

**THE  
KINGSDALE  
SURVEY  
2005 – 2007.**

**AN INGLEBOROUGH  
ARCHAEOLOGY  
GROUP PUBLICATION**



THE KINGSDALE SURVEY 2005 - 2007  
INCORPORATING THE KINGSDALE HEAD PROJECT

**Kingsdale in the Parish of Thornton in Lonsdale,  
North Yorkshire.  
National Grid Ref: SD 712 800**

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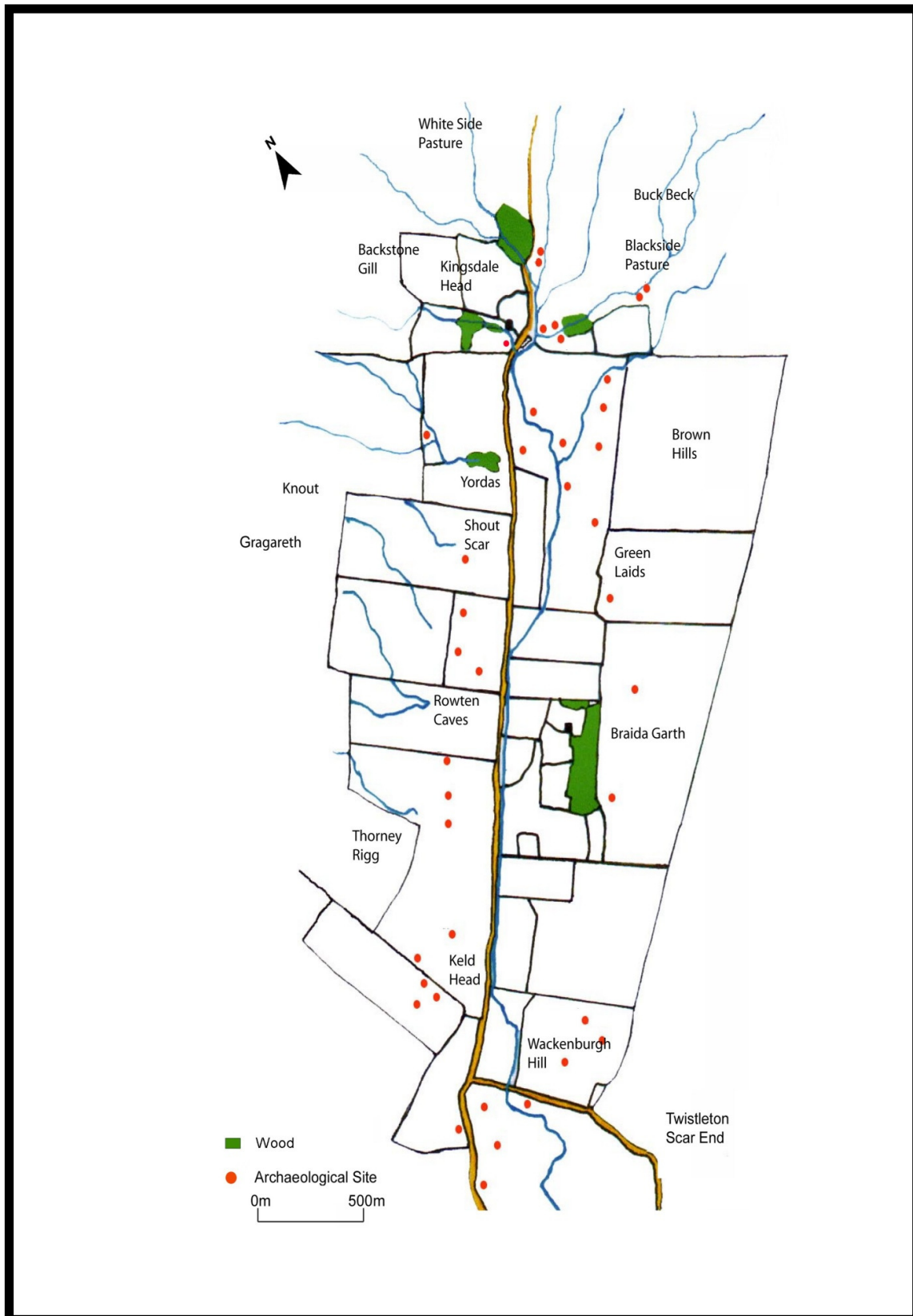
Members of the  
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Archaeological Sites identified in Kingsdale by members of the Ingleborough Archaeology Group with a selection of the Place-Names mentioned in the text.



# ACKNOWLEDGEMENTS

The Committee of Ingleborough Archaeology Group would like to thank all the individuals and organisations involved for their co-operation and support during the three year period of this extensive Project. First, thanks must be extended to the landowners – Mr and Mrs M. Faraday of Kingsdale Head Farm without whose co-operation the excavations at Kingsdale Head could not have taken place. Thanks also to the Bradford University staff, led by Mr John McIlwaine, who supervised the excavation.

Our thanks also go to Mr Robert White, Senior Conservation Archaeologist of YDNPA, for his support and advice during the progress of the Project and for his continuing encouragement and to Vivienne Metcalf for her assistance and supervision of the excavation of trench 7.

For the friendly help, advice and contributions from Mr Jack Pickup and the caving fraternity and Mr Roger Neale with his team of wildlife observers; also to Mr David Butters, manager of the Ingleborough Community Centre, our thanks.

Photography by members of the Ingleborough Archaeology Group.

## CONTENTS

	Page
Map of Kingsdale	3
Introduction	6
The Geology and Landscape of Kingsdale	7
The Landscape through Time	9
Mines and Quarries in Kingsdale	11
Reconstructing the Past	13
The Mesolithic Period	14
From the Neolithic Period to the Bronze Age	15
The Bronze Age Hearth and Pavement at Kingsdale Head	17
Medieval Kingsdale	19
Pottery Finds from Kingsdale Head	21
The Archaeologist at Work	22
The Landscape through Place-Names	24
The Passage of Time	25
The Natural History of Kingsdale	30
Kingsdale Underground	35
Further Reading	38
Annotated Map of Kingsdale	inside back cover

## INTRODUCTION

Following and building on the experience the Group had assimilated during its excavation of the Broadwood Romano-British site in Thornton in Lonsdale (SD 693 735) in September 2003, the Ingleborough Archaeology Group decided to focus its skills on an undated riverside site at Kingsdale Head (SD 712 800). It was decided that the excavation should be incorporated into a five year programme of investigation involving other interest groups.

An open meeting in the Village Hall in Thornton Parish reaffirmed the commitment of the local community, including the caving fraternity and members of the Wildlife Trust. Kingsdale was an early centre for caving and potholing and there is a keen and informed interest in its natural history and botany and a body of knowledge that requires updating.

The Kingsdale Head site is one of a number of sites within the valley which, taken together, indicate a range of human activity extending from the Mesolithic to the present. Apart from two working farms and the country road linking Dentedale with Ingleton, Kingsdale has remained largely undisturbed for centuries preserving a landscape of enormous potential, which the Ingleborough Group has been actively investigating over a number of years with the support of Robert White, the Senior Conservation Archaeologist for the Yorkshire Dales National Park Authority.

It was decided that in addition to the formal academic report on the excavation, the Group should aim at bringing together all research involved in the Project in a series of public exhibitions held in the Ingleborough Community Centre. The enthusiasm generated by the success of these exhibitions has led to the production of this publication, designed to appeal to the general public.

The Kingsdale Head Excavation Archive will be deposited in the Craven Museum, Skipton. Other documentary research on the history of the dale, speleological information and natural history records will be available as part of the Group's archive in Ingleton.

Funding was obtained from the Local Heritage Initiative and the Yorkshire Dales National Park Authority. Direction of the excavation and quality control was by John McIlwaine of the University of Bradford School of Archaeological Sciences and his team. Vivienne Metcalf kindly supervised the final excavation of the seventh trench at Kingsdale Head. The Group hope to continue their archaeological investigation but on a more limited scale.

### **Ingleborough Archaeology Group**

**Meetings are held on the third Monday of the month, at the Community Centre, Ingleton at 7.30pm from October to April. There is a Summer Programme of walks and various practical projects. The ordinary membership annual subscription is currently £10 and hands-on membership (including participation in active investigations) is currently £20. Visitors are welcome and pay £2 a session. For further details contact the Secretary (tel.015242 71072) or visit the Group's web page at:**

**[www.ingleborougharchaeologygroup.org.uk](http://www.ingleborougharchaeologygroup.org.uk)**

# THE GEOLOGY AND LANDSCAPE OF KINGSDALE

## **A Former Lake Bed?**

The valley floor is absolutely flat and has a considerable depth of fine silt below the turf layer. It is thought that a temporary lake may have been dammed up here as the most recent glacier melted. Eventually the force of water may have broken through the moraine dam to carve out the gorge leading to Thornton Force. No one knows how big the lake was, nor how long it lasted, or if it even existed.



Kingsdale Valley Floor

## **Glacial Till**

Along the lower sides of the valley, especially on the eastern side, the ground surface is very hummocky and badly drained. This is because the flowing glacier dumped large quantities of loose rock and clay, called boulder clay or till, along its edges. When the ice melted away the till was left piled up against the valley sides.



Wackenburgh Hill

## **Raven Ray**

Next to Raven Ray is a huge mass of till that forms a barrier across the valley. It consists of material laid down by the front edge of the glacier, and it is known as an end or terminal moraine. Glaciers push rocks and clay in front of them and dump it when they lose energy. The moraine represents the most southerly point in Kingsdale reached by the glacier.



The Glacial Moraine

## **Great Scar Limestone**

Great Scar Limestone forms the lowest rock layers within Kingsdale. This is divided into two different limestone types: the lowest is called Kilnsey Limestone and it is overlain by the slightly younger Kingsdale Limestone which is equivalent to Gordale Limestone in the Malham area. The Kingsdale beds can be seen clearly in the impressive scars of Braida Garth Scar, Long Scar and Tow Scar. These limestone beds have extensive stretches of limestone pavement, especially above Keld Head Scar, with some massive erratics – rocks



Keld Head Scar

dragged from elsewhere and dumped here by the most recent glacier.

### **Yoredale Limestones**

Above the Great Scar Limestone, and therefore younger than it, are the rocks of the Yoredale Series. They consist of alternating bands of limestones and sandstones with some muds or shales. The prominent outcrops above Yordas Cave and in Cluntering Gill are made up of Yoredale limestones. There are eight discrete bands of these limestones: Hawes Limestone at the lowest level, then Gayle, Hardraw Scar, Simonstone, Middle, Five Yard and Underset with the Main Limestone forming the highest layer.

