Some Evidence for 12th- and 13th-Century Linen and Woollen Textile Processing

By MARY C. HIGHAM

FLAX-RETTING POOLS, hitherto unrecognized, still survive in the landscape of NW. England, in close association with fulling-mill sites, tenter banks and simple potash pits. The retting-pool sites have common characteristics — usually on flat land; close to a river, but utilizing small streams which have been channelled to provide a controlled water supply; and raised banks for the drying of the retted flax. The field evidence occurs in documented contexts which show that a widespread linen industry was contemporary with, and often linked to, the 12th- and 13th-century demesne woollen industry.

INTRODUCTION

In work published over ten years ago Mr M. Davies-Shiel showed that there was evidence still surviving for woollen textile processing linked with the domestic system of cloth production in parts of the Lake District, which could be shown to date back at least to the late 15th century. He used field names as indicators of possible sites associated with this. The names of particular significance included ‘walk-mill’ — where woollen cloth was ‘fulled’ to remove dirt and grease, ‘tenter -bank, -hey, -field, -ground’ — where the cleaned cloth was stretched and hung on frames to dry and return to shape following the fulling process, and ‘kiln’ — places where wood or bracken was burned to produce potash for the soap used in the cleansing process. Sometimes a ‘bracken’ field or barn name might show either where the supplies of bracken were grown or where they were stored. He found that, where he had groupings of these names in a fairly small area, he was often able to find the remains of stone-built kilns, the mill site, and sometimes the remains of the tenter banks on which the tenter frames had been erected.

Davies-Shiel had found some examples of similar patterns outside the Lake District, and the writer decided to look initially at the Bowland area to the north-west of Clitheroe, Lancashire (West Riding until 1974) (Fig. 1), where earlier research had indicated that field evidence datable to the medieval period had often survived in recognizable form. However, it quickly became clear that even this initial research would include sites elsewhere in the north-west (Fig. 1). The
Sites mentioned in text
1 Sedbergh
2 Thornton in Lonsdale
3 Burton in Lonsdale
4 Greystonegill
5 Lawklond
6 Rathmell
7 Gisburn Forest
8 Draughton
9 Slaidburn
10 Newton
11 Grindleton
12 Waddington
13 Cliviger
14 Westhoughton
15 Newton-le-Willows

FIG. 1
Sites mentioned in the text
research involved the examination of mid 19th-century Tithe Maps and Schedules
(concentrating on Bowland and parts of the Lune valley), together with the relevant
volume of the English Place-Name Society,3 to see if similar field names could be
identified. These were then checked out in the field, to see if, as in the Lake District,
distinctive landscape features emerged.

The first site examined was Tenter Hill in Slaidburn (Fig. 2, left), which is a
large whale-back hill somewhat isolated in the valley of the Croasdale Beck (a
tributary of the Hodder) but easily reached by a track from the village. Tenter banks
on its SW. face get any available sun even in the middle of winter. These banks seem
to be of a type similar to those of the southern Lake District — the land lying in steps
about 3 m wide, 500 mm high and over 50 m in length. The walk mill (possibly the
fulling mill mentioned in the Duchy of Lancaster accounts in 1422),4 together with
its leat, survives as earthworks below the southern end of the hill. The potash ‘kiln’,
however, seems to be a much simpler (and probably earlier)5 type than that
identified by Davies-Shiel. It comprises two shallow depressions or pits on the top of
the whale-back hill, immediately above the mill site, placed to catch the prevailing
wind but positioned in such a way that any smoke from the ash-burning pits did not
affect the newly-fulled cloth hung out to stretch and dry on the tenter frames.

At Thornton in Lonsdale, the area clearly labelled on modern maps as Tenter
Banks, with its SW.-facing stepped platforms for the tenter frames still clearly
visible,6 also has simple potash pits set into the hillside at the eastern end of the
banks, with the mill close by, on the R. Greta. A similar grouping has been identified
at Grindleton, with the tenter banks and mill site being easily recognized. Unfortun­
ately, the ‘kiln’ site clearly marked on an 18th-century estate map7 has been
incorporated into a garden in the village nucleus so no remains can be identified. At
Waddington, ‘tenter hey’ field names8 were attached to a large sloping field close to
Feizor mill which was in operation in the late 18th century. Although there are
substantial remains of the mill and its dam, there are no ‘tenter banks’ or potash
kilns, possibly because the complex is quite late and belongs to the Industrial
Revolution period. However, there is a local tradition of another mill in Waddington
(Fig. 2, right) at Lillands, where fieldwork revealed evidence for the mill and its
pond, with tenter banks close by on the SW.-facing side of another whale-back hill,
Coplow. This whale-back also has two potash pits set into the back of the hill, in a
similar position to those at Slaidburn.

