

ARCHAEOLOGICAL SURVEY,
INGLEBOROUGH HILLFORT,
INGLETON, NORTH YORKSHIRE

VOLUME 1: TEXT AND APPENDICES



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EXECUTIVE SUMMARY

In July 2010, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Mr Robert White, Senior Conservation Archaeologist of the Yorkshire Dales National Park Authority (YDNPA), to re-survey part of the summit of Ingleborough, near Ingleton, North Yorkshire. The work was required to guide and support the YDNPA's understanding and long-term management of the hillfort and other archaeological remains on the summit, and to provide a detailed record of parts of these remains in the light of their continued deterioration. The archaeological survey work involved the production of metrically accurate hachured plans of the perimeter structure around the north-east corner of the hillfort, a walkover of the remainder of the summit, the compilation of documentary and photographic records relating to previous activity on the summit, and a general condition survey of the archaeological remains. Additional information was also collected for the surrounding area from other fieldworkers, in order to better place the survey area within its archaeological, historical and landscape context. The scope of the survey work was defined by an EDAS methods statement and was funded by the YDNPA.

A 1:200 scale detailed measured survey was undertaken of the perimeter structures around the north-east corner of the hillfort, the survey area measuring in total c.350m long by 25m wide. All major in situ and ex situ structural stones were recorded, as well as internal divisions within the rampart, changes in the materials used, and adjacent earthworks. The same section of the perimeter recorded at a scale of 1:100 by the RCHME in 1988 was re-surveyed and re-drawn at the same scale using the same conventions, so that detailed comparisons could be made that would inform an understanding of change across the wider survey area. Finally, a new plan of the base of the early 19th century hospice tower was made at a scale of 1:50. The bulk of the detailed measured survey work was undertaken in October 2010, with subsequent hand enhancement taking place in November 2010 and March-April 2011. The condition survey was undertaken principally between March-April 2011, although a final field visit was made in October 2011; undertaking the survey over an extended period allowed the full range of activities contributing to erosion that currently takes place on the summit to be observed.

The primary purpose of the current survey was to guide and support the understanding and long-term management of the summit's archaeological remains by the YDNPA, as well as to provide a detailed record of parts of these remains in the event of their continued deterioration. It was never the intention that the archaeology/history of Ingleborough should be re-written or rethought. Nevertheless, the amount of new information that was generated, together with recent fieldwork undertaken on the complex multi-period landscape of which Ingleborough forms part, clearly demonstrates that a new published account, building on that given by Bowden et al in 1989, is desperately needed. The discussion offered by the EDAS survey report therefore attempts to make a start on this process.

Broadly summarised, the EDAS survey has recorded part of the perimeter structure of the summit in greater detail than ever attempted before, producing new evidence for the manner of its construction (and in some instances also its apparent destruction). It has begun to consider how the new information could be related to previous interpretations, and summarises the most recent work. Out of the processes of survey, consideration and summary, several underlying themes emerge. For example, how the pre-existing landform of Ingleborough may have influenced early human activity needs further thought. The argument that activity on Ingleborough predates the Iron Age is persuasive, whether viewed through the possible development of the summit over an extended period of time, or the relationship of pre-Iron Age monuments in the immediate landscape with the summit. However, on current evidence, it is considered that changes in the form of the existing perimeter structure are more likely to relate to differing function rather than chronological development, i.e. those parts of the perimeter structure recorded by the current survey may all be broadly of a single period. The EDAS survey also supports previous proposals about the importance of the Swine Tail area, and has provided possible evidence that the perimeter may have crossed this area too. Although the Swine Tail

part of the hilltop might have been the most emphasised area of the summit in terms of the perimeter, it does not necessarily imply that it was the most important overall - some division of the summit's internal space based on how it was accessed and experienced by those visiting on foot also seems highly likely.

The importance of trying to understand what took place on the summit after it had ceased to fulfil its earlier purposes has also been stressed by recent work and by the EDAS survey. Recent work has emphasised possible changing attitudes towards the summit in the historic period and has begun to place the summit, and indeed the whole massif, within its many landscape, historical and esoteric contexts. This could be enhanced by further study of local land ownership, for example, trying to establish when township boundaries were established and why they take the form that they do. Finally, the EDAS survey has shed further light on the activities of surveyors on the summit during the early 19th century, and this has been important in identifying features which might otherwise be interpreted as the remains of much earlier periods. Sadly, this is also relevant to the 21st century, and much of what still survives on the summit has to be viewed through the lens of sometimes catastrophic recent erosion.

