

of the tenth century with assessments in *manentes* can be identified with groups of tributary vills; the estate centre alone stands apart. The structure, however, may be even more ancient; the thirty-one *manentes* at *Hrepingas* granted to Breedon (Leics) in 675x691 (Sawyer, no 1805) can probably be identified with the thirty-one vills within the Domesday estates of Repton, Melbourne, and Derby/*Northworthy* which are otherwise tenurially linked (D.R. Roffe, 'An Introduction to the Derbyshire Domesday', in A. Williams and R.W.H. Erskine, eds, *The Derbyshire Domesday* (London, 1990), 24-6).

<sup>28</sup> W.E. Kappelle, *The Norman Conquest of the North* (London, 1979), 79-81; D. R. Roffe, 'Wharram Percy', forthcoming.

<sup>29</sup> GDB 379a-382b; D.R. Roffe, 'The Yorkshire Summary: a Domesday satellite', *Northern History* XXVII (1991), 242-60.

<sup>30</sup> D. Michelmores, M. L. Faull and S. Moorhouse, *West Yorkshire: an Archaeological Survey to AD 1500* (Wakefield, 1981), 232.

<sup>31</sup> GDB 240b, 206d; *VCH Huntingdon* ii, 230, 234.

<sup>32</sup> GDB 203c, 204b; *VCH Huntingdon* ii, 172, 210.

<sup>33</sup> GDB 207a.

<sup>34</sup> N.E.S.A. Hamilton, ed., *Inquisitio Comitatus Cantabrigiensis* (London, 1876), 166.

<sup>35</sup> GDB 250c-d.

<sup>36</sup> Hamshere, 'Structure and exploitation', 44-5.

M.A. Atkin

MALHAM Moor is one of the townships which comprise the district of Craven in Yorkshire (see map). The medieval name *Malghemore* denoted a larger area than is Malham Moor today,<sup>1</sup> and I shall use this form to distinguish the greater area from the smaller, later township. It is a broad plateau (some 13 miles x 8 wide) lying at about 1200' (500m.) above sea level, with the flat-topped Fountains Fell rising above it to over 2000' (650m.). The plateau receives 50" of rain annually, the summits even more. Consequently it is, and was, dominantly a pastoral farming area, now part of the Yorkshire Dales National Park.

In examining the ways in which *Malghemore* was used in the medieval period, I want to raise again the question of what meaning the word *moor* had in the past for those who used it. On previous occasions I have suggested that *moor* might have had a meaning beyond a description of physical landscape, and that it may at one time have denoted a large area of land which was intercommoned.<sup>2</sup> I am also going to suggest that we tend to underestimate the value of moorland: although the quality of the land was usually low, and its use sometimes limited seasonally, it was nevertheless, for the communities around it, a highly valued resource.

Disputes over grazing rights on *Malghemore* are fairly frequent in twelfth- and thirteenth-century records. These disputes arose as a consequence of the grants of the pasture of *Malghemore*, and 'the pasture through all *Gnup* and *Dernbroc*' by William de Percy and his daughter Matilda in the second half of the twelfth century to the newly-founded Fountains Abbey.<sup>3</sup> The disputants with Fountains were: first, the men of the surrounding vills who had long-established grazing rights on *Malghemore*; secondly, the canons of Bolton Priory; and thirdly, the monks of Sawley Abbey. Like Fountains, both these religious houses had acquired properties in vills around the Moor, and thereby also rights on the Moor itself. Before the twelfth century it may be that usage of the upland grazing was not sufficiently intensive to occasion serious dispute. The problems stemmed from the intensification of land use by the three religious houses in their development of large-scale sheep-farming here. As disputes were settled, areas of *Malghemore* were demarcated and 'granted' to the surrounding vills as their share of the once-open grazings, and gradually the vill boundaries on the upland became agreed and fixed to give us our present-day township

boundaries.<sup>4</sup> The second part of this paper examines the charters, especially those of Fountains Abbey, for evidence of these processes. The first part examines the uses made of the Moor in the Middle Ages.

