

Ingleborough Archaeology Group

A survey of the north-west flanks of Ingleborough 2007-2011

Farming and land management: the prehistoric period

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The first farmers: 4000BC - 2000BC

The first farmers are thought to have arrived in the area around 4000BC. We have surprisingly little evidence about their way of life, although recently there have been two major breakthroughs in this field. The first is the dating of a number of cave burials in the area to the Neolithic period;¹ animal bones from excavated cave deposits, still largely undated, also exist and a number may well be from this time. The second important development is the identification of an increasing number of burial mounds built in the long cairn tradition probably from this period, a pair of which lie within the survey area at Keld Bank.

Otherwise, the main sources of information for the Neolithic period are flint scatters, the pollen record and evidence from better researched parts of the country. The survey area has not proved to be particularly rich in flint finds, though a couple of flakes were picked up during the course of work, one Mesolithic, a flint burin (ING 062) and another other Late Neolithic/Early Bronze Age retouched flake (ING 169). It is thought many other flints survive in local private collections. However, there are several studies looking at the *palynological* or pollen record on and around the Ingleborough Massif² and they indicate that the impact of the new farming methods on the environment, its vegetation patterns and cover, can be dated to around 4000BC and was immediate.

Of particular use for the survey area has been the analysis of historic vegetation through the medium of pollen analysis undertaken by Susan Swales in the late 1980s, where she investigated half a dozen sites on the Ingleborough Massif, three of which lie within our survey area: near³ Braithwaite Wife Hole (SD743 762) Sunset Hole (SD742 760) and the Arks corrie (SD744 751). However, all the radiocarbon dates she recorded were uncalibrated and must be reworked in line with the latest recalibration curves before they can really be sensibly interpreted.⁴

¹ Leach S. 2006 *Going underground: An anthropological and taphonomic study of human skeletal remains from caves and rock shelters in Yorkshire* Unpublished PhD thesis University of Winchester

² Of particular use has been Swales, S. 1987 *The vegetational and archaeological history of the Ingleborough Massif, North Yorkshire*. PhD thesis University of Leeds. Now published online at

³ Swales did not give specific grid references to locate her cores, and these are approximate

⁴ The current recommended curve is found in Reimer PJ, *et al* 2004 *Radiocarbon* 46:1029-1058. The table of dates is available online at <http://c14.arch.ox.ac.uk/calibration.html>

At Braithwaite Wife Hole her data reveal that 6000 years ago there was a mixed woodland landscape interspersed with open grassland. Prior to the introduction of farming, there is already evidence people were managing their environment. During the previous 500 years flecks of charcoal in the pollen cores indicate the burning of woodland by the indigenous hunter-gatherer population. This is a process well-documented elsewhere, thought to be associated with the creation of new woodland glades to attract grazing herds of deer and other game.



Fig.1 Braithwaite Wife Hole lies just beyond the limestone pavement, at the junction of two soil types derived from limestone outcrops and glacial drift

Signs of pasturing animals and subsistence cereal growing start to show around 4000BC, when Red or Sheep's sorrel (*Rumex acetosa/acetosela*) commonly found on acidic grasslands expanded to nearly 30% of the *Total Land Pollen* (TLP), suggesting that much of the grassland on acidic soils around and upslope of Braithwaite Wife Hole became relatively open ground for a period of approximately 500 years. It was accompanied by occasional cereal grains, and weeds associated with disturbed ground such as Plantain (*Plantago lanceolata*). These are all classic indications of changes in vegetation associated with the introduction of farming to the British Isles: grazing, cereal growing and gardening for food. Around the middle of the 4th Millennium BC, and for an estimated period of 80-160 years, she noted an increase of tree pollen in this area from 50% to 65-70% of TLP. Birch and hazel showed the fastest increase, and as both of these trees colonise unused ground relatively quickly, it looks as if the area around Braithwaite Wife Hole experienced a certain amount of woodland regeneration, a result of a less intensely managed landscape. This perhaps suggests that a locally based farmstead or farming hamlet moved the epicentre of its activities elsewhere for a time, but episodes of woodland regeneration dating approximately to this period have been noted elsewhere in the north of England and more research needs to be done into the underlying reasons.