1 INTRODUCTION

Reasons and Circumstances for the Project

- 1.1 In September 2010, Ed Dennison Archaeological Services Ltd (EDAS) were commissioned by Mr Robert White, Senior Conservation Archaeologist of the Yorkshire Dales National Park Authority (YDNPA), to undertake a re-survey of the archaeological remains on the summit of Ingleborough, near Ingleton, North Yorkshire (NGR SD 7419 7451 centred). The work was required to guide and support the YDNPA's understanding and long-term management of the remains, and to provide a detailed record of parts of these remains in the event of their continued deterioration.
- 1.2 The archaeological survey work involved the production of metrically accurate hachured plans of the archaeological remains within a primary survey area, a walkover of the remainder of the summit, the compilation of documentary and photographic records relating to previous activity on the summit, and a condition survey of the archaeological remains. Additional information was also collected for the surrounding area from other fieldworkers, in order to better place the survey results within their archaeological, historical and landscape context. The scope of the survey work was defined by an EDAS methods statement (see Appendix 2), which was approved in advance of the project after discussions with the YDNPA.

Survey Area Location and Description

- 1.3 Ingleborough is located in the south-west part of the Yorkshire Dales National Park, the summit forming the highest point of an extensive massif including Little Ingleborough, Park Fell and Simon Fell (see plate 1). At 723m in height, Ingleborough is the second highest of the Three Peaks, together with Whernside (736m) and Pen-y-Ghent (694m). The massif is bounded by the river Doe to the north and west, upper Ribblesdale to the east, and part of the Wenning Valley to the south (Johnson 2008, 11) (see figures 1 and 2). The settlements of Chapel-le-Dale, Ingleton and Clapham lie c.3km to the north, c.4.5km to the south-west and c.5.6km to the south respectively.
- 1.4 The detailed measured survey area on the summit covered those areas of the perimeter structures that are most susceptible to damage; in total, an area measuring c.350m long by 25m wide was recorded (see figure 3). The majority of this detailed survey area was set slightly lower than the highest part of the summit, with the lowest point being at 711m AOD at Swine Tail at the north-east corner.
- 1.5 The underlying geology of the survey area is Millstone Grit, the Lower Howgate Edge Grit forming the 18m thick summit capping of Ingleborough itself, being coarse grained, containing large quartz fragments (Bowden, Mackay & Blood 1988). The gritstone is overlain by a thin layer of partly vegetated sandy soil, although in many places, particularly towards the north-east, erosion has exposed the gritstone capping. The main body of the mountain below the gritstone capping, but above the limestone plateau, is formed by the Wensleydale or Yoredale Series of rocks, comprising a repeated sequence or cyclothem of sedimentary rocks, generally horizontal with bands of limestone, mudstone and sandstone, the mudstone often being written up as a shale (Johnson 2008, 48-51 & 54).
- 1.6 The summit of Ingleborough lies within an extensive area of upland grazing, although sheep were rarely seen on the summit during the course of the EDAS survey. The summit is also visited by upwards of 100,000 walkers every year, and

this has resulted in heavy erosion of some parts, particularly (although not exclusively) that part leading from Swine Tail to the 1953 walkers' shelter located to the north-west of the centre of the summit.

- 1.7 The whole of the Ingleborough massif falls within the Yorkshire Dales National Park and the summit is designated as a Scheduled Monument (National Heritage List for England no. 1008876). The site is also recorded as an Iron Age univallate hillfort by English Heritage's National Archaeological Record (site SD77SW1), as is the Victorian prospect tower (site SD77SW112), and by the YDNPA Historic Environment Record (HER site MYD 3700).

Aims and Objectives of the Project

- 1.8 The aims of the project were twofold. Firstly, to produce a detailed measured survey of those parts of the perimeter structures which are being most badly damaged by visitor erosion and other activity, together with a detailed measured survey at a larger scale of other individual features. Although this element of the work primarily forms a detailed record of these parts of the perimeter as they existed at the time of the survey, it could also be used as a baseline record against which to assess future damage/changes to these parts of the perimeter, and to guide and support the YDNPA's understanding and long-term management of the archaeological remains on the summit. The second aim of the project was to undertake a condition survey of the summit, charting the development of erosion and cairn building over the past 200 years, and cataloguing existing summit cairns and shelters.