### Settlement

The *Malghemore* plateau must have been highly regarded from prehistoric times, for there are abundant archaeological remains there dating from the Palaeolithic to the British period. The Romans exploited the mineral ores which occur on the plateau; and the existence of the name *Street Gate* on the 'road to Lonsdale'<sup>5</sup> has given rise to speculation that this might have been a Roman road, or a much older one improved and used by the Romans. British place-names must once have been abundant in the area, but today the only survivors of a very complete re-naming by later-comers are *Craven*, the district name itself; the river-name, *Wharfe*, and that of its tributary, *Tyne (Beck)*; and *Penyghent*, that of the principal summit.

Almost all the villages which lie in the dales around *Malghemore* bear English names, though some of these have been influenced later by Norse-speakers. On the eastern flank of *Malghemore* in Littondale and Wharfedale these names are *Litton*, *Arncliffe*, *Hawkswick*, *Kilnsey* and *Threshfield*, and on the west side, in Ribblesdale, *Settle*, *Langcliffe*, and *Stainforth*.<sup>6</sup> The English settlers also penetrated to the headwaters of Littondale and right into and on to the plateau: the deep tributary valley called *Hesleden* forms the northern boundary of *Malghemore*, and names two farms; the next tributary valleys down-dale were 'Yuden' (a lost name, but recalled in the name *Yew Cogar Scar*) and Darnbrook, the latter also the name of a farm; Bordley, the largest settlement (and township) on the plateau, lies at almost 1100' (340m.).<sup>7</sup> The hugh demesne sheep pasture belonging to Fountains, called *Sleets*, which reached from the summit of Fountains Fell down to the Hesleden Beck over 1000' (300m.) below, also bears a name derived from Old English,<sup>8</sup> as is *SuarteCumbe*, a lost name which occurs in the thirteenth-century perambulation of the northern boundary of Malham moor, discussed below. However, the village of Malham itself, at the head of the r. Aire, and the isolated farms high on the Moor, many of which were sheep lodges of Fountains, like the two Trenhouses, Capon Hall and Fornah Gill,<sup>9</sup> bear names derived from Old Norse.

### *The exploitation of the resources of Malghemore*

The floors of the dales lie at 700' (200m.) and from them the moor rises very abruptly, with an edging of magnificent white scars of limestone, like the well-known Malham Cove, Gordale, and Kilnsey Crag. The southern part of the plateau is formed on limestone, and the few streams flow in deep gorges. Indeed the surface of the southern half of the plateau would be virtually waterless if it were not for an almost freakish result of geological faulting which has brought a small pocket of impervious rocks to the surface. On these impervious rocks lie the sizable lake and marshy shores of Malham Tarn, but the stream from it flows on the surface for less than half a mile, before disappearing underground as soon as it reaches the limestone. Fountains were eventually granted the lordship of *Malghemore*, and thereby acquired fishing and wild-fowling rights in the Tarn and its environs, as well as hunting and mineral rights on the plateau.<sup>10</sup>

But the most highly-valued resource of *Malghemore*, to the men of the surrounding vills, as well as to the religious houses, was the pasture. This arose, as on any area of rough grazing, from the advantage, during the summer months, of being able to clear the animals of the vills from the arable fields and the hay meadows. However, the pasture on *Malghemore* is of high intrinsic value because the layered nature of the geology gives rise to a variety of grass swards which provide feed for stock at different seasons of the year. Above the relatively level surface on the Carboniferous limestone are the steep slopes of the Yoredale Series (successive layers of limestones and shales). Above them, and forming the flat summit of Fountains Fell, is the coarse sandstone called Millstone Grit.

The pastures on the limestone make their most generous growth in the summer, and can then carry many more animals than in winter. Despite the altitude and the high rainfall, the soils on the limestone are rich in calcium, and bear a highly-valued sward of sweet nutritious grasses (fescues) and clovers with a wide variety of other flowers and herbs. It is not land which can fatten stock, but it is very suitable for rearing healthy young animals.<sup>11</sup>

In places where glacial deposits mask the limestone, and on the higher and steeper slopes of the Yoredale series, the soil is damper and more acidic. White bent (*Nardus stricta*), purple moor grass (*Molinia caerulea*), and cotton grass (strictly a sedge, *Eriophorum vaginatum*) increase at the expense of the fescues. The *Nardus* is a low-quality fodder, but can provide some roughage in winter, and the