Backstone Gill has a clear sequence of Yoredale beds. There are four limestone bands with mudstone and sandstone layers interspersed.



Backstone Gill

### **Yoredale Sandstone**

Between the limestone bands are beds of sandstone which form the higher parts of the surrounding hills. These rocks are impermeable – not having pores or cracks through which rain water can infiltrate downwards – so the surface above them is badly drained and acidic explaining why they can only support coarse grasses and rushes and why the general appearance of the landscape is brown rather than green. Above these beds is Millstone Grit.



Dodson's Hill

### **Mineralisation**

Several mineral veins cut across the valley, though they are generally very narrow and barren, meaning the minerals are of poor quality. Mining geologists refer to such narrow – and usually parallel – veins as 'scrim'. Quartz is the most common mineral in Kingsdale though there is some barites, and galena (lead ore) and chalcopryite (copper ore).



Buck Beck Mine Spoil Heap

## THE LANDSCAPE THROUGH TIME

Descending into the valley of Kingsdale, across the glacial moraine that seals the entrance from the south, the length of the dale lies before you, flanked by the great limestone terraces of Gragareth to the west and to the east the greener slopes of Wackenburgh Hill and Wherside. There is a sense of remoteness in the valley, of being cut off from the outside world, but scramble up the side of Gragareth, cross the flat mosses of its summit, and the wide panorama of Morecambe Bay unfolds, with its sea lanes to Ireland and the western isles of Scotland and, far below, the M6 motorway replacing the great Roman arterial road linking the south of England with the Scottish borders. There has been a moorland community here for hundreds of years stretching back into prehistory, yet for the last four centuries only the solitary farmstead at Braida Garth remained until the building of Kingsdale Head Farm following the 1819 enclosure.



Overlooking the Site at Kingsdale Head

A narrow country lane runs north from Thornton Parish Church into Kingsdale, climbing steadily until it mounts the moraine and descends into the valley. It then runs along the foot of the limestone escarpments on the west until it reaches the excavation site at the head of the valley some 303 metres above sea level. Beyond the site the lane becomes precipitous, twisting and narrow, climbing steeply along the flanks of Gragareth up to 468 metres before dropping down into Deepdale in the parish of Dent. Older tracks may possibly have followed a somewhat lower route to the north of the site, along Long Gill up to Peat Gate and its spring before rejoining the lane. Groups of cavers congregate at the roadside, making preparations to descend into the myriad of pot holes and cave systems that have attracted the daring and the curious since the earliest days of caving.

Kingsdale Beck, now canalised in its lower reaches, disappears into its limestone bed below Yordas Cave (SD 705 791) and the prehistoric burial cairn, the Apron Full of Stones (SD 709 789) to re-emerge downstream at Keldhead (SD 695 764). When in full spate however the water breaks the surface and rushes down its bed with some force. With the buzzards circling overhead and the heron flying along the beck, it is difficult to remember that this natural landscape has been so heavily influenced by man. Gone is the "great wood" of the thirteenth



century, gone are the heather and the grouse, but the impact of man's past activity is still evident, an imprint recorded on the landscape, visible to those who search for it with an observant and discerning eye.

### **Reading the Landscape**

The landscape of Kingsdale has been shaped by both natural processes and human action. The isolation of the valley, which has determined much of its history, is due in large part to the glacial moraine cutting it off from the more fertile lands of the Lune Valley to the south and from the natural east-west trading corridor from Craven to Morecambe Bay. Yet within these constraints people have been manipulating the landscape for centuries; sometimes deliberately by quarrying, stone-walling, draining, fertilising, digging and drying peat, but sometimes the changes to the landscape have not been planned, as for example through over-grazing, which destroyed the heather and native trees on the higher slopes. Burial and clearance cairns are found throughout the valley, part of the ritual landscape and evidence of the early exploitation of the land which reached its climax in 1819 with the enclosure of the pasture and waste and the building of the great stone walls, which sweep up from the floor of the valley to the heights of the fell. Particularly striking examples of this evidence of human activity are:

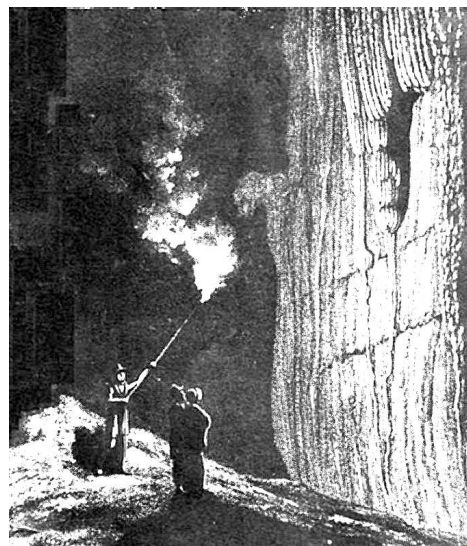
### **Yordas Cave**

By 1750 Kingsdale was being visited for its caves and potholes of which Yordas was the most famous; see page 25.

Despite later attempts to improve on nature by renovating the entrance and despite the climbing tackle hammered into its walls by more recent visitors, Yordas still evokes that power of nature which inspired Wordsworth.

“Substance and shadow, light and darkness, all  
Commingled, making up a canopy  
Of shapes, and forms, and tendencies to shape,  
That shift and vanish, change and interchange  
Like spectres – ferment quiet and sublime, ”

“The Prelude” 1805



### **The Turbary Stones.**

The Turbary Pasture on the slopes of Gragareth was set aside in the Enclosure Schedule to compensate the villagers of the Parish of Thornton for the loss of ancient turbary rights, these were originally to cut the turves of peat for fuel or other domestic use, such as roofing material, but by the 19<sup>th</sup> century the peat was probably used solely for fuel. The stones were set up as markers to indicate where turves could be cut but the plan references indicated by the lettering are still obscure.



### **The Banks of Kingsdale Beck.**

The action of the beck at Kingsdale Head has cut into the bank revealing an area of burnt stone and ash. This could have been the result of land improvement following the 1819 Parliamentary Enclosure or later burning



of the heather but the deposit seemed a curious anomaly. It was sufficient to arouse the interest of the Ingleborough Group, who decided to seek permission to explore the area above the burning and possibly to excavate below it.

## MINES AND QUARRIES IN KINGSDALE

A field survey, carried out in April 2007, located 74 quarries, four mines and a coal pit within Kingsdale. All parts of Open Access land were covered on foot while those fields along the valley bottom were surveyed from the road.

Most of the quarries are found on Great Scar Limestone (77%) with a further 9% on Yoredale limestones and 13% on Yoredale sandstone beds, with one quarry on glacial gravels.

### Lime Kiln Quarries

There were seven lime kilns within Kingsdale though only two still stand. Lime kilns burned limestone to produce quicklime that was spread on the pastures to reduce soil acidity and therefore to improve grass quality. This allowed farmers to keep more stock of a better quality and profitability. These kilns were probably built after the Thornton Enclosure Award of 1819 which carved up the valley's open fields into the individual pastures we see today.



Lime Kiln on Tow Scar

### Public Quarries

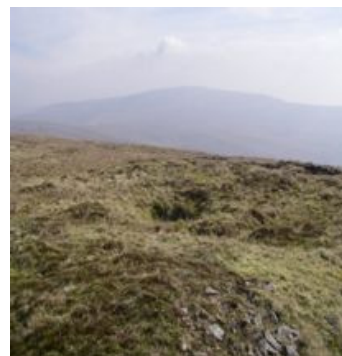
The Enclosure Award allocated three areas as “public quarries” – North End Quarry, Scarr End Quarry and Yordas Quarry. Residents of the township were given the right to take whatever stone they needed as long as they did not sell it outside the parish. They could use the stone for building walls, for their houses and barns, or for repairing tracks.



Scarr End Quarry

### Coal

In the early 19<sup>th</sup> century attempts were made in different parts of the Dales to find sources of coal to meet local needs, either for domestic fuel or for lime kilns. Like this one high on Gragareth, many of them proved to be uneconomic and they were soon abandoned.



Coal Pit at Crook

## Minerals

Attempts were also made in Kingsdale (and on Ingleborough) to find sources of minerals with profit potential. Prospectors opened up horizontal tunnels – called adits – to follow mineral veins. Three adits in Kingsdale were trialled for lead (galena), barytes and copper (chalcopyrite), but they proved to be barren and so were abandoned.



Adit in Buck Beck Gill

## Large-scale Quarries

Some of the limestone quarries in the valley are quite large, for example the public quarries. This one, below Braida Garth Scar, served the lime kiln nearby and probably also supplied stone to householders. Some of the larger quarries supplied freestone, that is large blocks of stone for products such as door or window lintels.



Quarry below Braida Garth Scar

## Lazyman Quarries

Many of the limestone quarries in Kingsdale are very small and were worked to supply stone for building adjacent dry stone walls after the 1819 Enclosure Award. Walling quarries like this one very close to a wall were sometimes known as “lazyman” quarries.



Lazyman Quarry on Lord's Lot Top

## Sandstone Quarries

Some sandstone quarries provided walling stone, but others cut freestone for building barns and houses. Millstone Hagg high on Gragareth is said to have produced stones for grinding corn into flour, and there are abandoned millstones hidden among the rocks below the quarry.



Millstone Hagg

## RECONSTRUCTING THE PAST

What people see in the landscape, and value in it, reflects their ever changing needs and mirrors the society of their day. Landscape itself changes as its resources are exploited, sometimes to extinction. In early medieval times when Kingsdale lay within the Free Chase of Burton in Lonsdale, it was subject to the draconian Laws of the Forest. The great Northumbrian dynasty of the Mowbrays, ambitious courtiers and favourites of Kings, valued this land and their rights within it as a demonstration of their social, political and economic power. Over five hundred years later, John Hutton, one of the earliest and most earnest of tourists, took a rather different, less egocentric view. "The soil in some parts is deep and rich and capable of improvement.....a plan is in agitation for having it inclosed, when I make no doubt but it will support some scores of additional families". This dream was never to be realised and the Victorian landowners were content to speculate on one additional farm and to reserve the valley for their shooting parties.

In seeking to reconstruct the history of this landscape, the Ingleborough Group undertook the excavation of a feature at Kingsdale Head, identified by Percival Turnbull in the year 2000. The common assumption had been that all the visible earthworks probably represented a single settlement, but radiocarbon dating has revealed a far more complex and exciting picture. People have been living here, on and off, for over eight thousand years.

The first trench was cut over the northern section of what appeared to be a stone structure, surrounded in part by a cobbled area. Radiocarbon dating has given a calibrated date of AD1250 -1275, which was consistent with pottery finds recovered from the building. See pages 19 to 21.