Summary of Previous Research and Investigation

- 1.9 A more detailed account of previous research and investigation undertaken on the summit of Ingleborough is given in Chapter 2 below, but it is reasonable to state, as other authors have done previously, that prior to the 1980s, Ingleborough attracted a far lesser degree of archaeological interest than might have been expected given its prominence in the regional landscape.
- 1.10 Although the mountain attracted the attention of artists, poets and travellers (Johnson 2008, 1-9), the first known antiquarian references in the mid to late 18th century are brief, focusing mainly on the remains of the most visible of the ruined structures on the summit. Early 19th century tourist guides provide the odd useful snippet of information, and the work undertaken by early surveyors in the period c.1805 to 1835 is very valuable for locating ruinous structures referred to in the previous century. The Ordnance Survey produced their 1st edition 6" map of the area in 1851 (see figure 4). However, it is not until 1853 that the first detailed archaeological description of the summit was produced by John Phillips, accompanied by James Farrer's survey plan (Phillips 1853, 26-29) (see figure 5). Despite the summit appearing frequently in walking guides of the area, there was then a gap of almost 80 years before further archaeological descriptions appeared (see, for example, Elgee & Elgee 1933, 119-120 and Raistrick 1939, 124-125). The earliest known aerial photograph of the summit of Ingleborough was taken in 1938 and this, together with a series of superb aerial photographs taken in 1945 and 1949 (see figures 6 and 7), provides a very valuable impression of the appearance of the summit prior to post-war tourist erosion.
- 1.11 Since the 1980s, the volume of work relevant to the summit has increased considerably, and importantly the more recent works have begun to consider Ingleborough as merely one part (albeit a very prominent one) of a complex

regional historical and archaeological landscape. In 1987, King published a short article on the summit, together with a sketch plan showing an outer wall on the north-west face below the summit, and a reconstruction of the perimeter wall depicting details of its internal construction (King 1987) (see figure 10). In the following year (1988), in direct response to a request from the YDNPA linked to concerns about tourist erosion, the then Royal Commission on the Historical Monuments of England (RCHME) undertook the first measured survey work on the summit since Farrer's mid 19th century plan was produced (Bowden, Mackay & Blood 1988). The central part of the Ingleborough massif was surveyed at a scale of 1:2500 through ground-checked aerial photographic transcription to record archaeological features and areas of erosion (see figure 11). The summit itself was then surveyed at a scale of 1:500 using EDM, plane table and graphical methods (see figure 12); in addition, a 27m length of the perimeter structure was recorded at 1:100 scale to demonstrate details of its construction. The results of the 1988 RCHME survey work were summarised in volume 55 of the *Proceedings of the Prehistoric Society* in the following year (Bowden, Mackay & Blood 1989) (see figure 13).

- 1.12 In 2000, two members of the Ingleborough Archaeology Group carried out a geophysical gradiometer survey of part of the summit (Batty & Crack 2000; Luke 2003, 26). An MA thesis undertaken by Luke (2003) questioned previous interpretations of the summit remains as a hillfort, and her thoughts were later summarised in an article published in the *Prehistoric Research Section Bulletin* of the Yorkshire Archaeological Society (Luke 2006). In 2008, Johnson published a detailed overview of the landscape history of the Ingleborough massif, together with adjacent valleys, including the most detailed consideration to date of the geological and geomorphological processes by which the local landscape had been created (Johnson 2008). King and Simpson (2011) have also provided a review of the land use and settlement of the Ingleborough massif during the prehistoric and Romano-British periods, including GPS mapping of settlements, cairns and field systems in the wider landscape, although the treatment of the summit is necessarily limited. Most recently, the north-west flanks of Ingleborough have been the subject of a series of excellent papers resulting from survey work carried out by the Ingleborough Archaeology Group between 2007 and 2011 (Luke 2012a).

Survey Methodologies

- 1.13 As noted above, the scope of the archaeological recording project was defined by an EDAS methods statement (see Appendix 2), which was approved after discussion in advance of work by the YDNPA; some elements of the work, for example earthwork survey for the local archaeological group, was not carried out. The project corresponds to a Level 3 enhanced and integrated survey as defined by English Heritage and elsewhere (English Heritage 2007, 23-24; Bowden 1999, 78-80 & 189-193).