*Molinia* has a value in the later part of the spring. But the most useful plant is the evergreen cotton grass which grows in the dampest places: the flower buds begin to form at the end of the winter, and the hill sheep will reach into the plant and pull out the nutritious flower buds. This 'moss crop', as it is known locally, provides the hill ewe with a valuable food before lambing-time.<sup>12</sup>

On Fountains Fell summit the drier parts, lying directly on the Millstone Grit, carry a little heather and bilberry, very useful in winter, but not abundant anywhere in the area. Wetter areas on the level summit of Fountains Fell are peat-covered to some depth. Here sphagnum moss and cotton grass occur, the latter available to the sheep if the peat is not too soft. These areas provided peat for fuel in the middle ages, and the records often refer to turbarry rights.<sup>13</sup>

This range of plants can provide food for the native hill sheep, the Dalesbred, over most of the year, abundantly in summer, but less so in winter. Even in the snow the small, but hardy, Dalesbred ewe will scratch down to find her food, and can thrive even in hard conditions, though a winter of very heavy snow or a continuously wet season can make heavy demands on her strength, and lead to high losses at lambing time. The medieval ancestors of the Dalesbred probably formed the breeding flock of the tenant farmers of *Malghemore*, but the demesne flocks of Fountains Abbey may have been cross-breeds, less hardy, but producing a higher quality of wool. Most of the Fountains demesne flocks were wethers (castrated male sheep), which were wintered on low ground in Nidderdale.<sup>14</sup> They were evidently not sufficiently hardy to stand the winters on the hills but would do well on the abundant grass of the limestone pastures, and were moved up to the lodges and to the Sleets demesne pasture from early May until the end of September. Being wethers, they would be saved the strains which reproduction placed on the ewes and tups and produce thereby a better and a larger fleece. The fifteenth- and sixteenth-century records suggest that in addition to the stock from the surrounding vills, and the breeding flocks of the Fountains tenants, at least eight wether flocks (each of two to three hundred animals) of Fountains were summered on *Malghemore*. To these must be added the stock of Bolton Priory and Sawley Abbey,<sup>15</sup> making a total running to many thousands.<sup>16</sup>

It was no doubt this range of different swards which led the monks to retain the pasture of Sleets in hand as demesne pasture, for it ranges from the limestone across the Yoredales on to the gritstone summit of Fountains Fell. The one period of the year when fodder is short on the moor is from early May to midsummer,

and this no doubt is why the monks allowed only their own wether flock in Sleets pasture at that period. During the rest of the year the tenant of Upper Hesleden farm, who managed the Abbey's flock for them in summer, was allowed to add 120 sheep, some cattle, and horses of his own stock to the monastic animals in Sleets.<sup>17</sup>

There is some evidence to suggest that Sleets may have been held as a demesne pasture under Matilda de Percy's administration, for it was not, at the outset, included in the grants to Fountains. The perambulation accompanying her grant<sup>18</sup> evidently passes to the south of Sleets pasture, presumably leaving it in the *Forest of Littundal* which was not part of her grant.

The first points mentioned in the perambulation are the *Westmore turbarry of Arnecliffe*, and *Senesete*, a conspicuous knoll (perhaps with a tumulus)<sup>19</sup> near the present meeting place of the bounds of Litton, Arnecliffe and Malham Moor. The perambulation then passes to *the lake of Suartecumbe*. There is only one possible identification here: the tarn high on the shoulder of Fountains Fell. Thus from *Senesete* this perambulation passes to the south of Sleets along the northern shoulders and summit of Fountains Fell. This is the line of the present township boundary of Malham Moor. From *the lake of Suartecumbe* the route descends to *Laghals*, 'the low col', clearly the col between Fountains Fell and Penyghent. From there it turns south to *Ulfkilocros*, still the meeting point of present township boundaries near the ancient stone base of a cross.

But the perambulation in two grants by Richard de Percy in 1239 clearly passed north of Sleets, including it thereby with *Malghemore*.<sup>20</sup> The perambulations in his charters, like that of Matilda, follow the eastern shoulder of the bowl from the West Moor turbarry of Arnecliffe, passing *Senesete*; but they they diverge, passing 'down to *Thwertegile* ... and up the stream of *Hesleden*'. *Thwertegile* 'the ravine lying across'<sup>21</sup> may be readily interpreted as the deep gill which slants across the northern face of Fountains Fell, and falls steeply to the Hesleden Beck. It is followed by the present Litton/Halton Gill boundary.