A second trench was cut above an area of burning, identified at the side of Kingsdale Beck, where the bank had been eroded. A hearth and pavement were revealed and were radiocarbon dated to approximately 1270 BC, placing the feature firmly in the Bronze Age, at a time of land clearance and settlement, possibly contemporary with the reuse of the great cairn known as the Apron Full of Stones. See pages 17 and 18.



A further trench was cut above an anomaly shown on the geophysical survey which indicated an area of burning. A cross-section of a fire-pit was revealed which was radiocarbon dated to approximately 6,660 BC, the Mesolithic period, a time when the first hunter-gatherers entered the area. Indications on the survey of possible postholes suggest there may have been a simple shelter to one side of the pit but these have yet to be investigated. See pages 14 and 15.



## THE EARLIEST INHABITANTS OF KINGSDALE: THE MESOLITHIC PERIOD.

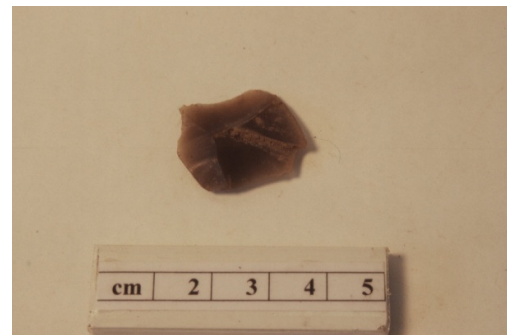
Despite these limestone uplands offering such attractive resources to the hunter-gatherers, with the vast food potential of Morecambe Bay less than thirty kilometres away, few indications of human activity in Kingsdale during the Mesolithic period have been identified. There is possible evidence of a glacial lake, trapped by the moraine, creating a potentially rich landscape and a small number of microliths have been found on the terrace levels surrounding Rowten Pot (SD 698 780). Although the occasional Mesolithic microlith has been found elsewhere in the valley, the archaeological context has been lost, and the scatters of later Mesolithic microliths, so common in the Malham/Settle area, are not found here. It is therefore exciting to record the discovery of the fire-pit at Kingsdale Head yielding a radiocarbon date of approximately 6,660 BC.

There was no surface evidence for the pit and the area was covered by rushes. It was only when the rushes were cleared, and a geophysical scan revealed a high magnetic anomaly, that the Ingleborough Group decided to open a trench at this spot to investigate any possible relationship between this and other excavated features.

The pit is approximately 1.3m in diameter. There was clear evidence of a high temperature having been generated and a piece of charcoal was recovered from between the pit linings which dated it to the mid-Mesolithic period. The charcoal was identified as hawthorn (*Crataegus*), which is reputed to make very good kindling. However there was very little evidence of burning to the pit lining, suggesting that the fire was not burning within the pit. The small stones with which it had been filled were burnt and broken but the most intensely burnt area was around the rim, suggesting that the fire, or possibly hot ashes, had been placed on top of the stones.



No Mesolithic tools were recovered but worked flint flakes of good quality were found on the site. The appearance of these chippings in Kingsdale is of particular significance as the nearest natural source for flint lies across the Vale of York, thus providing possible evidence of prehistoric activity. Isolated finds may simply indicate the movement of people passing through or they could perhaps have been dropped there at a later date, but the number of finds suggests this last possibility to be unlikely.



Work has been done on samples of peat taken from the surface of the glacial clays and prepared for pollen analysis. These probably date back to about 8000 BC, though without carbon dating it cannot be certain. Hazel, alder, birch, pine, fern, ling or heather, sphagnum and juniper pollens appeared to be the most abundant, suggesting a lightly wooded landscape with a good water supply, which would have been very attractive to these hunter-gatherers.

**How was the Pit used?**

The pit may have lent itself to many uses. Joints of meat wrapped in grass or clay could have been cooked by the hot stones, the top of the pit being sealed with clay or soil to retain the heat. A fire may have been kindled on top of the stones and the heat transmitted downwards or hot stones may have been brought in from another hearth.

Water may have been poured over the hot stones to generate steam either for cooking or for processing hides or even to provide a primitive sauna. Smoking, drying or preserving of food or hides are other possible uses or the stones may simply have provided residual heat overnight after the fire had gone out.

Work with the Plains Indians of North America has shown how steam can be used to shrink hides making them thicker and taut and smoking hides with roots and bark produces colour: alder gives a reddish tinge; green willow gives a brown colour and, if allowed to dry, a yellow tinge. Experimental archaeology in this country suggests that heating flint at an optimum depth makes it easier to knap or flake.

A fire-pit could therefore have lent itself to many uses and there is evidence in Scotland that some were used well into the Neolithic period. An arc of circular high readings to the south east of the pit, possibly indicating an area of postholes, encourages speculation that a wind break may have been erected there so that the pit lay within, or at the side of, a simple shelter. An excavation of the other features in and around this trench may resolve some of the questions that at present remain unanswered.

## FROM THE NEOLITHIC PERIOD TO THE BRONZE AGE

Apart from the imposing burial cairn known as the Apron Full of Stones (SD 709 789), no other features within the valley have been dated to this period. Several circular features have been identified as stone based structures and remnants of stone walls and banks can be found which could relate to this period but as yet nothing is proven.

### **Apron Full of Stones.**

This monument is a complex structure some 25 metres in diameter and must have represented an important family commitment to the land. A Bronze Age cremation lay within a scatter of broken flint flakes and beneath a cobbled "floor" were two large Neolithic graves, 2.4 metres in length. There were no skeletal remains. The cairn lies on the river terrace and has been badly eroded by the waters of Kingsdale Beck. Note the dry stream-bed and the modern retaining wall. The beck had disappeared beneath the surface at the time this photograph was taken.



### **Chert Arrowhead**

Chert was used where flint was unavailable. Outcrops of chert are found locally and although it does not flake as effectively as flint, it provides a good substitute. This flanged arrowhead, probably dating from the Bronze Age, was found on the Kingsdale Head site.



## Flint Arrowhead.

A flint arrowhead, unearthed by mole activity, was found amongst a scatter of flint debris at the southern end of the valley, where geophysical surveys had indicated several burnt areas, possibly indicating an early camp site.



## Flint Scrapers.



The thumb scraper (left) and the poorer quality flint tool (right) were found within our first trench. They have both been worked and were probably used for cleaning skins. The flint on the right has retained its natural coating of chalk but the upper edge has been worked. They may of course have been found elsewhere and brought to Kingsdale Head by later settlers but the dating of the fire-



pit to the Mesolithic period and the pavement to the Bronze Age suggest that this is unlikely. Other artefacts have been found in the valley including a Bronze Age axe head in remarkably good condition, which was discovered some years ago underneath one of the great limestone boulders on the upper terraces.

## The Sandymire Timbers.

Although the stony bed of Kingsdale Beck is often exposed as the stream disappears beneath the limestone, heavy rain can produce a powerful and turbulent rush of water. One such recent spate cut into the bank at Sandymire, to the south of Braida Garth, removing the top soil and exposing an assemblage of waterlogged wood. Tests carried out by the York Archaeological Trust in their conservation laboratories showed that the samples had been taken from alder, hazel and willow and that the willow samples bore the dished marks with parallel ridges that indicate beaver chewed wood. Cuts across the other samples indicated human activity.

The timber samples taken from the highest level showed evidence of human activity, having been cut with Bronze Age axes, and were dated to between approximately 1640 to 1450 BC.\* The samples from the lower remains were beaver chewed and dated to between 5750 and 5640 BC, placing them within the Mesolithic period. The European beaver (*Castor fiber*) was native to Britain but by the 13<sup>th</sup> century it had been hunted to extinction. As the marks indicate both human and beaver activity further research is required before the true significance of this discovery can be made clear.

\*We are indebted to Mr N. Crack for obtaining the radiocarbon date.

## THE BRONZE AGE HEARTH AND PAVEMENT AT KINGSDALE HEAD.

About 60 metres to the south of the structure exposed in our first trench, Kingsdale Beck has cut into its bank revealing quantities of ash and burnt stone below the turf. A geophysical survey of the area confirmed the presence of burnt material suggesting the possibility that the Group might have located a so-called “burnt mound” and as the bank was being rapidly eroded, it was decided to investigate. A trench, 4 metres by 4.5 metres, was opened above the feature and excavation revealed a large area of black ash mixed in with pieces of broken, burnt sandstone. Beneath this layer, nearest the beck, there was a natural buff coloured fluvial sediment with a shallow circular depression, which appeared to be the base of a hearth. Further trowelling revealed two upright stones (orthostats) at the western end of the hearth, away from the beck, set on edge, end to end, leading down onto a rectangular working area or pavement of horizontal, dressed flagstones.

Two further trenches were opened the following June confirming that, apart from a few more slabs dislodged from the pavement, the feature was limited in its extent to an area only slightly beyond the original trench.

Charcoal extracted from beneath the pavement and from between the orthostats and the paving stones gave radiocarbon dates of approximately 1270 BC and 1155 BC respectively, placing the structure firmly in the Bronze Age. This evidence of a reasonably settled community within the area was given further credence by the discovery of a flanged chert arrow head, a thumb scraper and a number of good quality worked flints elsewhere on the site.



Between the orthostats and the hearth was an area that had escaped burning, which may indicate a structure built around the hearth, probably not of stone but of sods of earth. The large orthostats slope down to the centre where they abut and create a stepped edge on to the paved area. This may be a rake out point for the burnt material from the hearth. The paved area would have made shovelling up the material much easier but without more evidence we can only speculate.



The Emerging Orthostats



Group Members Sifting Ash



## What purpose did the Structure serve?

Burnt mounds have been extensively studied and are being increasingly identified throughout the National Park. They appear to have served a multiplicity of uses over a considerable period. Thought by some archaeologists to have been used as cooking places or as saunas, the structural evidence in Kingsdale does not support either thesis. No material evidence was forthcoming to suggest its use; no bone, pottery or iron, nothing save the ash and burnt stone. Even the sieving of quite large quantities produced very few pieces of charcoal. It was clearly not a charcoal kiln. However there is a long history of the use of ash. It can be used on the land as fertiliser or fed to stock as a calcium supplement. It can also be used for producing traditional salt or soap or for removing wool from hides by the production of lye water.

Lye water is a form of potassium hydroxide, a caustic liquid that can be used in the processing of hides and skins and in the fulling process. It can also be used for pest control, for example in dipping sheep. Plenty of spring water would be necessary for the production of lye and Kingsdale Head would have been eminently suitable. In addition to the beck, a former channel was created to the north west of the trench, by water flowing from a spring to the north of the site. Today, this stream only flows at periods of high rainfall but it may have flowed continuously during an earlier period. With water and wood available the community may have been sufficiently permanent about 3220 years ago to undertake such activities, supplementary to their pastoral farming.