Phase 1: Desk-top Survey

- 1.14 A desk-top survey was undertaken to collate information relating to the known archaeological and historical resource of the survey area. Information was obtained primarily from the YDNPA HER, together with secondary sources; both David Johnson and Yvonne Luke kindly supplied copies of material that would otherwise have been difficult to source. The information thus obtained comprised records of previous historic research and archaeological activity, aerial

photographs, past management and land ownership records, and historic maps and plans.

Phase 2a: Detailed Measured Field Survey

- 1.15 A detailed measured survey at a scale of 1:200 was undertaken of a portion of the perimeter structures, the survey area measuring in total c.350m long by 25m wide (see figures 3 and 14). All major *in situ* and *ex situ* structural stones were recorded, as well as internal divisions within the rampart, changes in the materials used, and adjacent earthworks. The previous RCHME 1988 1:500 scale survey had distinguished between those areas of the perimeter with vegetation cover and those without (see figure 12). However, given the increased level of structural detail captured by the EDAS 1:200 scale survey, it was decided to provide this distinction textually, rather than visually. The resulting 1:200 scale plan was supplemented by five profiles constructed across the perimeter at a scale of 1:50, including several that lay outside the main survey area so as to provide a contrast with the remains recorded within. The same section of the perimeter recorded at 1:100 scale by the RCHME in 1988 was also re-drawn at the same scale, and using the same conventions, so that detailed comparisons could be drawn that would inform an understanding of change across the wider survey area. Finally, a plan was made of the base of the early 19th century hospice tower at a scale of 1:50.
- 1.16 The methodology used to capture the survey information was the same in all cases. At the commencement of the project, survey stations were positioned to National Grid coordinates using Leica GPS 1200 equipment. Survey stations were created with the Real Time Kinetic Kit and 500+ readings were taken with corrections received from the Leica Smart NetGPS correction service. A mean of the 500+ readings was then produced. The accuracy of any such readings is generally dependant on the number of satellites visible to the receiver, which was at a maximum in this location. Horizontal accuracy was generally in the region of +/- 30mm although this depended on the number of readings taken and the number of satellites visible. All coordinates produced were related to the OSGB36 Coordinate System and scale factors. Vertical datum was computed using the OSTN (02) Geoid Model.
- 1.17 Following the GPS element of the survey work, the bulk of the detailed survey was undertaken using a Trimble 5600 robotic Total Station, from the GPS survey stations. Typical accuracy values for measurements taken with this equipment were +/- 5mm + 2 parts per million per distance. The completed survey information was reduced in Civilcad software using the GPS station values, combined with the GPS survey information, and then outputted in CAD as DWG/DXF files. Data was plotted on drawing film for hand enhancement, which was undertaken in the field, rather than remotely; this hand enhancement was undertaken by Shaun Richardson of EDAS, assisted on several days by David Johnson. The resulting site surveys are presented as wet-ink interpretative hachure plans using conventions established by English Heritage (2007, 14-16 & 31-35). The completed hachure survey plans and other drawings were then scanned to produce electronic copies. Larger scale plans, at 1:10,000 and 1:2,500 scales, have been used to put the survey area into context using Ordnance Survey map bases.
- 1.18 The drawn survey work was supported by a digital photographic record. Each part of the survey area was photographically recorded in colour using a digital camera with a 10 megapixel resolution. English Heritage and other photographic

guidelines were followed, and each photograph was provided with a scale (English Heritage 2007, 14; Bowden 1999, 97-104). More general digital photographs were also taken showing the landscape context of the summit and of specific features. All 195 photographs have been clearly numbered and labelled with the subject, orientation, date taken and photographer's name, and have been cross referenced to digital files and a photographic catalogue (see Appendix 2).

- 1.19 The bulk of the GPS and total station work was undertaken in October 2010, over a period of three separate days. In order to maximise survey time on the summit, rangers from the YDNPA transported EDAS survey staff and equipment to within 200m of the summit using an Argo-Cat vehicle, and their help is gratefully acknowledged. On the first day of the GPS/total station survey work, members of the Ingleborough Archaeology Group attended and assisted with the site work. The hand enhancement commenced in November 2010, but adverse weather conditions on the summit during the winter of 2010/2011 meant that this element of the project was not completed until March and April 2011. During the hand enhancement, EDAS accessed the summit by foot, carrying the necessary survey equipment.