Matilda's and Richard de Percy's perambulations can be reconciled by identifying *Suartecumbe* 'the dark valley' as the deep bowl of land behind Darnbrook Farm.<sup>22</sup> It lies on the south-east flank of Fountains Fell and consequently loses the sun soon after midday. This deep bowl, probably a drift-filled corrie, is over a mile across from the shoulder on which the tarn (the *lake of Suartecumbe*) lies to the ridge above *Thwertegile*.

*The establishment of boundaries*

Many of the boundaries of the vills around *Malghemore* were established in the thirteenth century as disputes were settled between the men of the vills and the religious houses. The usual complaint was that the monks were overburdening the common grazings with their animals. This was resolved in two ways: first, by establishing an area with agreed bounds which would belong exclusively to an individual vill; and, secondly, by rationing the number of stock which could be grazed on the common pastures of a vill. This 'stint', as it was called, was related to an individual's arable holding in the vill, and was usually expressed as 'the number of animals per bovate'.

One very complex dispute, lasting almost fifty years, concerned the western side of *Malghemore*, near *Sandwath*, where four parties shared an area of land. Here the men of Stainforth and Langcliffe had been accustomed to graze their stock, and to cut hay and *coopertorium* (roofing material). Sawley Abbey had been granted tenements in Stainforth, and had thereby acquired the common rights of the vill. The monks are recorded as having grazing rights for 200 sheep and eleven cows, but this may have been additional to their stint based on their holdings in the vill. The Stainforth stint was recorded (before 1265) as '4 oxen and 4 cows with their two yearlings, 4 mares with their two yearlings and 40 sheep with their one yearling for each bovate'. In Domesday Book, Stainforth was assessed at 6 carucates, that is, 48 bovates.<sup>24</sup> Fountains also had grazing rights there, but the records suggest that they were the principal offenders in overgrazing. After many years of argument, even violence, between the herdsmen of both Sawley and Fountains, Fountains eventually agreed 'that they would not overburden the common pastures'. Furthermore, the bounds of the disputed area against the *Forest of Gnup* were defined by a ditch, 'the monks' fosse', and also by large stones with crosses, the bases of some of which are still in place. The present bounds between Malham Moor, Stainforth and Langcliffe on the 'road to Lonsdale' section still lie very close to the monks' fosse.

Further east, the monks of Fountains, as the lords of West Malham, were in dispute with the men of Malham and with the canons of Bolton Priory who held the lordship of East Malham. The dispute turned on how far into *Malghemore* the men of Malham and the Priory might go to graze their animals. It was agreed c.1220 that the men of Malham should pasture in the following places:

'... from the spring of *Malgewater* between *Cuningesete* and *Jarlesete*, to wit, all through *Jarleseteflasc* as far as *Langester* [*sic* for *Langscar*]<sup>25</sup> and thence to the right bounds between *Malgum* and *Bordleia*; but so that the said cattle do not go up into the hills towards the rocks.'<sup>26</sup>

This is clearly the area lying east of Malham Tarn as far as the Bordley boundary, an area of damper pastures (flasks),<sup>27</sup> because it lies on the small pocket of impervious rocks. To the north it is dominated by a high limestone hill, now called Great Close Hill, with near-vertical scars facing over the flasks. This hill is crowned by a conspicuous tumulus, as is a much lower hill, Seaty Hill, on the south of the flasks. That the higher hill might be regarded as the King's Seat, and the smaller one as the Earl's Seat, seems very likely. The next charter, in almost identical terms, permitted Bolton to pasture their horses there too. The agreement continues:

'And the monks [of Fountains] shall not burden the pasture belonging to the vill of Malham with their cattle [*viz.* stock] of other places.'