The farm name ‘Lillands’ (linen lands),9 which was also applied to two very
large fields near the Ribble, suggests a link with another important textile process
which has received very little attention — the retting of flax. When flax was
harvested in late July, it had to be soaked in water to soften the outside of the stem to
enable this covering to be removed so that the fibres inside could be spun and woven
to make linen. This process took place in retting pools, where, for about a fortnight,
the flax would be soaked and turned in slow-moving water. At the end of the retting
period, the flax would be raked out and put on banks to dry before being carted away
to have the stalks broken, either by hand or mechanically, to release the internal
fibres which could then go to the heckler who further cleansed them before they went
to the spinner.
FIG. 2
Left: Slaidburn — sites associated with woollen textile processing
Right: Waddington — sites associated with textile processing.
Bogs, such as Askham Bog,\textsuperscript{10} were evidently sometimes used for the retting of hemp (which, like flax, needs the separation of the fibres from other plant parts) and no doubt similar natural wet pools could have been used for the retting of flax. Certainly Linnall (O.E. *lin* — flax and *haugh* — low-lying ground),\textsuperscript{11} located at Middleton, near Newton-le-Willows, would seem ideally suited to this purpose, as there is always shallow water standing in a natural depression there. Linslac (*lin* and *slakki* — hollow)\textsuperscript{12} in Sedbergh would also appear to be a natural pool which was used for flax retting. However, this research in NW. England has shown that the retting process often involved complex systems of watercourses, pools and sluices.

**THE EVIDENCE FOR FLAX RETTING AT GRINDLETON AND NEWTON**

The best-documented and possibly the best-preserved system is to be found on the flood plain of the Ribble at Grindleton (Fig. 3). The Tithe records for the township\textsuperscript{13} include fields known as ‘Flax Spoils’ and the Parker estate plan of 1765\textsuperscript{14} refers to Mean Flax Pools. Fieldwork and subsequent survey (Fig. 4) has revealed that a number of small streams had been channelled into a watercourse which could either flow straight into the Ribble or be diverted into a whole series of former pools — often with water still in them or, in the rare dry periods, with quite different vegetation to that of the surrounding land. The first of the series of pools (A), and the best preserved, still has a small piece of its simple exit sluice surviving (B). The whole area is still enclosed by a large, flat-topped bank or levee (C) — thought by locals to have been constructed relatively recently by the River Board to prevent the Ribble bursting its banks and flooding the low-lying land.\textsuperscript{15} The banks were certainly constructed to prevent the Ribble flooding, but at a much earlier date, probably when the flax-pool system was in use. They would act to prevent a valuable crop of partially retted flax being swept away downstream as a result of a ‘flash flood’ following a violent summer thunderstorm,\textsuperscript{16} and the flat-topped banks were also available for use in the subsequent drying of the retted material. It seems likely that the three stone buildings, clearly shown on the 1st Ed. O.S. 6 in. map\textsuperscript{17} but now only indicated by the remains of their foundations (D), were associated with the flax retting, as, had they been agricultural, they would have remained in use and in repair, at least until recent changes in farming practice made them redundant. They were probably for storage and for shelter for the workers who had to keep a close watch on the flax during retting. There are ramps (E), off-set for ease of access for carts bringing the newly-harvested flax for retting, and for its subsequent removal to be ‘heckled’, at regular intervals round the perimeter of the banks, and Thomas Jefferys’s Map of Yorkshire, 1771\textsuperscript{18} clearly shows a road near the river, and outside the levee bank enclosing the flax pools.

The banks are relatively stone-free, with a ditch on the inside, showing that the alluvium of the flood plain had been used in their construction. There is, however, one point (F) where the character of the bank changes and there is a marked difference in the material used, with much more stone in the construction. This is at the point where the water used in the retting-pool system was allowed to enter the Ribble, and the infill of stony material is a relatively recent permanent closure at the
FIG. 3
Grindlethorpe—flax-retting complex

- Flax pond
- Embankment
- Drainage channel
- Remains of sluice
- Field-names from Tithe Plan
- 'Flax Spots'
- 'Crook and Tethering Place'

Watercourse linked to retting

Field House Farm

Grindlethorpe

"Mean Flax Dales"

R. Ribble

Grindlethorpe Brook

Textile Processing
A Flax pond
B Exit sluice
C Flat topped bank
D Foundations of buildings
E Access ramps
F Controlling exit sluice
G Ridge and furrow

FIG. 4
Survey of flax-retting complex — Fields House Farm, Grindleton
FIG. 5
Survey of flax-retting complex — Newton-in-Bowland
point where there would have been a controlling exit sluice when the pools were in use.