Phase 2b: Condition Survey

- 1.20 A condition survey of the summit was also undertaken, recording all cairns, shelters and erosion on the summit, both within and beyond the detailed measured survey area. It was not the purpose of the condition survey to produce a completely new topographic survey of the summit, although sufficient information was gathered to allow the results to be compared with the existing RCHME 1988 survey - the main purpose was to allow the YDNPA to make recommendations as to which cairns and/or structures should be dismantled or relocated. Historic aerial photographs were examined as part of this work, to attempt to construct a chronology for the existing cairns and shelters on the summit. Areas of erosion and other damage were also identified using vertical photography and combined with the information from the condition survey.
- 1.21 The results of the condition survey were presented at 1:500 scale so they match the 1988 RCHME survey, and have been superimposed on that survey. The condition survey was undertaken principally between March and April 2011, although a final field visit was made in October 2011. Undertaking the condition survey over this extended period allowed the full range of activities contributing to erosion that currently take place on the summit to be observed; as with the previous 1988 RCHME survey, quite substantial structures were seen to have been demolished during the course of the condition survey.

Phase 3: Survey Report and Archive

- 1.22 An analytical field survey archive report has been produced, based on the information recorded in the field. This report assembles and summarises the available evidence for the survey area in an ordered form, synthesises the data, comments on the quality and reliability of the evidence, and how it might need to be supplemented by further fieldwork or desk-based research. Simply to aid identification and discussion of the EDAS survey results, some of the recorded earthworks and other features are numbered in bold type with the prefix 'EDAS', to distinguish them from, for example, RCHME identifiers (e.g. **EDAS 1/2**). The report text also makes reference to the photographic record - photographs are referenced in italic type and square brackets, the numbers before the stroke representing the film number and the number after indicating the shot (e.g. *[5/32]*).

The survey report also contains two appendices, comprising the photographic catalogue and a copy of the EDAS methods statement.

- 1.23 A project archive, comprising paper, magnetic and plastic media, relating to the project has been ordered and indexed according to the standards set by English Heritage (EDAS site code IHF 10). This was deposited with the YDNPA HER on completion of the project.

Phase 4: Public Dissemination

- 1.24 The initial results of the EDAS summit survey work were summarised at an evening lecture given to the Ingleborough Archaeology Group in Ingleton in March 2011, together with contributions by David Johnson and Yvonne Luke.
- 1.25 However, a combination of the EDAS summit survey work, the survey work undertaken by the Ingleborough Archaeology Group, and ongoing work by other interested parties has produced a very substantial body of new information relating to the Ingleborough site and its environs. This information will be significant on a national as well as a regional basis, and may inform the interpretation and understanding of other hilltop enclosures. It is therefore considered important that joint publication is sought in a suitable journal with a national readership, so that the information is widely disseminated, thus hopefully provoking further informed discussion of the results. The previous RCHME 1988 survey was published in the *Proceedings of the Prehistoric Society* (Bowden, Mackay & Blood 1989), and this would be the most suitable place for a new joint article to appear, although other journals such as *Antiquity* or *The Archaeological Journal* might also be considered.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Introduction

- 2.1 It is not the purpose of this report to repeat all known descriptions of the Ingleborough summit pre-dating the present survey work, or to attempt to describe in detail the complex archaeological and historical development of the surrounding landscape of which it forms part. However, it is useful to give some general background information, and also to review previous surveys and evidence for the appearance of the summit, both in order to inform the current survey and to begin to place the results of this survey within their various wider contexts. Specific historic information which relates to the detailed 1:200 scale survey of the perimeter, or to the hospice tower, is given in Chapters 3 and 4 below.