In contemplating the possibilities of use, we have dismissed any ritual connections as no evidence of such activity was found.

The information gained from the excavation has to be set within the context of the period. Agriculture in Britain from about 3500 BC was mostly mixed farming. It was normal practice to retain fields near the settlement that were manured by domestic beasts that in turn grazed on the surrounding peripheral scrub, woodland or moor. Large scale clearance of land in the late Neolithic period had given way to a brief regeneration of birch and hazel woodland but widespread forest clearance was resumed in the Bronze Age and wheat was grown from about 3000 BC.



The Excavation in Progress

The environmental historian, I.G.Simmons, suggests that the contrast between today's bare fellside and the improved pasture below would have been much less before the valley head was cleared and in areas like this it is likely that there would have been a mosaic of light upland woods with openings cut into them. The Group's investigation into the cut timbers at Sandymire may yet reveal further valuable information on the environment and on any possible human activity within the valley.

## MEDIEVAL KINGSDALE.

The site at Kingsdale Head (SD 712 800) lies north of the confluence of Cluntering Gill Beck and Long Gill in a commanding position overlooking the entire length of Kingsdale. Long Gill provides a natural route-way to the north-east, through to Deepdale and the northern fells. To the north Whiteside Wood, exploited for timber during the First World War, is now only a fragment of its former self. The site was covered with rushes (*Juncus*) but since these were cleared, grass has taken over; suggesting that the land may have been far more suited to pastoral farming than it first appeared.

A geophysical survey carried out by members of the Ingleborough Group identified a sequence of features running from north-west to south-east between a former channel and the beck for a total of about 32 metres (now traceable for 40 metres). A 10 metre square trench was laid out across the northern section of the northernmost structure designed to extend from outside the walls to include the whole of the internal area.

This structure was first identified as a rectangular enclosure defined by a grass-covered foundation and a stone partition wall half-way along its length which, it was suggested, was perhaps all that remained of a former farmstead. From its outer north-east corner to the unexcavated tumble in the south-east corner the building measures 14 metres long and 5.4 metres wide, though the ruinous state of the walls makes it difficult to be accurate. The walls when excavated were about 610mm in height at the maximum point, with an inner and outer stone skin and rubble infill.

The building lay at an angle across a cobbled area that possibly pre-dated it. The cobbles had been laid on the natural surface but we were unable to ascertain whether or not an earlier wooden building had been on the site as we were not prepared to destroy the walls, which may have been obscuring earlier postholes. We could not identify any pad stones, though large orthostats were used in the foundation course, but we did find possible evidence of post-settings suggesting that the walls were of timber set into low dry-stone walls. There was no evidence of bonding and the walls were crudely built but an abutment to the south-east corner, possibly intended to remedy its outward lean, may suggest that settlement continued over an extensive period. It was impossible to calculate the original height of the structure as so much material has been lost. The possible entrance to the building was revealed in a later trench permitting access through the southern section of the building where either animals may have been housed or other farming or dairying activities carried on.

The floor appeared to be originally made up of a compact, dark reddish clay soil with dressed sandstone flags forming a paved area, extending across the northern section of the floor. Cobbles, possibly from an earlier structure, running under the north and west walls into the interior, were exposed in the southern section of the room. Occupying a central position about 2 metres from the north wall was a stone hearth. The upper fill was a dark, reddish-brown sandy silt with colour and texture changes below indicating occasional use over a considerable period,



Looking down the Valley to the South



Section across the North Wall

which suggests the building may have been part of a shieling, occupied only for certain times in the year. This would explain why, apart from the pottery sherds, there were few domestic finds, although a household, as poor as this must have been, would have had little to leave.



Paving in the North-West  
Corner



The Hearth Stones

The structure was possibly the home of a peasant farmer, a typical longhouse-type building, with the domestic quarters on slightly higher ground to the north and farm stock possibly housed in the lower southern section. Radiocarbon dating has placed it approximately between AD 1250 to 1275, which is consistent with the pottery finds excavated both from within and outside the walls. At this time Kingsdale lay within the Burton Free Chase, subject to the Laws of the Forest and controlled by the de Mowbrays. There is evidence in the Quo Warranto Rolls that the Chase was subject to serious exploitation, costing Roger de Mowbray a heavy fine, and that Kingsdale itself was still well wooded.

#### QUO WARRANTO ROLLS 1293 – 1294

“Roger’s [de Mowbray] ancestors 30 years ago occupied and drew to themselves a new free chase in a great wood which is called Kingsdale outside his ground and fee ... distraining all those who had lands or holdings within the bounds of those chases to pay allowances to his foresters ..... Those foresters, when they come in the morning to someone’s house to seek allowances, each of them takes from the head of that house 6d.....When any of them spends the night at someone’s house.....unless a bushel of stacked hay is given to his horse for his food for that night, the head of that house is distrained to come to Roger’s next court and there will be amerced.”



A 13<sup>th</sup> Century  
Labourer

It is possible however that the structure represents part of a commercial sheep house, a *bercary*, although the shape of the building, the hearth and the paving suggest a more domestic use. We recovered many pieces of ruddle used for marking sheep but there is no documentary evidence for commercial farming on a large scale in the valley. Commercial sheep houses were more typical of monastic estates within the dales and Kingsdale appears not to have passed out of secular hands. There were also manorial sheep houses but there appears to be no evidence of such in the records.

Artefacts from the excavation indicate that the site was probably abandoned by the beginning of the 15<sup>th</sup> century. Documentary evidence appears to support this. Tourists visiting the Yordas show-cave in the 18<sup>th</sup> century confirm that Braida Garth was the only habitation in the valley and nothing is recorded on the site in either the 1819 Enclosure Award or the Tithe Map of 1842.

## POTTERY FINDS FROM KINGSDALE HEAD

During the excavations at Kingsdale Head between 2005 and 2007 over one thousand sherds of pottery were recovered. All were fragmentary and only a few were adjoining pieces of the same vessel. All were found in the longhouse-type structure and none was recovered from any of the other trenches.

The pottery has been dated mainly to the 13<sup>th</sup> and 14<sup>th</sup> centuries which is consistent with a radiocarbon date from the building of between AD 1250 and 1275. No sherds were found dating to the 15<sup>th</sup> century which suggests that the building had been abandoned.

The majority of the sherds were Northern Gritty Ware - grey clay with a coarse grit texture. Other sherds were from a coarse salmon pink coloured ware and some were made with a finer texture. The sherds were mostly unglazed, although a few were recovered with a greenish glaze on one side; some were sooted on the outside consistent with being heated on a fire. A few of the sherds were not sooted but they were slightly cracked and crazed on the outer surface indicating that they may have been suspended in boiling water.

Many of the sherds appear to have been wheel-thrown but some were hand-made coiled vessels. Two joining sherds found during 2007 came from a small vessel, (illus.2) which had an internal diameter of approx. 60mm and was made using the coil method. It had thumb nail impressions on the outside. This vessel was unsooted and could have been used as a drinking vessel.

Some of the sherds recovered could easily be identified as rims and many of these were from large diameter pots (illus.1&3). Large diameter vessels were used for the storage and cooking of food in medieval houses and also in dairies and it is possible that some of them might have had wooden or stone lids.

Only two pieces of pottery were found which could be identified as handles and these probably came from jugs or cauldron shaped vessels (illus. 4).



1. A Rim Sherd



2. The Base of a Vessel



3. Rim Sherds



4. Part of a Handle

## THE ARCHAEOLOGIST AT WORK

Archaeology isn't just about digging. An archaeological excavation, which is basically constructive destruction, doesn't just happen on a whim, it normally requires months of investigation and preparation, the exception being a 'rescue excavation' needed because something has been found unexpectedly that is in imminent danger of destruction.

The site under investigation may be a visible earthwork, as was the house structure at Kingsdale, but equally its presence may only be indicated by surface finds, such as pottery, flints, coins or tiles. A landscape survey may reveal features such as field boundaries, ditches, hollow ways, industrial activity and flatter areas of ground that may suggest possible habitation sites. Changes in the height and colour of vegetation, or soil, may indicate hidden features, although sometimes the underlying geology can have the same effect, so an archaeologist does need to be aware of the local geology when undertaking any fieldwork. Which archaeological methods are used will depend on the site and all of this will be included in the project design document that is written before any work is undertaken

Unlike some metal detectorists, an archaeologist's sole aim is not to find hidden treasure. All finds are important, right down to old nails and pieces of broken pottery, and the information that such mundane items contain is as valuable as any precious metal, often more so, as it shows how the majority of ordinary people lived and worked. Archaeologists are also interested in a site's positioning within the surrounding area and how it developed over time.

Historical documents are an important source of information as they can tell us who owned the land, what it was used for and who lived there. Records of any previous finds within an area are usually kept at local record offices and museums and archaeologists use these records to find out if anything similar has been found in the area before, and to see what time periods apply to finds within the area.

Geophysical investigation enables archaeologists to see what lies beneath the ground, without the need to excavate the site; the method used will vary according to what is being looked for. The remains of structures, pits, ditches, medieval ploughing marks, hearths and sometimes graves can all be identified using this type of survey.

Core samples can be taken to investigate how a site may have built up over time and material from these cores can be analysed to discover how the environment has changed. These samples will also demonstrate possible habitation layers, or any earlier waterlogging of the site; this is useful if a site is in an area where the watercourse is known to have changed direction from time to time.

Precisely how a site is excavated will depend on what it is, and what is being looked for. However, whatever the method used, before any work can commence it is necessary to establish a permanent point to which all measurements and recordings taken during the course of the excavation will be related; this is called a datum point. This enables the archaeologist to pinpoint the site's height and location on a map and to accurately plot both the features and any finds that are made during the course of the excavation. This information is recorded either manually or by using specialised software, which can then be used to generate a three dimensional map of the site and the position of all the finds, thereby helping the archaeologist to interpret exactly how the site was formed over time.

If the site to be excavated is an earthwork, then it is likely that a trench will be placed across the banking to see how it was constructed. However, when a building or occupation area is involved, the preferred method will always be an open area excavation; this was the method used at Kingsdale. By excavating the whole of the living area of the structure, plus a further two

metres outside the walls, it would show how the use of the interior had changed over time and possibly reveal where the rubbish pit, or midden, had been.