This reflects the resentment which the local men felt at having animals which had been wintered elsewhere, to wit, on Fountains lowland grazings in Nidderdale, pastured on land which, by custom, had been grazed only by animals which were wintered in Malham. The problem was exacerbated because Fountains had an important holding in Malham East, and therefore had a rightful claim to some grazing on the commons. This dispute seems to have been finally settled when Henry III ordered an enquiry into the Malham stint, which was recorded in 1258 as:

'Each bovate ... is able to sustain 6 oxen, and 6 cows with their young of three years, 200 sheep, 5 she-goats, one sow with young of one year, four geese and one goose [*sic*].'<sup>28</sup>

Since Malham was assessed in Domesday Book at 6 carucates, *viz.* 48 bovates, this represents very large numbers of animals.<sup>29</sup>

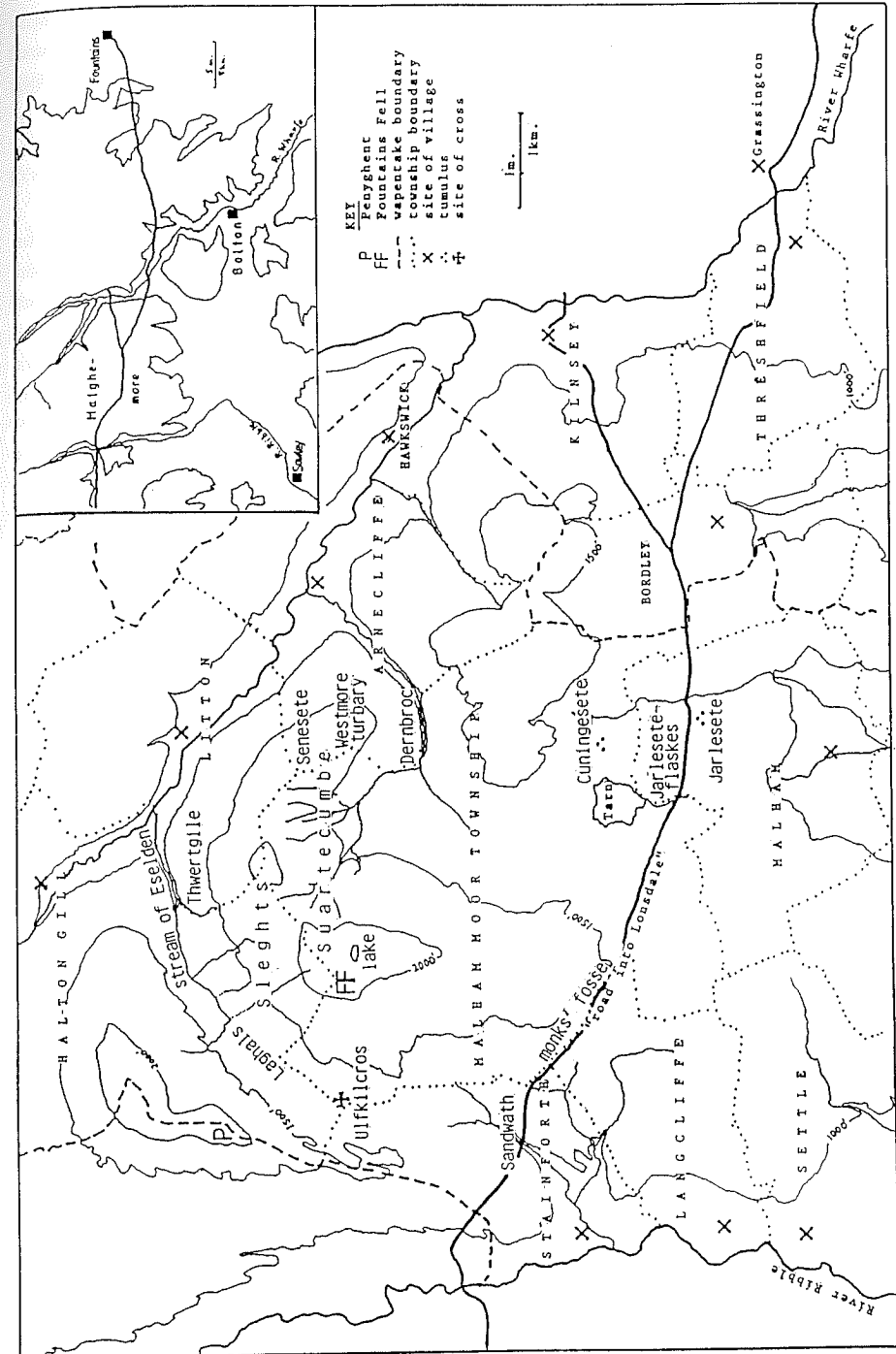
A similar situation arose on the eastern side of *Malghemore*, where Fountains had been granted a number of tenements for which they had grazing and turbary rights. This was an area where three vills intercommoned: Kilnsey and Bordley, the lordships of which were held by Fountains, and Threshfield, which was in private hands. Some agreement was reached during the thirteenth century in defining an area of moor grazings for the vill of Threshfield's exclusive use, in return for which the lord of Threshfield quitclaimed all rights in the pasture of Kilnsey and Bordley.<sup>30</sup> Nevertheless, one area of intercommoning evidently remained, and this was still under dispute 300 years later.<sup>31</sup>