Subsequently, in a remarkable and forceful change, the second half of the 4th Millennium BC witnessed a swift decline of tree pollen from 65-70% to around only 15% of TLP – accompanied by a marked increase in nettles from about 1% to 5%! The latter thrive in phosphate-rich soils, frequently found in neglected corners of farms even today, and they could be indicating a marked expansion of animal husbandry during this period. This all fits in with the established idea that the earliest farming families here are likely to have been

primarily herdsmen and pastoralists, and that if they sowed and harvested cereal crops this could have been a relatively minor though no doubt significant part of their annual routine. Husbandry of domesticated animals, in particular cattle, would have been at the heart of their farming regime and it is likely that they practised some form of *transhumance*, whereby cattle, sheep and goats were taken up into the hills in search of summer pastures each year. It could have been a semi-nomadic existence, perhaps anchored at different seasons in different parts of the landscape and in different types of semi-permanent or temporary accommodation. However, the idea of permanent 'central' homesteads being developed during the course of the 4th Millennium should not be dismissed out of hand. As more and more Neolithic long cairns are identified in the Dales, it is hard not to reach the conclusion that occupation and use of land was no longer (if it had ever been) unsystematic, but defined by usage and custom within recognised social groups. It is almost certain that these early farming families lived somewhere on the lower western flanks of Ingleborough during the Neolithic period, but dwellings from this period are notoriously difficult to locate and their lives are still generally invisible to us at the moment.

From the pollen core site above Sunset Hole Swales noticed some similar patterns to changes in the vegetation, in particular the simultaneous arrival of several species commonly associated with farming activities – Sheep's sorrel, plantain and nettles. She had to estimate the date for this period, and perhaps put it a little too early at c. 4180BC (recalibrated date) when it is probably a couple of centuries later. After a similar period of woodland regeneration, yet again the middle of the 4th Millennium BC proved to be a decisive tipping point: after this date the percentage of tree pollen starts on a gradual downward course, which after 700 years and several minor fluctuations indicates woodland cover down from about 40% to 30% of TLP. By 2870BC heather grew on the fells and woodland cover continued to dwindle. In fact, according to the pollen cores taken from the Arks corrie, the upper wetter slopes of the flanks of Ingleborough were largely treeless by the beginning of the Neolithic.

Co-axial field systems: 2000BC onwards

The first obvious signs of organised farming are the extensive traces of *co-axial* field systems and associated drove roads and tracks that cover the valley sides and bottom. They are most easily seen in slanting winter sunlight, when lengthening shadows highlight the slight earthworks of parallel field banks. The fields are generally long and narrow, running across the contours and are many times smaller than current field enclosures. These are thought to belong to the Iron Age and the Romano-British period,⁵ though research elsewhere in the Dales suggests that many of these complex and land-extensive field systems have their origin in the Bronze Age, in the 2nd millennium BC.⁶

⁵ King, A. and Simpson, M. 2011 'A review of the land use and settlement of the Ingleborough massif throughout the prehistoric and Romano-British periods' in R. Martlew (ed.) *Prehistory in the Yorkshire Dales: recent research and future prospects* Place/Yorkshire Dales Landscape Research Trust 22-36

⁶ Laurie, T.C. with Mahaffy, N.W. and White, R.F. 2011 'Co-axial field systems in Swaledale: a reassessment following recent fieldwork' in R. Martlew (ed.) *Prehistory in the Yorkshire Dales: recent research and future prospects* Place/Yorkshire Dales Landscape Research Trust 37-59



Fig.2 Through the centre of this photograph a line of intermittent stones can be seen running across the terrace (ING 050). This would have formed along the bottom of a hedgeline.

Some of these parallel field banks are to be seen on the upper limestone terraces within the survey area and can be examined at close quarters (Fig.2) (ING 050). They traverse the flat terrace, from scree slope to cliff edge, partitioning the landscape into what were probably separate grazing compartments – basically small fields. The physical remains are slight, with very low banks and/or scattered stones cleared from the land and placed in a line under a hedgerow. Like the enclosures, the banks must have been hedged or fenced to have worked as stock control features, and the whole landscape would have looked very different from the one we see today – small elongated fields edged by hedgerows. We are fortunate in the Dales that we can still see the traces of these 2000-year old (or older) fields, for in most parts of the country medieval and modern ploughing has erased all traces, and if they are visible at all it is only through ephemeral *cropmarks*. Owing to the continued existence of pastoral farming in

the area, practically every dale can provide clear archaeological field evidence dating to these periods, and the remains can be easily mapped and surveyed, either from aerial photographs or, with an experienced eye, on the ground.

The ‘animal pen’ The benefits of detailed planned surveying are clear, forcing the fieldworker to look intensely at each detail of a site. Among the sites planned during the survey was an odd structure of unknown date and function made up of seven or eight limestone boulders set in a loose horseshoe shape about 8m by 5m in size, joined by low earth and stone banks (Fig.3) (ING 051). It lies on the upper of the two limestone terraces

