock", 11 Sept. 1750.
- ²⁹ CRO(C), D/Lec/29/1, m. 40 (account of Derwentfells, 1437-8).
- ³⁰ PRO, SC6/824/14, f. 2v.
- ³¹ PRO, SC11/730, m. 13v; SC6/824/8, f. 2r; SC6/824/15; E199/7/3.
- ³² Winchester, "Hill farming landscapes", 78.