It seems likely that the number of animals grazing on the moor in the medieval period was not very different from the numbers



today. In the Agricultural Returns on 4 June 1960, Malham Moor township recorded 5,240 sheep (not including lambs) and 1,218 cattle.<sup>32</sup> These June returns would record the greater numbers of stock on the summer grazings of the moor. Malham township recorded 2,628 sheep and 765 cattle and similar figures could be expected of each of the other townships which have land on the moor. Since the nineteenth-century Enclosure Acts these grazings are the stunted grazings under the control of individual farms, rather than the stunted grazings on the open moor of the monastic period. It is evident, though, even from the limited records of that period, that the area of rough grazing on *Malghemore* not only sustained the animals of the villas around the plateau, but also made a considerable contribution to the economic resources of the religious houses, and thus helped to pay for the splendour of architecture still to be seen at Bolton Priory and Fountains Abbey.

LEVENS



## NOTES

This is a revised version of the paper delivered on 30 March 1990 at the XXII<sup>nd</sup> Annual Study conference organized by the Council for Name Studies in Great Britain and Ireland, held at the College of Ripon and York St John, Ripon.

<sup>1</sup> The area defined here as *Malghemore* is bounded by Ribblesdale to the west, by Wharfedale and Littondale to the east, and the valley of the Hesleden Beck to the north; its southern boundary lies along the line of the Mid Craven Fault from Settle through Malham to Grassington. *Malghemore* was shared by both the wapentakes which in the past comprised Craven, and the wapentake boundary between Craven and Ewecross (perhaps once part of Lonsdale) lays along its north-western edge. As the for the name itself, *PNYorks (WR)*, VI, 137, lists the 12th-cent. forms: *Malghemore* 1170, *Malghamora* 1178 87, *Malghemore-a* c.1190, *Malghmore-a* 1198, and *mora de Malhom* 1175.

<sup>2</sup> M.A. Atkin, 'Stock tracks along township boundaries', *JEPNS* (1982), 30; and 'Some settlement patterns in Lancashire', in *Medieval Villages*, ed. D. Hooke, Oxford University Committee for Archaeology, Monograph 5 (Oxford, 1985), 184.

<sup>3</sup> W.T. Lancaster, *Chartulary of Fountains Abbey*, 2 vols (Leeds, 1915), II, 481-2, and I, 320.

<sup>4</sup> Today it is shared by twelve townships including the Malham Moor township. Halton Gill was part of the 'forest of *Littundal*' in the 13th cent. (Lancaster, *Chartulary*, I, 449-50) and acquired township status relatively late.

<sup>5</sup> Lancaster, *Chartulary*, I, 320-1, and II, 734.

<sup>6</sup> *PNYorks (WR)* VI, 121, 125, 113, 124, 86, 105, 150, 147 and 154. The earliest forms are: *Haltongyll* 1457; and (all GDB) *Litone*, *Arneclif*, *Hochesuic*, *Chileseie*, *Freschefelt*, *Setel*, *Lanclif*, *Stainford*.

<sup>7</sup> *PNYorks (WR)* VI, 127, 138, and 81.

<sup>8</sup> D.J.H. Michelmores, ed., *The Fountains Abbey Lease Book*, Yorkshire Archaeological Society: Record Series CXL (Leeds, 1981), xxxiv. Sleets is in Halton Gill township today, but, lying between the forests of *Gnup* and Littondale, it was recorded in the medieval period sometimes under Malham and sometimes under Litton.