Firm dating of the flax-pool system at Grindleton is far from easy. Ridge-and-furrow (G), of a width between furrows which in this part of the country appears to indicate an early date, runs to the edge of the banks above the flax pools and is not bisected by them, but this may well be a response to the topography rather than to the existence of the pools, which do seem to utilize and adapt an ancient course of the Ribble, now well above and some distance from its present course. Elements of the system appear on the 18th-century Parker estate plan, but, as yet, it has not been possible to locate any earlier references to its existence. Obviously, though, this does not mean that the flax-pool system at Grindleton was first constructed in the 18th century. It is very similar to the retting area at Newton (Fig. 5) which research suggests had gone out of use by the late 16th century.

At Newton, field names did not suggest the existence of a retting-pool system, and its existence was not obvious until September 1987, when a local farmer, preparing a temporary car park for the Hodder Valley Show, filled some ditches with soil to support railway sleepers to make crossing-points for vehicles to get access. As might have been expected, the weather for the Show was appalling, and there was a rapid run-off of water from the fells, down the blocked-up ditches. What was then revealed was that the ditches formed part of a former system of water courses which could either have flowed straight into the Hodder or been diverted into a system of retting pools — in effect, exactly the same system as Grindleton. The blocking of the ditches had the same effect as the closing of a sluice, and the water ‘backed up’ into some of the former pools, which then filled up, as their former exit was blocked by the embankment of the modern road from Newton to Clitheroe. This had been built right across the middle of one of the series of large pools.

At Newton, there are no large banks to keep out the Hodder, probably because the river is more deeply incised than the Ribble. There are, however, small banks round each of the pools, probably used to dry out the retted flax. The system at Newton seems to have gone out of use before 1591, Saxton’s map of that date clearly showing the precursor of the modern road going through what would have been the middle of the retting-pool complex.

EVIDENCE FOR FLAX RETTING IN OTHER PARTS OF NW. ENGLAND

At what date systems such as those at Grindleton and Newton were constructed cannot be firmly established from documents, but entries in monastic chartularies suggest that flax was retted in places clearly designated for the purpose some 800 years ago. A very explicit reference is contained in the bounds of a grant of land in Westhoughton made to the canons of Cockersand between 1190 and 1218 which not only refers specifically to a ‘retting-pool’ but also suggests a complex of water-courses which probably helped to make up a retting-pool system — ‘following Townbrook . . . thence following the syke between Priest’s croft and Retting-pool moss unto the leach (a stream flowing through boggy land) running into Bradleybrook . . .’. Less obvious is the reference contained in a 13th-century grant of land in
FIG. 6
Left: Rathmell — flax-retting complex
Right: Draughton — flax-retting complex
FIG. 7
Greystonegill — evidence for textile processing (including flax)
Rathmell to the Cistercian Abbey of St Mary of Sallay in Craven. The entry includes a reference to 'Linholm' (flax watermeadows). A similar field name, Lineholme, is found in the 19th-century Tithe Schedules for Rathmell, making it possible to attempt an identification of the 13th-century ‘Linholm’ in the modern landscape (Fig. 6, left). Fieldwork showed that watercourses had been channelled and altered to lead into a field still known as Linham, with an obviously artificial ‘rectangular’ depression located behind the levee of the Ribble — a flax pool — probably a ‘direct descendant’ of the 13th-century retting pools on ‘Linholm’. Another occurrence of the field name ‘Lyne Holme’ is found at Burton-in-Lonsdale, where a retting-pool system can still be recognized, albeit in very poor condition. This was part of the relatively small area of land held in demesne by John de Moubray in 1368.

At Drathaughton (Fig. 6, right), 19th-century Tithe records give the location of ‘Lillands’ — given to Bolton Priory in the 12th century, with the 1473 Priory Rental stating that ‘John Smyth, Henry Wayneman and John (?)Evyor hold at will 1 parcel of land and meadow called Lyndlandes and pay yearly 10s.’ Here too fieldwork has indicated the existence of a flax-retting pool, close to a former mill and mill pond, as at Lillands, Waddington. The probable antiquity of this association of flax-retting pool and fulling mill (together with its tenter banks and potash pits) is suggested by an early 13th-century grant of land in Ellel, near Lancaster, to the canons of Cockersand Abbey, ‘together with a fulling mill on the Conder between Linholme and the fishery’.