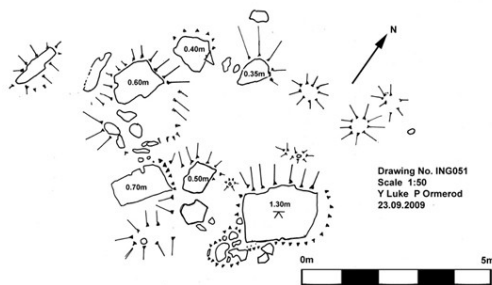


Fig.3 Plan of the 'animal pen' (ING 051)

running along and above the valley of Chapel le Dale. The grasses surrounding the structure are generally rough and coarse, but within it and in its immediate vicinity they are of the type found on enriched limestone soils. It appears that the ground within has been so heavily manured as to alter and improve the soil composition and the quality of the grass. From its shape and size, together with the different quality of turf, we came to the conclusion that one explanation which fitted all factors was that it could be the remains of a small animal

pen. It is obvious from the droppings in the vicinity of the structure that modern sheep are attracted to the site because of the shelter provided by the boulders, and it could be argued from this that the 'improvement' effect is therefore a relatively modern phenomenon. However, the terraces are littered with shelter-providing boulders, particularly towards the south-west end, few of which present quite the same pattern of improved vegetation.



Fig.4 The 'animal pen' looking north-east; the better quality grass is clearly visible in and around this feature. In the middle distance the line of stones crossing the terrace forms one of the co-axial field boundaries discussed above

As the survey proceeded and more details were filled in, it was noticed that the larger boulders rested on a slight platform of underlying limestone pavement, a few centimetres high. This appears to be the effect of weathering of the limestone pavement under the soil all around, the boulders protecting the small patch of ground beneath them from erosion. The pen sits within the upper reaches of a prehistoric co-axial field system, not far away from a relict hedge bank. It is possible the 'animal pen' and the co-axial fields are contemporary, and that the former may help shed light on certain aspects of prehistoric animal husbandry. Phosphate survey of the soils would indicate if there are indeed different levels of nutrients in and around the structure.

Early enclosures

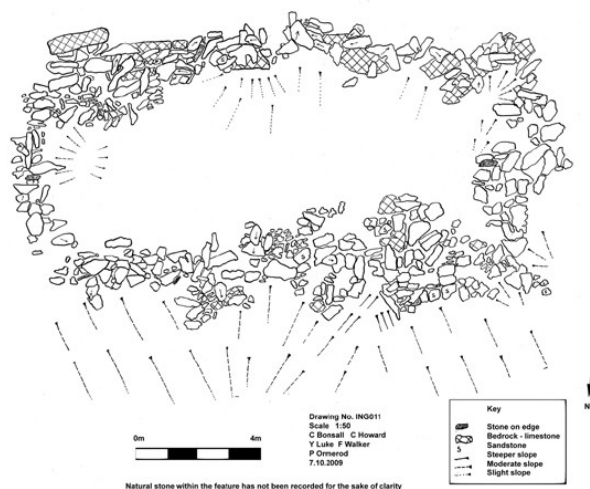


Fig.5 Plan of an enclosure of unknown date (ING 011), heavily robbed of its stone, built beneath the edge of a limestone pavement

The survey area is generously covered with small enclosures and folds, many of no great size, frequently tucked into the lee of a scarp or beneath the protective edge of a limestone pavement. Around 25 enclosures probably used for stock management have been identified within the survey area, of which two-thirds are thought to be of late prehistoric or unknown date. With the exception of the walled Harry Hallam's enclosure their remains are generally defined by low banks of earth with stones, and they are likely to have been hedged or fenced to keep wild animals out and to keep stock in. Some are definitely associated with medieval or post-medieval structures but it is possible that the odd example dates back much further, possibly into the late prehistoric period and we have placed a handful tentatively in this period. Very little research work has been done on isolated enclosures lacking diagnostic domestic structures in the Dales, and it is an area of study which would benefit from further work and survey.

The '400-metre wall'



Fig.6 The '400-metre wall' (ING 083) crossing the plateau towards Nook, to the south-west of Tatham Wife Moss

One of the most enigmatic and least understood structures in the survey area is the long low limestone wall we have come to know as the '400-metre wall' (Fig.6) (ING 083), so-called after its approximate length. It forms part of the southern boundary of the survey area, running from the edge of the limestone plateau north of Nook on a line towards the bottom of Falls Foot and the base of Ingleborough, though it stops well short of these landmarks at Green Edge. Conveniently it is clearly marked on modern 1:25,000 Ordnance Survey maps for the area, which possibly makes it one of the oldest walls in the country marked on modern maps! It finishes rather abruptly where the limestone ends and the glacial till begins, the vegetation turning from green sweet limestone pasture to coarse grasses and sedges on Tatham Wife Moss. In effect it stops part way across the plateau, and this is one of the great oddities of this structure. It may have been judged of sufficient size

to perform the function of herding animals against its great length, though one would have thought a shorter wall or bield would have worked as well for this. Alternatively it may have continued in hedge form, for across the Moss there is little in the way of loose stones as raw material to make a wall. Another option is that it was built during a period when the local mosses were still overgrown with scrub, trees and thorns, thus making a man-made barrier unnecessary.