Geology and Geomorphology

- 2.2 The following is a very brief summary of the very comprehensive geological background to the Ingleborough massif and the surrounding area given by Johnson (2008; 2012a), with supplementary material as noted.
- 2.3 At 723m in height, Ingleborough is not even the tallest of the Three Peaks, but its dramatic profile when viewed from almost any angle, and its relative isolation within the wider landscape, serve to exaggerate both its height and mass (see plate 1). It is especially dramatic when viewed from the north; the difference in height between the summit and adjacent valleys is 500m on both sides, but the horizontal distance on the north side is only 2km compared to 5km to the south.
- 2.4 The youngest and therefore highest Carboniferous rocks in the Ribblesdale area consist of Millstone Grit. The Lower Howgate Edge Grit forms the 18m thick capping to the summit of Ingleborough itself, and is coarse grained, containing large quartz fragments (Bowden, Mackay & Blood 1988). The main body of the mountain below the gritstone capping, but above the limestone plateau, is formed by the Wensleydale or Yoredale Group, comprising a repeated sequence or cyclothem of sedimentary rocks, generally horizontal with bands of limestone, mudstone and sandstone, the mudstone often being written up as a shale. Below the Yoredale Group are the limestones. At Ingleborough, the Yoredale succession passes through the Hardraw Scar Limestone above the Great Scar Limestone plateau, through the Simonstone, Middle and Five Yard Limestones to the Main Limestone (the highest and youngest of the limestones); the latter varies from 21m to 24m in thickness and forms the most prominent scars high on the Ingleborough massif. Glacial till deposits extend almost up to the 500m contour, and there is a broad if discontinuous sweep of such materials from Crina Bottom in the south-west part of the massif to The Allotment in the east (Johnson 2008, 48-51 & 54; Johnson 2012a, 9-11).
- 2.5 The landscape of the Ingleborough area is the result of repeated glaciations, with the most recent (Late Devensian) glacial ice receding c.14,000 years ago. The general direction of ice flow through the area was from north to south, with the whole of the Yorkshire Dales covered with ice; Ingleborough, Wharfedale and Cam Fell formed localised ice 'growth poles' (accumulations of snow and ice leading to the creation of glaciers). The surface of the ice sheet lay at a height greater than 800m AOD, but it is not known whether the summit of Ingleborough was ice-covered during the most recent glaciation - recent research implies that it was not, although the results are open to interpretation (Wilson *et al*/2013). Glacial erosion along the valley sides was responsible for creating the lines of scars that can be

seen in Ingleborough's limestone landscapes, but drumlins in the area are not generally found above 600m. For a time, as the glacial ice receded, Ingleborough would have formed a 'nunatak', an island of rock projecting above the ice (Mitchell 1994, 10 & 24). Periglacial activity also had a significant effect on the topography of Ingleborough - as periglacial ground surfaces were not subject to vegetation cover, they were prone to sudden slope failure, and there are huge presumed periglacial slips on the steep slopes of Ingleborough at Falls Foot and on Black Shiver (Johnson 2008, 33, 61-66 & 79-81; Johnson 2012a, 10-13). Although it is likely that vegetation would soon have become established on parts of the massif, it is unlikely that tree cover ever developed across the summit itself, as there would have been an insufficient depth of soil (Yvonne Luke, *pers. comm.*).

- 2.6 The plateau-like summit of Ingleborough has a sub-triangular plan, with maximum measurements of c.340m east-west by c.260m north-south, encompassing a total area of c.9.6 hectares (see figure 3). The highest point (723m AOD) is occupied by an Ordnance Survey triangulation pillar and a 1953 walkers' cruciform shelter, located towards the north-west of the centre of the summit. From here, the ground surface is relatively level moving west, but it slopes almost continuously downwards towards the north-east corner. It has been previously stated that there is only a slight rise from the rim to the highest point (Bowden, Mackay & Blood 1989, 267). While this is broadly true of, for example, the rise from the western edge to the highest point, the total rise from Swine Tail at the north-east corner (the survey station used by the EDAS survey here was set at 711.30m AOD) to the highest point is c.12m, which could have potentially influenced how structures on the summit were perceived or viewed both from close-up and from a distance (see Chapter 6 below).