Whatever type of excavation is used, each layer, or feature identified within a layer, is called a context and is given a specific context number. Individual record sheets are kept for each context, showing its location and extent, the type and colour of the soil, whether it is wet or dry, whether it is natural soil or perhaps river wash, whether it includes ash etc. The contexts above, beside and below that context are noted and, if it is a specific feature, a sketch will be included, together with a description of what the archaeologist thinks the context may represent at any given time.

All finds are given an individual number, and their position is recorded, they are also entered in a register of finds (the object index). This register will note the trench and find number, the context in which the find was made, what the find was thought to be and who found it. The register enables the finds to be analysed and cross-matched with other records and it is particularly useful if the context covers a wide area and several people are involved in the excavation of that context. A spread of a particular type of find may not be immediately evident to the individuals excavating the area. The finds should never be washed or cleaned on site, as this may destroy important residues. Some items such as metal, leather, shale, wood and charcoal will need to be treated in a special way as they deteriorate rapidly once they start to dry out.

Soil samples may be taken from time to time, especially from areas such as middens. When analysed in the laboratory they may provide information about the climate and the things that people ate. They may also show if a specific activity had taken place within the area. Other types of sample may be taken to enable the site to be dated; these are more complicated than soil samples, and are usually examined by dating specialists.

As an excavation is destructive, scale drawings, called plans, will be made at various stages throughout the excavation. These will show all of the visible features, such as stones, soil types and context boundaries; wall edges will be marked, and different symbols used to show whether a stone is upright or flat, and what type of stone it is. Similar plans are made of the sides of the trench; these are called section drawings and provide information regarding the formation of the site over time. Like the finds, all plans and section drawings are numbered and their position recorded in relation to the datum point, thus enabling a complete plan of the site to be produced.

Photographs will be taken of the site, usually at the same stage that plans are drawn, as these also provide a permanent record of what the site looked like. As with everything else, the photographs are entered into a register, including the same information as is used for finds and plans.

Once an excavation is finished, the various types of finds, such as pottery, bone, flint, metalwork, leather and fabric, will be sent for specialist analysis, as will the environmental samples. Specialist reports are prepared and a final report is published. The finds are then sent to a museum, or university, to be kept for posterity, together with the archival records, although these may be sent to the relevant Historic Environment Record. By keeping accurate records of the excavation, not only does it allow people at some future stage to understand what was there, it also allows for the data to be re-interpreted in the light of any future advances in archaeological techniques.

## THE LANDSCAPE THROUGH PLACE-NAMES

Place-name evidence is currently being re-evaluated as our understanding of etymology develops and Kingsdale offers exciting potential to the would-be researcher. Most names within the valley and its enclosing hills are descriptive of such features as streams, caves or pot-holes, the hillsides, ridges, scars and pasture. Rooted in the land, they indicate continuity of use over a long history. The work of the late Mary Higham has pushed research back earlier than the Angles, who had settled the surrounding area by the 7<sup>th</sup> century, to the influence of the native population, who remained within the territory with only a thin veneer of English control. The British elements “dubra” (water) and “dubo” (black) are likely sources for the river name Doe, given to Kingsdale Beck in its lower reaches, and for the medieval “Douugil” identified with the modern Low Douk Cave, with a possible reference to the seam of black limestone, from which the modern “Black Marble Pot” is derived.

Many of the names in Kingsdale appear to be derived from the Old English (O.E.) or Old Norse (O.N.) but few are traceable to a single source. The area was settled first by Angles, then probably from the middle of the 10<sup>th</sup> century, by Norsemen from Ireland, supported by fleets from Norway, who entered the fells and the heads of the upper valleys. Research into the dialect of neighbouring Dentedale indicates that it is saturated with Norse words and the evidence of place-name material strongly supports the theory of chiefly Scandinavian colonisation and their assimilation into the local community.

The derivation of Crook, on the shoulder of Gragareth, typifies the problem. It may be derived from the British “crug” (rounded hill) but lying as it does immediately to the south of Millstone Hagg, which contains the Scandinavian “hag” (cut or gap) and Blakeamaya -OE “maere+blaec” (boundary+bleak)- it appears more likely to date back to the period of English and Norse settlement. The English “croked” (crooked) appears the most likely derivation as the location rules out the Norse “krokr” (a bend in the river). The name Kingsdale is derived from either or both OE “dael” or ON “dalr”. The prefix King could denote royal ownership, which would be appropriate to the history of the valley, or it could be a corruption of kine (cattle); only further research may tell.

### A selection of the older recorded place names.

(For most derivations we are indebted to Margaret Gelling and A.H.Smith.)

	<u>OE: Anglo-Saxon (post 5<sup>th</sup> c.)</u>	<u>ON: Norse (10<sup>th</sup> c.)</u>
Backstone Gill	<i>baec-stan</i> / baking-stone	<i>gil</i> / ravine
Blackside Pasture	<i>blaec</i> / dark, <i>blac</i> / bleak, <i>sid</i> / hill-side	<i>blaec</i> / dark
Braida Garth	<i>brad</i> / broad	<i>breiðr</i> / broad
	<i>braedu</i> / broad strip	<i>garðr</i> / enclosure
Brown Hills	<i>brunn</i> / brown, <i>hyll</i> / hill	<i>brun</i> / brow, edge, slope
Buck Beck	<i>bece</i> / stream in a valley	<i>bucc</i> / deer, <i>bekkr</i> / stream
Gragareth		<i>grár</i> / grey, <i>grjót</i> / stones
Green Laid	<i>lād</i> / water-course, track	
Keld Head		<i>kelda</i> / spring, well
Knout		<i>knútr</i> / rocky hill
Routing Cave	<i>hrutan</i> / to roar	
Shout Scar	<i>scyte</i> / steep, <i>scor(a)</i> / precipitous slope	
Thorney Rigg	<i>hrycg</i> / ridge	<i>hryggr</i> / ridge
Twistleton Scar End	<i>twisla</i> / fork of a river, <i>tun</i> / farmstead	
Wackenburgh Hill	<i>wacu</i> / look-out, <i>burh</i> / fortified,	
White Side Pasture	<i>hwit</i> / clear (good grazing grass)	<i>hvitr</i> / clear
	<i>side</i> / hill-side	
Yordas		legendary giant

# THE PASSAGE OF TIME

## The Romantic Movement

Thomas Jeffrey's map of 1774/5 records few details of the valley, but Kingsdale Beck is shown winding freely along the valley floor, obviously not yet canalised. The only route through is shown as a lane running north from Thornton to Deepdale over High Pike, frequently crossing the bends in the river, but passing the site at Kingsdale Head on the same line as the modern road over Cluntering Gill Bridge. There is apparently no road linking Braida Garth with the outside world.



“.....if on horseback, go about by Thornton; but, if on foot, turn over a stile to the right, and proceed along a footpath near the brook called Doe beck.....Towards the head of this secluded vale...stands a solitary farm house, called Braedagarth, surrounded with a few meagre looking fields, while all the surrounding country has the appearance of a wild unfrequented desert; with here and there, two or three sheep peeping from among the rocks.“

John Housman 1800

This was the period when the first tourists began to descend on Kingsdale. William Camden in his “Britannia”, an account of his travels through England in 1582, had described Ingleborough as stretching with its vast back rising towards the west, with another hill as if flung upon its extremity. In 1773 the great antiquary, Thomas Pennant, passed this way on his journey to Alston Moor. He described Ingleborough as a “great mountain” but had not the time to visit the caverns for which it was famous. He noted that by Thornton Church the road was good, in sharp contrast to the Manor Court Book which records the constables’ regular complaint that although the stocks and whipping post by the church were in good repair, the country roads were, in the main, deplorable.

John Hutton, late Judge Advocate in India, but a local man and for some time vicar of Burton in Kendal, was one of the first to publish an account of his tour of the district in 1781. He records how they collected candles, lanthorn, tinder-box and a guide from Church Style Corner in Thornton and walked to Kingsdale along the Doe, past Thornton Force in its lonely ravine to Keld Head. His object in entering Kingsdale was to visit the already famous show-cave of Yordas. He observed within the cave names inscribed on the walls about 200 years earlier but no longer visible, probably obscured by the thick calcite deposits that cover the walls. We did however discover one piece of graffiti from this period, carefully carved with serifs, “J.T. 1768”. It is very close to the floor of the cave, which is usually lightly flooded, indicating how far the floor must have risen with alluvial deposits over the last 240 years. The roof was so high and the cave so dark that even with candles and torches, John and his companions could not make out the dimensions but they found the “gloom and horror” of the place oppressive and called to mind the sad death of a “poor woman” sheltering here on her way to Dent. This may be a



reference to the “Poore travelling Woman” whose death at Braida Garth was recorded in the Parish Registers on 15<sup>th</sup> September 1728. According to John Housman, who came this way in 1797, she was “big with child” and being taken in labour was found dead in the cave. He also relates the case of “a lunatic escaped from his friends...[who] lived here upwards for a week in the winter season having previously provided himself with cheese and other provisions. Snow being on the ground, he pulled off the heels of his shoes and set them inverted at the toes.” The name of this unfortunate appears not to have been recorded.



Yordas Cave

Engraved by William Westall 1781-1850

Graffiti on the cave wall



### **The Enclosure of Kingsdale 1814-1819.**

By the close of the 18<sup>th</sup> century the local gentry were showing an active interest in the potential that Kingsdale appeared to offer to the financially enterprising. The old hall at Halsteads in Thornton was now gentrified as befitted the residence of one of the leading dignitaries in the area. Thomas Hammond Foxcroft, the only survivor of six brothers, was originally destined for the church. He had risen rapidly to the post of Chaplain in Ordinary to the Prince of Wales and was now to become one of the prime movers in the Parliamentary Enclosure of Kingsdale. The Burrow family of Westhouse had also secured a private fortune through industrial enterprise, trade and land and were eager to invest. John Peart, a solicitor in Settle and a founder member of the Craven Bank, was also quick to see the financial opportunity it offered. Across at Capernwray Hall in Lancashire, Oliver Marton, an avid collector of manorial holdings whose family had already acquired a considerable estate in the parish of Thornton, gave the enterprise his backing. Surprisingly, although the lands within the parish had been amalgamated into the “Manor of Thornton” according to the formal Public Notice published in September 1814, the Lord of the Manor, William 1<sup>st</sup> Earl Lonsdale, appears to have had no active role.

Although the high fells were valued as much for shooting rights as for sheep, and the pasturage on the lower slopes offered valuable grazing, the enclosure was unfortunate in its timing. The

second burst of enclosure activity in the north-west, generated by shortages caused by the Napoleonic Wars, had come to an end and agricultural prices had fallen sharply.