<sup>9</sup> The sheep lodges on *Malghemore* were Fountains farms which were leased to tenants who were under an obligation to pasture the Abbey's sheep during the summer. In the rental of 1495/6 there were fifteen lodges so-named in the area of *Malghemore*. Michelmores, *The Fountains Abbey Rental 1495/6* (privately printed by the Editor in support of the Yorkshire Archaeological Society's Appeal, 1981).

<sup>10</sup> Fountains had been granted fishing rights in Malham Tarn by William de Percy (1164x1185), and a grant of 'whatsoever he had in the vill of *Malghum* and *Malgmore*, as well in demesne lordship as in service ... and with all the agistment of *Malghum* and *Malgmore*, without retention', and at least by 1239 had

acquired forest rights in Gnoup and Darnbrook by the grant of Richard de Percy; Lancaster, *Chartulary*, II, 484, and I, 450. The lost name *Cunyessker (PNYorks (WR)*, VI, 142, 'rabbit scar') c.1257, may imply a right of warren.

<sup>11</sup> D.S.F. Williams, 'Farming patterns in Craven', *Field Studies* I, v (1963), 127.

<sup>12</sup> *Ibid.*, 129, and *The Hosteller's Guide, Ingleton, Dentdale and Stainforth* (Youth Hostels Association, Welwyn Garden City, 1954), 14-16.

<sup>13</sup> Lancaster, *Chartulary*, I, 80, 157; II, 736.

<sup>14</sup> Michelmores, *Fountains Abbey Lease Book*, lviii-lix.

<sup>15</sup> Sawley had rights for at least 200 sheep in Stainforth and for other beasts in Settle. Bolton held the lordship of West Malham which would confer generous grazing rights there, and also stinted rights in East Malham.

<sup>16</sup> A. Raistrick quotes the early 13th-cent. production of sacks of wool by Fountains, Bolton and Sawley in the proportion of 76:12:16, and suggests that each sack weighed approximately 364 lbs. of wool, and represented between 1750 and 2750 sheep: 'The role of the Cistercian monasteries in the history of the wool trade in England' [lecture to the Royal Society of Arts, Dec. 1953] (published by the Wool Education Society, n.d.), 4-8.

<sup>17</sup> Michelmores, *Fountains Abbey Lease Book*, 32-3.

<sup>18</sup> Lancaster, *Chartulary*, I, 320.

<sup>19</sup> *PNYorks (WR)*, VI, 127. A.H. Smith, *ibid.*, suggests that the second element in *Senesete* as ON *sætr*, but the distinctive shape of the hill suggests that, as in *Cuningesete* and *Jarlesete*, the second element is ON *sæti* 'a seat'. The latter pair are undoubtedly tumuli.

<sup>20</sup> Lancaster, *Chartulary*, I, 320, 449-50.

<sup>21</sup> *PNYorks (WR)*, VI, 127.

<sup>22</sup> *Ibid.*, 127.

<sup>23</sup> *Ibid.*, 155. The name *Sandwath* was recorded in the 13th cent. 'the sandy ford'; in 1637 the name appeared as *nealsing als* 'Sandwich Hall'. Today there are two farms, Neals Ing and Sannet Hall; they are closely adjacent, and each stands near a crossing place of the Silverdale Beck.

<sup>24</sup> J. McNulty, ed., *The Chartulary of the Cistercian Abbey of St Mary of Saltay in Craven*, 2 vols, Yorkshire Archaeological Society: Record Series, LXXXVII (Leeds, 1933), I, 206. GDB, fo. 332r; Yorks. 30W, 1; 4.

<sup>25</sup> *PNYorks (WR)*, VI, 136.

<sup>26</sup> Lancaster, *Chartulary*, II, 467.

<sup>27</sup> *PNYorks (WR)*, VI, 141 and 140.

<sup>28</sup> Lancaster, *Chartulary*, II, 484.

<sup>29</sup> GDB, fos 30lv and 322r; Yorks 1W73, 13W44; SW, Cr4. A. Raistrick, *Malham and Malham Moor* (Clapham via Lancaster, 1947), 11.

<sup>30</sup> Lancaster, *Chartulary*, II, 732-3.

<sup>31</sup> Michelmores, *Fountains Abbey Lease Book*, 60-1.

<sup>32</sup> D.S.F. Williams, 'Farming patterns in Craven', 119.