In the best preserved parts it remains a metre tall, a well built structure with numerous orthostats and coursing. Other parts appear to have been at least partially robbed out. The far south-western terminal includes a triangular-shaped enclosure (ING 084) about 7m in each direction, with bowed sides and a small entrance by the wall, its tiny size looking odd next to the great length of the wall. Part way along there is a gap to let a pathway through, which may or may not be original. Although it is not tall enough to contain sheep or horses, if maintained at a metre high, the wall would have been sufficient to control cattle. There is nothing in its style of construction, nor in the boundary which it appears to be defining, to associate this wall with the post-medieval world, so at the very latest it must belong to the medieval period. Even this date presents us with a problem, for the boundary it defines fails to match what we know of late medieval land ownership in the dale, in that the border of Furness Abbey lands lay more than a kilometre away to the north-east. Perhaps, on these grounds, we should be thinking in terms of a first millennium AD date, or possibly even earlier.



Fig.7 Detail of the wall showing how parts of it were constructed, with long thin slabs set on both sides and stone in between



Fig.8 The gritstone wall (ING 116) descending the flank of Ingleborough by Fall's Foot

One of the great puzzles of this wall is its precise relationship – if any – with the wall which can be followed intermittently down the flank of Ingleborough from just beneath the summit, down Black Shiver to the bottom, northern side of Falls Foot (Fig.8) (ING 116). Though there is a 600m gap between the 400m limestone wall and the gritstone Ingleborough wall, they both run east-west along the same broad trajectory, and it is this shared path which begs the unresolved question of a shared origin. This wall is made of gritstone, the stone which lay to hand on the steep hill slope, but its

form varies considerably along its length. Where stone on the scree slopes is plentiful, lengths are well built and stand a metre or more tall, but elsewhere it forms little more than a collection of stones gathered from the surrounding scree, and in predominantly grassy areas or particularly steep slopes it ceases to exist. It terminates above Tatham Wife Moss, where an embankment runs on the same line down to the plateau before petering out. Perhaps one day both the limestone and the gritstone wall can be partially excavated, and OSL dates established for each. At least we would then know whether or not they were contemporary, and to which period(s) they belong.



Fig.9 The '400-metre wall' looking towards Ingleborough and Fall's Foot

Glossary

Cropmarks

Temporary differences in the colour of crops caused by differences in the speed with which they grow and ripen. This is governed by soil factors, and may be caused by the presence of archaeological features, such as ditches, cut features, masonry beneath the plough soil.

OSL Optically Stimulated Luminescence A dating technique which can be used on minerals and is therefore useful for dating buried stone structures or soils which, for example, contain quartz fragments. The approximate date of the mineral's last exposure to sunlight can be calculated.

Palynology

The study of historic vegetation sequences, particularly through recording and analysing surviving pollen grains found in some soils and best preserved in anaerobic peat.

TLP Total land pollen Traditionally pollen from aquatic plants is excluded from pollen analysis – only tree, shrub and herbaceous pollen grain is counted and the data used to create pollen diagrams. Through these, changes in local vegetation cover over the centuries can be followed.

Transhumance

The movement of sheep, cattle and other grazing animals onto higher ground, often hill country, during the summer months; the herders would live in seasonal dwellings close to the animals.

Further reading

Our survey covered but a fragment of the landscape around Ingleborough. The most comprehensive source of information about the distribution and extent of prehistoric farmed landscapes around Ingleborough can be found in the recent work by Alan King and Mark Simpson 'A review of the land use and settlement of the Ingleborough massif throughout the prehistoric and Romano-British periods' in *Prehistory in the Yorkshire Dales: recent research and future prospects* ed. R. Martlew, Place/Yorkshire Dales Landscape Research Trust 2011. Domestic sites and enclosures associated with the first three millennia of farming, however, remain elusive and most of the dated enclosures discussed here belong to the Iron Age or Romano-British period. The landscape research headed by Tim Laurie in Swaledale, also published in the same volume ('Co-axial field systems in Swaledale: a re-assessment following recent fieldwork' with N.W. Mahaffey and R.F. White) is worth reading for its keen sense of chronology and grasp of the potential development of farming landscapes through the millennia. I would not normally suggest reading a PhD thesis, but the work by Sue Swales (1987 *The vegetational and archaeological history of the Ingleborough Massif, North Yorkshire*. PhD thesis University of Leeds) is now available online at <http://www.leeds.ac.uk/leedsarchive/theses/theses.htm>. It is a fantastic resource for information on the prehistoric environment around Ingleborough and is clearly explained. A large number of radiocarbon dates were obtained and provided these are updated with the new recalibration dates (see footnote 4) there is much of interest here.