William Pilkington of Snaith, Yorkshire, and Thomas Wakefield of Yealand, Lancashire, both styled "Gentleman" and both from outside the area, were sworn in as Commissioners in 1814 to undertake the division, allocation and enclosure of the "said Tract of Moor, Common and Waste Grounds commonly called Thornton Fell" plus other small parcels of common or waste ground within the parish, amounting in total to 5,450 acres and one rood. Notices of meetings were published in the Lancaster Gazette and, in time-honoured fashion, posted on the main door of the Parish Church. A perambulation of the parish boundaries was completed and the work of enclosure begun.

Just when more agricultural land was brought into production by the canalising of Kingsdale Beck in the lower reaches of Kingsdale is not recorded but it possibly predates the 1819 Enclosure. In the Award, provision is made for the "public Watercourse called Kingsdale Beck" to be kept open, cleansed and scoured and kept in its "present Course" with "Wears and Banks necessary for the protection of the adjoining land from injury by Water in times of Floods" at the expense of the owners of the allotments through which it passed. The reference to its "present Course" suggests that the process of canalisation had been completed and the map appears to confirm the straightened line to which this section of the beck had been reduced but such evidence must be approached with caution. The plans may not have been implemented for several years after the Enclosure.

Care was taken to protect access to the pastures with provision made for the upkeep and repair of both public and private "Carriage Roads and Highways" and for the provision of "sufficient and commodious Gates .....fixed in the Fences of the different Allotments over which the said ...Roads are set out" to be kept in repair by the person or persons directed. Provision was made for two public Highways: the Dent Road running the length of the valley, which was to be maintained at a width of thirty feet, and the Twisleton Road branching from the Dent Road as it entered the valley and leading south east to Twisleton, also thirty feet wide. Two private roads, eighteen feet in width, were to give access from the Dent Road to the Burrow holdings just north of Braida Garth and to the Turbary Ground past Yordas Cave. A third private carriageway was to give access to Braida Garth from the Twisleton Road. The term "Highway" (as defined in Johnson's "Dictionary") did not imply a surfaced road. Twisleton Road remained a green lane and the link with Braida Garth, a public right of way. The two private roads have not survived.

The Turbary Ground, or Peat Moss, was singled out for particular care as this was enshrined in customary rights for common use and essential revenue for the Overseers of the Poor. Stone markers, carved with letters relating to the allocation of the plots (now apparently lost) were probably set up at this time. They may still be found on the upper slopes of Gragareth amongst the grass and reeds.



The Turbary Road leading from Masongill was to be maintained at a width of twenty feet in addition to the access road near Yordas. These ancient common rights were to become the subject of further dispute with the church authorities when the Parish Council

was set up in 1895 and adjudication was sought from Whitehall in 1896, which confirmed that the powers of the Overseers, concerning rights of Turbary, were now vested in the newly elected Parish Council, to be used to supplement the Poor Rates.

Ten acres were put aside for public use as quarries for obtaining gravel for the upkeep of the roads and for getting stone for lime and other purposes, and provision was made for their fencing-off. Scarr End Quarry, at the entrance to the dale, and Yordas Quarry are both marked on the Enclosure Map. Public watering places, essential for washing sheep, were also identified and vested in the Overseers of the Poor, one at Keld Head, another just off Twistleton Road and a third at Kingsdale Head, close to the settlement site. There is no indication in the Enclosure Schedule, or on the map, of an ancient enclosure here, but the Braida Garth estate, the property of James Davis Esq., with an allotment of 17 acres, is marked as such. All the fell side to the east of the farm belonged to Christopher Burrow, recently purchased from the Earl of Lonsdale.

It took five years to complete but on the 10<sup>th</sup> October 1819 the Enclosure Award was executed in the presence of Thomas Hammond Foxcroft, John Redmayne, Edward Lodge, Richard Balderstone, Robert Chapman, Thomas and John Whittingdale and five others.

John Peart, the Settle banker and solicitor, had purchased a considerable acreage at Kingsdale Head and the present farmhouse was built there within a couple of years of the Enclosure. It seems that Peart had perhaps over-reached himself as he was forced to apply for a mortgage soon after. From about 1850 three generations of the Batty family farmed there, as shepherds and gamekeepers until they moved to Braida Garth in about 1887.

### **Life at Braida Garth.**

The only ancient enclosure in Kingsdale for which there is documentary evidence lay around the farmstead of Braida Garth. The estate appears to have belonged to the Richmond Fee, part of the Kendal barony, which can be traced back to the 12<sup>th</sup> century. The earliest reference to a tenant farmer resident there is the burial of Richard Tathame de Bradoe garthe on 8<sup>th</sup> July 1578, as recorded in the Parish Register. His wife, Jenett, survived him by fourteen years but there is no evidence that she continued to reside on the farm. The burial of the next tenant, Richard Baynbrigge, is recorded in 1623 and by 1642 the Brownes were in residence. They were followed by the Masons and they, in turn, by the Langstreths. According to the Parish Registers, a Christopher Langstreth married Katharine Walker in July 1683 and in 1687, Ralph and Stephen, twin sons of Christopher Langstreth of Bradagarth were baptised. Another son, Thomas, married Ann Townson also "of Broadagarth", in June 1695, and his daughter, Denny or Dennese, was baptised the following October. The marriage of George Langstreth to Isobel Tennant is recorded in 1698 and in June 1699, their daughter, Elizabeth was baptised. Eight years later the farm had passed into the hands of the Cragg family and then in fairly rapid succession it was occupied by the farming families of Nicholson, Taylor, Sutton, Jonson and before the close of the 18<sup>th</sup> century, the Metcalfes.

### **The Tithe Map of Kingsdale 1842.**

The Tithe Commutation Award of 1842 records the apportionment of the rent charged in lieu of tithes for the Parish of Thornton, including the townships of Westhouse, Masongill, Burton in Lonsdale and Ireby. The Commissioners were William Blamire and T.W. Buller. They recorded 168 acres of arable, 858 acres of pasture, 74 acres of woodland and 5258 acres of enclosed common land in the parish. The Tithe Map with its schedule follows closely the field pattern of the Enclosure Map and provides useful evidence of field names, though it gives no indication of their origin. As the division of land in Kingsdale had been so recently achieved, the fields there were described simply as allotments, with a few exceptions around Braida Garth. The Turbary Allotment Pasture of 231 acres is recorded as belonging to the Overseers of the Poor and "occupied" by Abraham Kidd. No mention is made of the marker stones. The farm at Kingsdale Head was in the possession of Jane Robinson with Stephen Hargreaves as tenant and the excavation site itself lies in allotment 615 (mistakenly marked as 616 on the map) with an

adjacent sheepfold as 615a. There is no evidence of any settlement, but the point where the road crosses Cluntering Gill is marked Wold Foot before it ascends the fell side still called "The Wold" before entering Dent Parish. The Anglian term "wold" originally meant "forest/woodland", especially in high upland areas, but as the forests were cleared the name survived as meaning "open moorland" or "waste"

Braida Garth (spelled Braisdey) had passed to the heirs of Christopher Burrow and was farmed by John Lambert Senior. The woodland identified as Braida Garth Wood on the OS map (SD 705 774) is recorded in the Award as Scroggs (Wood). It is divided into three allotments, two of which are shown as woodland on the map but the third, and by far the largest, lying on the fell side to the east and above the wooded area, is described and shown as pasture land. That the "wood" element in the name is shown in brackets suggests that clearance had been a recent development. The washfold lying between Yordas Cave and Kingsdale Head appears to have belonged to the farm. A paddock adjoining the farm buildings is called Stoney Parrock (paddock), a possible reference to the term "parrick", sometimes used for an enclosure when a ewe is adopting a strange lamb.

The present farmhouse at Braida Garth was built in 1861, partly as a shooting lodge, to the south of the older dwelling. Braida Garth and Kingsdale Head Farm remain the only homes in the valley. The valley floor can still be flooded after heavy rainfall, and at the age of 90 years, Edward Batty recollected how, as a school boy, he walked waist deep in water on his way back from school. The road through the valley was surfaced with tarmac after the Second World War but has never been heavily used. W.R.Mitchell records Kingsdale as having 25 miles of drystone walling, all of which has to be maintained in good order by the tenants.

Over the centuries Kingsdale has been witness to repeated incidents of human tragedy. Amongst these poignant reminders of the isolation of the valley and its surrounding fells is an incident recorded in an article from the Westmorland Gazette published on the 31<sup>st</sup> October 1829 under the headline: "Extraordinary Disappearance of a Boy on the Dent Mountains", followed on the 5<sup>th</sup> December by an account of the discovery of his body in the large pasture above Braida Garth.

The child, Michael Parrington, aged eight, had been with his two brothers checking on their sheep stock on the common land above Hackergill, Dent, when he wandered off. A mass search of the fells failed to locate him until a shepherd's dog led his master to the sadly decayed body above Braida Garth. That the contemporary view of Kingsdale, despite the Enclosure, was still highly coloured by the influence of the Romantics is evident in the journalist's closing statement: "Probably the eagle, vulture, raven or fox had attempted to feed on the carcass as it lay perishing in its loneliness on the wild and desert mountain."

Although walkers may now ramble with comparative safety along public rights of way and enjoy freedom of access to the high fells, the exploration of the cave systems and potholes offers new challenges to the adventurous and the deaths of seven of the caving and potholing fraternity should not go unrecorded.

A more complete and detailed "History of Kingsdale" is available in disc format as part of the Final Report on the Kingsdale Head Excavation published by the Ingleborough Archaeology Group.

# THE NATURAL HISTORY OF KINGSDALE

Although perhaps not obvious at first, Kingsdale holds a variety of habitats along with their associated wildlife, ranging from meadowland, road verges, limestone and neutral grassland, rocks, scars and limestone pavement to wet acid grassland. Many micro-habitats are also present due to patches of glacial clay or heavy leaching affecting soil drainage and acidity. Where limestone outcrops, or is close to the surface, the plant cover will reflect this but where drainage is impeded or where deeper soil separates plants from bedrock, the soils are likely to be acid to some degree – hence a complex mosaic of vegetation.



Limestone Pavement

The limestone areas, found at lower altitudes, support some typical limestone flowers such as Bird's-foot Trefoil, Fairy Flax, Lady's Bedstraw, Limestone Bedstraw, Blue Moor Grass, Wild Thyme, Quaking Grass and Carnation Sedge. The limestone pavements hold some specialities such as Limestone Oak Fern, Rigid Buckler Fern, Baneberry and Wall Lettuce. At higher levels the wet acid areas hold grasses, sedges, rushes and typical flowering plants of this habitat such as Common Cotton Grass, Harestail Cotton Grass, Deer Grass, Mat Grass, Sphagnum, Cranberry, Cross-Leaved Heath, Bog Asphodel, Ling and Heath Bedstraw.