Fieldwork has shown that another Cockersand holding, Greystonegill, where many of the names in a mid 13th-century charter are paralleled in the 19th-century Tithe records, clearly demonstrates this association of woollen and linen textile processing (Fig. 7). A mill pond, tenter banks and two potash pits (these on an artificial mound between the closes named Far and Near Kiln Hill) can still be identified. There are also the remains of a retting complex of watercourses, rectangular pools and raised banks on the Holme on the banks of the Wenning, this some 800 years after ‘Arnard the Fuller’ and ‘Walter the Webster’ (weaver) held land and property there.

THE ORGANIZATION OF THE LINEN AND WOOLEN INDUSTRIES IN THE 12TH AND 13TH CENTURIES

The need for the ‘finishing’ processes of woollen textile production to produce good-quality marketable cloth is very well recognized, even ‘Piers Ploughman’ noting that:

Cloth that cometh from the weaving is not comely to wear
Till it be fulled underfoot or in fulling stocks;
Washed well with water, and with teasels cratched,
Towked and tented and under tailor’s hands

Equally well known is the involvement of the major landowners, lay or monastic, in the provision of fulling mills (with their associated tenter banks and potash pits). The monastic involvement with fulling mills has already been mentioned, with lay
examples easily found in the research area — the Lacy family, who held Grindle­ton, Slaidburn and Newton together with other parts of Lancashire in the 12th and 13th centuries, had fulling mills on their estates, as did John of Brittany who had lands in Lonsdale. Both also had dye works (tinctura). The provision of facilities for these finishing processes would have involved considerable capital expenditure but this could be more than offset by the profits to be made from those who had to use them.

Like the fulling mills, retting pools with their watercourses, sluices and raised banks would also have been relatively costly, with major landowners again being the ones able to meet the expense, and make profits from those who had to use the facilities provided. All the sites discussed in this article were associated with demesne holdings, either lay or monastic.

Documentary evidence for demesne flax retting and linen processing is, however, very elusive. There is a tantalizing reference in a 14th-century grant of ‘acram et dimidiam terre cum linaria’. The ‘aria’ ending would seem to indicate a processing works of some kind, but it is impossible to say whether this was a retting pool or a ‘flax mill’. Lynn White suggests that the technology which allowed water power to drive fulling stocks could also have been applied to other similar tasks (such as the driving of lighter hammers to help in the process of separation of flax fibres from the woody interior of the retted and dried stalks?). This technology was apparently being used on the Continent from the late 11th century — ‘a mill for treating hemp’ (which needs similar treatment to flax) being documented for Grenoble c. 1085. If the technology was available in the 11th century in France there is no reason to suppose that it would not have reached England within a century, as part of the process sometimes referred to as ‘the First Industrial Revolution’.

The evidence for demesne income from flax and linen production is equally elusive, but there are possible indicators to its existence. As has already been shown, there is a very close association, both physically and tenurially, between the retting pools, fulling-mill sites, tenter banks and potash pits, and this relationship must have been significant, occurring as it does in so many instances. The possibility of lighter hammers being substituted for the fulling hammers at certain times has already been discussed. The potash pits would have supplied the alkaline lye used in the bleaching of the linen yarn, with the tenter banks available for the drying of both linen yarn and cloth. Indeed, some of the cloth could itself have been a mixture of linen and wool — ‘lynsy wulsy’. Could it be that the ‘fulling mill’ income included ‘hidden’ amounts derived from flax processing and, indeed, linen-cloth finishing which went on alongside the finishing of woollen cloth?

CONCLUSION

The survival of field evidence for wool and linen textile-processing sites in contexts which would suggest that they were in use during the 12th and 13th centuries would seem to have important implications not only for researchers in NW. England, but also for those working elsewhere. For the archaeologist, the use of
place-name ‘identifiers’ for potential sites is nothing new — names such as ‘walk mill’, ‘tenter -hey, -bank’ and ‘kiln’ having been used to locate sites usually associated with woollen processing.

The use of the place-name element ‘lin’ as an identifier for possible flax- and linen-processing sites is, however, one which does not appear to have been considered previously, and yet this research has demonstrated a positive correlation between fields with names which include this element (such as lin-holme and lillands) and the existence of flax-retting pool complexes (although not all retting pools have ‘lin’ field names). All the retting-pool complexes, however, have certain common characteristics which this research has identified — usually on flat land; close to a river, but utilizing small streams which have been deliberately channelled to provide a controlled water supply; raised banks for the drying of flax; and away from settlements because of the pollution to water supplies caused by the retting process. Quite often, the retting-pool system is close to a fulling-mill complex, with which it was probably linked in the processing of woollen and linen textiles.