Farming affects many forms of wildlife and among the guardians of the countryside the farmer's role is a vital one. Grazing sheep prevent scrub developing which would shade out many flowering plants and their associated insects as the land became woodland. Sheep also keep the grass sward short which gives light and warmth to the flowering plants of the turf.

## A Seasonal Overview: Early Spring

One of the first flowers is the Blue Moor Grass which despite its name bears its shining purple heads in short limestone grassland. This Arctic-Alpine is a relic of the Ice Age and although common in the Dales is nationally a scarce plant. Another early flowering grass is Sweet Vernal Grass, eaten readily by sheep. On sunny days



Lady's Bedstraw

Peacock and Small Tortoiseshell Butterflies wake from winter hibernation to feed on willow catkins. Small Tortoiseshells hibernate in houses or outbuildings while Peacocks choose dark crevices or holes in trees. In rocky areas Dog Violet, Wood Anemone and Dogs Mercury will be in flower and on road verges look out for pink Herb Robert, yellow Crosswort and deep blue Germander Speedwell flowers. A tiny early annual, the Rue-leaved Saxifrage, has white flowers now and is to be found on limestone rock. It has flowered, seeded and died by July.

Birds are returning to the valley, an early one being the Willow Warbler from tropical Africa with its waterfall of song to be heard in the woodlands. It builds a concealed dome-shaped nest on the ground. Wheatears also return from Africa to nest in the walls, rocks and rabbit holes, often perching prominently on rocks. The liquid song of the Curlew is a welcome sound over its breeding grounds of meadow, rough pasture and moorland. This large wader with the curved bill nests in Kingsdale every year after spending the winter on the coast. Oystercatchers do the same, nesting by the beck, easily identified by their black and white plumage and red bill. A few Lapwings still nest here with their plaintive 'pee-wit' call. Sand



Wheatear

Martins return from tropical Africa to their nest holes in the banks of the beck. Skylarks are still fairly common in Kingsdale, nesting in rough grass and singing from high in the sky. In sheltered sunny valleys, where Bilberry is in flower we find colonies of the Green Hairstreak Butterfly.

## Late Spring

New fern fronds are unfurling amongst the rocks and fresh leaves are opening on the trees. Pale pink Lady's Smock, the food of the Green-veined White Butterfly, is flowering in the meadows and shady places and its accompanying butterflies are seen on sunny days. Wood Sorrel is flowering amongst the rocks, its clover-like leaves having a sharp taste similar to the common Sorrel of the grasslands.



Green Hairstreak

Swallows, House Martins and Swifts return to nest in the farm buildings and can be seen flying round for insects. You may be lucky and hear the Cuckoo but this bird which is parasitic on Meadow Pipits, one of our common upland birds, is now getting rare. Carrion Crows are nesting in isolated trees. Another bird, now uncommon, is the Spotted Flycatcher which characteristically flies out to catch an insect in mid-air and returns to the same perch. Common Sandpipers, with their piping call, nest along the upper tributaries of the beck. Skylarks are still singing all along the dale.

The road verges are now in full flower with Ox-eye Daisies, Salad Burnet, Lady's Mantle, Common Sorrel, Bird's-foot Trefoil (the food plant of Common Blue caterpillars), Fairy Flax, Mouse Ear Hawkweed and Tormentil. In the verges near the old limestone quarry look for Yellow Rattle, Twayblade Orchids and Goatsbeard, also known as "Jack go to bed at noon", as it closes its flowers in the afternoon.

In short limestone turf look for the pretty white flowers of Eyebright with splashes of purple and yellow and for Wild Thyme with its purple flowers. A rare plant of this habitat is Mountain Everlasting, an Arctic-Alpine with silvery leaves and chaffy white or pink flowers. The rare Barberry is now in flower in the limestone pavements. You might be lucky and find the Butterwort in damp places with its purple flowers, catching insects on its sticky leaves to supplement its minerals.

Butterflies to be seen on sunny days are the Red Admiral (a migrant from central Europe which lays eggs on nettles), Painted Lady (another migrant, this time all the way from North Africa and Arabia, which lays eggs on thistles) and Small Whites. The Small Heath is still common in the dale but its UK population levels have dropped 52% since 1976. In Kingsdale this orange and brown butterfly flutters over areas of well-drained fine-leaved grasslands on which it lays its eggs. Peacock and Small Tortoiseshell butterflies are now laying eggs on nettles.

## Summer

Our beautiful wild Geranium, the Meadow Cranesbill, now bears its large blue flowers on the verges and also here are seen the fluffy yellow flowers of Lady's Bedstraw, Yarrow, Silverweed, Black Knapweed and Betony. Two common umbrella family plants are flowering now – Hogweed, the tallest, and Hedge Parsley, its smaller relative. In a few places see Meadow Vetchling, St John's Wort species and Ragwort, which is a rich source of nectar for insects, and its leaves are eaten by striped Cinnibar Moth caterpillars.



Meadow Cranesbill

Three yellow composites are now in flower – Common Cat’s-ear, Mouse-ear Hawkweed and Rough Hawkbit. Many of the flowers provide nectar for our summer butterflies. In rough unfertilised grassland look for the Meadow Brown, which lays eggs on fine grasses, the Common Blue (Bird’s-foot Trefoil) and if you are lucky the Dark Green Fritillary which lays on violets and is a scarce U.K. species.

Birds which have bred in the dale are now busy feeding their hungry offspring. On grazed grassland look out for Meadow Pipits, Wheatears, Stonechats and Skylarks which are still filling the air with song. Around farm buildings Swallows, House Martins and Swifts will be catching insects, while their relatives the Sand Martins nest in holes in the banks of the beck. Other birds of the beck are Grey Wagtails, Pied Wagtails, Dippers and Herons. On woodland edges look out for Wrens, Spotted Flycatchers and Redstarts. High in the sky Kestrels are hovering and Buzzards are circling. Look out for flocks of Mistle Thrushes.

Rabbits are abundant. Other mammals to be seen include Brown Hares and the occasional daytime Red Fox. Moles are obvious by their molehills caused by burrowing for earthworms. Smaller inhabitants of the dale will be various species of mice, voles and shrews.



Dipper

The grazed grasslands above the road will be bright with flowers of Daisy, Eyebright, Wild Thyme, Selfheal and Tormentil and the Common Green Grasshopper will be singing in sunshine. This song, produced by a file on its hind legs scraping on a rough patch on its folded wings, is used during courtship and is a territorial signal between males.

Each species of grasshopper has a distinct song and that of this species is in bursts of 15 seconds, gradually increasing in loudness and consisting of 150 separate notes. Grasshoppers can fly to escape danger but more often use their powerful hind legs to jump distances many times their own length.

Our three common Dales thistles are now flowering – Spear, Creeping and Marsh Thistles, the latter not always in wet places and having red, pink or white flowers. The scarcer Carline Thistle of limestone will be bearing its yellow-brown flowers on shallow soils and Biting Stonecrop will be showing its cheerful yellow flowers on limestone rocks.

## Autumn

With shortening days our summer migrant birds will be flying back to their winter quarters while other winter visiting migrants take their place. Fieldfares and Redwings, two thrush species, fly from Scandinavia for a milder winter in the U.K. and can be seen feeding in flocks on the berries of Hawthorn and Rowan.

Tree leaves will be turning to yellows and russets before falling to leave a carpet in the woodlands, a rich habitat for fungi of all shapes, sizes and colour. These are valuable for re-cycling decaying vegetable and animal matter and specific species grow in each habitat of the dale.



Fieldfare

Notable among the grassland species are the colourful Waxcaps, ten species of which grow here. Acid pasture holds a few species including the intriguing Scarlet Caterpillar Fungus, which feeds on dead insect pupae underground, while the woodlands hold many species, too numerous to name here.

Two common butterflies prepare to hibernate for the winter, the Small Tortoiseshell and the Peacock. Ivy has its flowers now, a valuable late nectar source for many flying insects, and other summer flowers may continue to brighten the landscape if the weather is not too severe.

## **Winter**

Despite short days and inclement weather there are still wildlife sights to see and a walk up the dale on a sunny day after rain can be a delight with the landscape lit up crystal clear. Birds are easier to see in bare trees and hares are easier to spot with reduced herbage. Our winter visitor thrushes are feeding on berries and on grassland invertebrates, along with Carrion Crows, Rooks and Jackdaws. On rocks and walls the numerous species of mosses, many carrying their attractive spore capsules and colourful lichens, are now more easily seen. In rocky areas some fern species carry their fronds all winter and Yew trees are obvious in their sombre dark green.

## **Species found in Kingsdale.**

### **Ferns.**

Kingsdale is a rich area for ferns, holding 12 U.K. species including the rare Limestone Oak and Rigid Buckler ferns. The other species are Male, Lady, Broad Buckler, Hard Shield, Hart's Tongue, Maidenhair Spleenwort, Green Spleenwort, Wall Rue, Brittle Bladder and Hard Fern.

### **Spiders**

Seven species have been found so far, including Alopecosa, a Wolf Spider which makes no web but hunts its prey, Xysticus, a Crab Spider which waits camouflaged for its prey to come near and Areneus, the Garden Spider which makes its cartwheel web across grykes in the limestone pavement.

### **Molluscs**

Kingsdale is important for snails and slugs as it holds 50 species, which is half the U.K. total. Most species are nocturnal but can be seen during the day in rainy periods. Clausilia and Abida are rare U.K. species found only on limestone, the former being the Door Snail with an unusual narrow pointed shell. Look for it on limestone rock.

### **Trees**

Several species of native trees, as distinct from those planted in woodlands, are found scattered mainly in rocky areas where seedlings are out of reach of grazing stock. Rowan or Mountain Ash carries panicles of orange berries in August that the thrush family relish. Hawthorn or "May" often grows twisted and gnarled. Ash is typical of limestone areas and is fast growing. Sycamore has established itself since being introduced in the Middle Ages. Elder and Hazel are two smaller trees and Willows and Alder grow in wet places. Yew is found on limestone pavements.

### **Fish**

The well-aerated beck contains Brown Trout, as would be expected but also a uniquely marked variety with electric-blue gill covers and other blue markings. There was a population crash of these special fish in spring 2007 but hopefully they will increase again. The Bullhead or Miller's Thumb is another smaller species which hides under stones and there are plenty of invertebrates such as Mayfly and Stonefly larvae to supply adequate food.

### **Where to go.**

This account can only be a summary of the many wildlife delights to be found in this fascinating valley. To see the wildlife for yourself we have suggested some easily accessed places for you to explore a variety of habitats. Take some good reference books and please follow the Country Code. Remember that all the land off the highway, although mostly Open Access, is privately



owned and farmers are finding it increasingly difficult to run a business in the present circumstances. Please leave gates as you find them (open or closed) and keep any dogs on a lead at all times. Please note that neither the editor nor the Ingleborough Archaeology Group can be held responsible for any accident or injury sustained by anyone in any way.

### **The Road Verges**

Fifty-seven plant species have been recorded so far plus butterflies and the road is also a good place from which to view birds. Bring your binoculars. Traffic is light except for summer weekends.

### **The Old Limestone Quarry**

Since it was abandoned over a century ago Scarr End Quarry has in effect become a nature reserve. It is found on the left of the road as it enters Kingsdale from Thornton in Lonsdale and cars can be parked in the lay-by a short way further on (SD 691 755). It is worth exploring the different levels which contain limestone grassland, patches of Ling and Bilberry on acid areas and bare rock surfaces. Ninety-two plant species have been identified as well as many butterflies.

### **Twistleton Lane**

This is a green lane with no traffic, easily accessible from the Kingsdale road (SD 692 760) down to a footbridge over the beck and beyond. It has good verges for flowers and butterflies, plenty of bird activity and water-loving plants by the beck.

### **Footpaths**

If you wish to look further afield there are a number of public rights of way. One such is the Turbary Road, a green track linking the local villages with the Turbary Pasture. It now provides an easy route at a higher level along the valley over upland calcareous and wet acid areas but a WARNING – there are deep potholes close by. It can be accessed from the Masongill Fell Lane or from where it leaves the Kingsdale road near to Yordas Wood. A final recommended route is a path which leaves the Kingsdale road at SD 692 759 and runs directly uphill over limestone grassland to limestone pavements and onward to join the Turbary Road. Eleven species of ferns can be seen plus Baneberry and Wall Lettuce and many other plants which enjoy the shelter of the grykes. Care is needed on the rocky areas and limestone pavements are very slippery after rain.

**Regional Wildlife Trusts**  
**The Kirkby Lonsdale branch meets at the Methodist Hall in Kirkby Lonsdale.**  
**The contact address for the Yorkshire branch is 1, St.George's Place, York.**  
**YO24 1GN**

## KINGSDALE UNDERGROUND.



Marble Steps Pot

A significant number of caves have been excavated for their archaeological remains in the Yorkshire Dales, though caves in Kingsdale have only been excavated by potholers in their hunt for new systems. A small number of caves and shafts in the area have produced artefacts of bone and flint yet this is only the tip of the iceberg if one equates it with the number of known cave sites in the dale which is in excess of 120 of varying degrees of exploration severity. It has often been described as the “Cavers’ Paradise”.

Only a small number of cavers have a working knowledge of archaeology, though most cavers do realise the significance of artefacts they may find while digging for new caves. These are usually reported and passed on to the archaeologists. Few caves of the classic rock shelter type are known in Kingsdale but this, in some way, is offset by a number of dry shafts on the terrace levels. These shafts are of prime importance and they were probably significant features to prehistoric people. They are usually blocked by an accumulation of debris, which acts as a sealed time capsule; a classic example is North End Pot which has produced a number of artefacts from different levels. The major streams

in the area usually sink at large open potholes such as Rowten and Jingling Hole; these active potholes are probably of limited value archaeologically though the adjacent areas quite often have a scatter of flint flakes, some of which are worked.

Almost all the rainfall which falls in the Kingsdale catchment area finds its way underground via these numerous caves and potholes. An underground tunnel, totally flooded for much of its length, traverses the valley floor at a depth of 30 metres in places. It finally surfaces via a resurgence cave known as Keld Head. The outflow goes into the river and through the Ingleton waterfalls into the river Greta, then the river Lune and finally into the Irish Sea at Lancaster.

The western side of Kingsdale contains many fine caves and potholes. One of Britain’s most famous pull-thru caves with several entrances to choose from is Kingsdale Master Cave. All the entrances on the fell above drop quickly down a series of pitches, some entering the master system through sumps. The resurgence area of the cave comprises a network of about 6.7 km of flooded passage making for both the longest underwater network as well as the longest single through dive in Britain, at 3 km from King Pot to Keld Head.



The Entrance to Bull Pot

The eastern side of Kingsdale is not quite so well endowed with potholes though it is quite possible that some still remain to be discovered. The considerable glacial overburden has inhibited all but the most enthusiastic cave diggers and explorers.

Kingsdale has over the years been the scene of numerous cave rescues. The Cave Rescue Organisation has attended in excess of 620 cave rescues and, of these, 80 were incidents at caves and potholes situated in Kingsdale. The first recorded incident was in August 1929 and involved a local caver, Reg Hainsworth. He fell seven metres on the first underground pitch in Swinsto Pot when the ladder belay failed and he suffered a fractured vertebra. In 1935 the Cave Rescue Corps, as it was initially called, was formed. It was probably the first official Cave Rescue Organisation in the world. Reg Hainsworth MBE, became the Chief Controller and was succeeded in 1973 by Jack Pickup.

From time to time cavers have used various techniques to better understand the hydrology of Kingsdale's underground waterflow. Two such techniques are described here to help understand cave exploration.

### **The first successful dye test from Marble Steps Pot to Keld Head.**

This was accomplished on 30<sup>th</sup> August 1952 after a lot of speculation and argument about where the waters went (i.e. to Keld Head or to the much lower Leck Beck Head). Over 5 kg of fluorescein were put into the stream running into Marble Steps Pot. The Northern Pennine Club members kept a daily watch on the risings of Keld Head and Leck Beck Head. At 2.30pm on the 5<sup>th</sup> September, a fellow caver stopped his car at the bend just before Keld Head and even from that distance he could see that the river was brilliantly green. Ingleton waterfalls must have looked quite spectacular. This test managed to eradicate all doubt as to the destination of the Marble Steps water, which apparently took six days to pass to Keld Head, a straight line distance of some 1600 metres. The waterfalls and the river through Ingleton were apparently green for two days.

It is also speculated that a huge volume (reservoir) of pent up slow moving water is behind the Keld Head resurgence, which would account for the long delay for the coloured water to make its appearance. This would have moved quite slowly until pushed along more rapidly by the floodwaters of the 2<sup>nd</sup> and 3<sup>rd</sup> September. It was also thought that waters from Yordas and Rowten might be expected to make a faster transition since they would enter that reservoir much nearer the resurgence. The full text of this report is in the Cave Research Group Newsletter 49/50 (July/October 1954) pages 3, 4 and 5.

More recently, circa late 1970, during a inconclusive CRO operation to find and recover the body of Alan Erith from the Keld Head resurgence, water was pumped by the fire service, from the Keld Head resurgence at approx. 11,000 litres per minute. Within an hour there was sufficient airspace to allow entry into the roof tunnel by swimmers for a short distance. This was similar to the airspace revealed by Reg Hainsworth and others, when they lowered the beck by digging a 100 metre channel during a dry period of low water. Further pumping for several hours at that rate only reduced the level by 25mm. It seems reasonable therefore to postulate that a huge reservoir of undetermined surface area does indeed exist behind Keld Head.

### **Ken Ashton's classic flood pulse testing work**

Ken Ashton pioneered the method of estimating the proportions of flooded to air filled passages by generating artificial flood pulses in dry weather conditions and monitoring known or likely resurgences. The principle is that if most of the cave is a sump then it behaves as a U-tube, so when water is added at one end, it displaces water from the other almost immediately. Air filled cave systems delay the emergence of the flood pulse from the resurgence. A lot of his work was done on the West Kingsdale system BEFORE some of it was discovered. He predicted the West Kingsdale Master Cave and (intriguingly for modern cave divers) the existence of airspace passages between Marble Steps Pot and Keld Head. Here is what he had to say about Keld Head drainage :

“If the Swinsto data is to be taken as at all meaningful it would imply that a flooded section lies from the rising to a point shortly below the end of Swinsto. This is consistent with the data obtained using flow and conductivity methods. The two tests at Marble Steps were done under differing conditions of flow, the water level being higher for the second test. The change in “s” between these results would seem to imply the existence of a Master cave type passage” (“s” being the measured distance from the sink to the rising on a map).

The account of the research is taken from K. Ashton’s “Preliminary Report On A New Hydrological Technique”; Cave Rescue Group Newsletter 98, pages 2-5, published in 1965.

### Some Key Dates in Kingsdale

- |       |  |
|-------|--|
| 1929  | The first attempts by Reg Hainsworth and Gritstone Club, to get down Swinsto Hole, took from Whitsuntide until August but only got as far as the fifth pitch. Colin Green's accident in Kingsdale Master Cave led to the scrapping of hemp cored wire belays.              |
| 1930  | Another attempt on Swinsto was made using rope ladders strengthened with wire to help them survive their passage along the crawl. Reg Hainsworth was defeated at first but eventually reached the final chamber.   |
| 1933  | There was an accident in Gingling Hole when a boulder trapped and broke the leg of Reg Weetman. It took 26 hours to get him to the surface and this incident led to the formation in 1935 of the “Cave Rescue Corps”, later renamed as the Cave Rescue Organisation (CRO). |
| 1939  | Simpsons Pot was explored as far as the bottom of Storm Pot. John Lambert died in Rowten after a fall. BBC Radio broadcast a request for help from all potholers.  |
| 1940  | The "Blasted Hole" in Simpsons Pot was enlarged and the connection was made with the bottom of Swinsto.  |
| 1965  | Ken Ashton predicted the West Kingsdale Master Cave and the existence of airspace passages between Marble Steps Pot and Keld Head.   |
| 1970  | Mike Wooding passed a major psychological barrier when (in Keld Head) he made the first cave dive of over 300 metres.  |
| 1978. | The Keld Head and downstream Kingsdale Master Cave dive lines were linked.   |
| 1979. | The first through dive from Kingsdale Master Cave to Keld Head, which established a new world record (1829 metres), was filmed by Yorkshire TV.  |
| 1986. | Dave Anderson died in Rowten Pot. He was the first member of the CRO to be killed on a rescue.   |
| 1990  | Divers discovered the East Kingsdale Branch of the Kingsdale Master Cave/Keld Head system.   |
| 1991  | The connection of the West Kingsdale sumps with the King Pot sump was followed by a through dive from King Pot to Keld Head, over 3km and the longest diving traverse in the world.  |
| 1999. | The first British cave dive of over a mile in each direction took place in Keld Head.  |

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