Both the fulling-mill sites and the retting-pool sites were held in demesne, and there are indications that they were part of the increased involvement of landowners in the development of the textile industry in the 12th and 13th centuries. The lay landowners in the area under discussion had estates in other parts of the country and monastic houses existed elsewhere. One might expect, therefore, that similar developments and similar survivals of archaeological features connected with wool and linen textile processing might be identified elsewhere in the country.

ACKNOWLEDGEMENTS

This article owes much to the help and encouragement of A. C. H. Olivier, Director, Lancaster University Archaeological Unit, and B. J. N. Edwards, Lancashire County Archaeologist. Thanks are also due to all the farmers who allowed us to walk their land; all those who were taken on ‘welly walks’ to look at the sites and give me the benefit of their comments; Jamie Quartermaine, of L. U. A. U., who did all the field surveys; Val Winchester, who drew the plans from his original drawings and also drew the other maps; and to Eric Higham, who has always helped — both with fieldwork and by acting as a ‘sounding board’ for my ideas.

The British Academy gave a grant to help both with the field research and the preparation of the maps for publication, and this assistance is gratefully acknowledged.

NOTES


4 R. Cunliffe Shaw, The Royal Forest of Lancaster (Preston, 1956), 252.

5 There is a reference to ‘Brak inpott’ in the bounds of Gisburn Forest 1205-11 in J. McNulty (ed.), The Chartulary of the Cistercian Abbey of St. Mary of Sallay in Craven, II (Yorkshire Archaeol. Soc. Rec. Ser. LXXXVII, 1933), 91. The position in the bounds is close to a derelict farm called ‘Tenters’, where the writer discovered a stone-lined fulling trough, which would have been filled with a mixture of fuller’s earth, or soap, and water, the cloth put in, and then worked with the bare feet, or ‘walked’ until the required condition was obtained. It was this slow and primitive method of fulling which the fulling mills attempted to replace.

6 The tenter banks at Thornton-in-Lonsdale appear to make use of lynchets, probably constructed at an earlier date than that at which the tenter banks were in use.
A local farmer who held land in the former flax-pool area said that he remembered the banks being built about 1948. When we checked a plan in his possession, dated 1902, this clearly shows the banks in situ. No doubt the banks have been repaired many times since they were originally built, and one such repair is what he remembers.

J. M. Stratton and J. Houghton Brown (eds), Agricultural Records A.D. 1220-1777 (London, 1978), 173-75, note that 'North-west England... seems peculiarly susceptible to heavy thundery rain'.  In the heavy rainfall of August 8th, which affected mainly the Bowland Forest and adjacent Lune valley (i.e. most of the area of study for this work) authentic falls of more than 3 inches were recorded in less than two hours and it is estimated that in the middle of the Forest of Bowland about 4.90 inches fell in about 90 minutes.

Ordnance Survey (Southampton, 1850), maps 165, 166, 182.


Public Record Office (hereafter P.R.O.): MR778. This map has been identified as drawn by Christopher Saxton by Mr B. J. N. Edwards, Lancashire County Archæologist.


Ekwall, op. cit. in note 11, 15.


Smith, op. cit. in note 3, 150.

North Yorkshire County Record Office (hereafter N.Y.C.R.O.): +1793

The farmer used this name when we asked for permission to go onto his land.


P.R.O.: C 135/212/1.


Ibid., 18.


Ibid., 952-53. Place names in Charters 5 and 6 include 'Riddings', 'Graystongill', 'Linghaw', 'Snelser' and 'Wenning'.

Fig. 6, right, shows the field names recorded in the Tithe Schedules (W.R.A.S.: BD 118).

Watercourses and part of the retting-pool area have been affected by the building of the railway in the 19th century.

Farrer, op. cit. in note 31, 953.

Quoted by L. F. Salzman, English Industries of the Middle Ages (London, 1923), 205.

Even the 'minor gentry' had fulling mills and tenter banks on their land—a good example of this is to be found in the demesne holdings of Lawkland Hall (N.Y.C.R.O.: +1771), where field evidence still exists for these features. The fulling mill for Towneley Hall, near Burnley, was located at Cliviger (which still has an area known as Walk Mill, with field names showing that tenter banks and potash pits were part of the complex). There is some evidence to suggest a connection with flax processing, as there is a farm very close to the mill site, known as 'hecklinhurst'—where retted flax was processed.

Several references to fulling mills (including one at Burnley) may be found in P. A. Lyons, Agricultural Records A.D. 1220-1777 (London, 1910), 354.

Smith, op. cit. in note 3, 139.

The Place-Names of Lancashire (Manchester, 1922), 98.

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