Prehistoric Activity and Settlement

- 2.7 Late Palaeolithic bones and antler points from local caves were initially dated to between 11,750 to 10,810 BP (before the present), but these dates have recently been revised. Peat began forming in the Arks corrie on the north-west slope of Ingleborough from about 8500 BC, while palaeobotanical research undertaken by Sue Swales around Sunset Hole, further downslope, found evidence of an open landscape exhibiting some birch, juniper and hazel, joined by oak, elm and alder, giving a mixed forest environment by 5500 BC (King & Simpson 2011, 23).
- 2.8 There is possible evidence for temporary structures of a Mesolithic-Neolithic transitional date at Kingsdale, to the north-west of Ingleborough (Johnson 2008, 104). As seen elsewhere in Britain, calcareous rocks and their limier soils attracted the initial summer hunting communities and subsequently also early farmers (King & Simpson 2011, 24); by 4500 BC, there are indications of the burning of woodland by the local hunter-gatherer population, with evidence for the pasturing of animals and subsistence cereal growing appearing around 4000 BC (Luke 2012d, 42). In the Arks corrie at c.4000 BC there appears to have been a short period of woodland clearance, and there were no trees on Simon Fell by c.3700 BC, although there may have been a lower tree line here than elsewhere (King & Simpson 2011, 24). By c.2900 BC woodland cover continued to decline, while heather was growing on the fells; the upper, wetter slopes of the flanks of Ingleborough were largely treeless by the beginning of the Neolithic period (Luke 2012d, 43). On the east side of Ingleborough, there are indications of woodland clearance from c.4000 to 3700 BC, possibly due to grazing and browsing livestock, but there then appears to be a pause in human activity until about 2000 BC. The pattern implied by the palaeo-environmental and other evidence therefore appears to suggest that not all of the Ingleborough massif was experiencing clearance and

cultivation at the same time - the process was piecemeal, with periodic patches of re-colonisation of cleared areas, usually by hazel and ash, and this may reflect low local population numbers (King & Simpson 2011, 24).

- 2.9 However, there are several surviving features which may suggest a higher population, and one certainly organised enough to erect substantial monuments. For example, at Keld Bank, a Neolithic long cairn and associated structures have been recorded (Luke 2012c). This is of further interest in that the long axis of the cairn is aligned on the summit of Ingleborough, suggesting that the mountain played an important role in the religion and beliefs of local Neolithic people (Luke 2012c, 30-31). Elsewhere, probable Neolithic stone burial cairns, circles and wall footings can be seen on the northern flanks of Ingleborough around Harry Hallam's Moss. Douk Cave Pasture to the north also contains a concentration of burial cairns, and there is further evidence of Neolithic activity at Raven Scar Cave and Thaw Head Cave near Chapel-le-Dale, and on Scales Moor bounding Chapel-le-Dale (Johnson 2008, 104-6). Slightly further afield, in Kingsdale, the Apron Full of Stones round cairn is considered to be late Neolithic in date, with a secondary Bronze Age cremation burial (King & Simpson 2011, 24).
- 2.10 Moving into the Bronze Age (c.2499-500 BC), it is possible that some of the local co-axial field systems originate from this period, and evidence has been recorded for associated animal pens, folds and enclosures (Luke 2012d, 43-46). King and Simpson (2011, 26) suggest that the distribution of Bronze Age monuments such as cairnfields, flint artefacts and caves with Bronze Age deposits covers approximately the same area as the fewer Neolithic monuments, with both having a lower altitude limit of c.250m AOD. Probable Bronze Age cairnfields are located at Haws House Pasture, Giggleswick Scar, Scales Moor and Ellerbeck Pasture, with possible Bronze Age roundhouses distributed all around the Ingleborough massif (Johnson 2008, 107; King & Simpson 2011, 26). The Douk Cave Pasture cairnfield has been recorded in some detail, with differing forms of cairns noted, and the possible existence of a significant link between cairnfields and cave entrances is quite rightly highlighted (Bonsall & Howard 2012, 33-40).
- 2.11 King & Simpson (2011, 27) note that clear evidence for Iron Age activity (499 BC - AD 71) in the area is sparse, although Johnson (2008, 112-113) notes that the excavation of the Broadwood enclosure outside Ingleton yielded a great deal of material that crossed the Iron Age/Romano-British divide. Until relatively recently, the most prominent landscape element ascribed an Iron Age date was the Ingleborough summit enclosure itself. From the 18th to the mid 20th century, it was most commonly described as a 'hillfort' or 'camp', constructed either by the 'British' or latterly during the Iron Age. Writing in 1987, King (1987) suggested that the rampart or perimeter structure could be divorced from the circular features within, with the former constructed during the late Bronze Age/early Iron Age and the latter being Romano-British; doubts were also expressed as to whether the summit could ever have been occupied all year round. Shortly afterwards, Bowden, Mackay and Blood (1988) suggested that, although King had postulated an early date for the first use of the summit in a warm and dry period of the Bronze Age/Iron Age transition, a date very late in the Iron Age when the climate was becoming milder was equally possible. In 1989, the same authors speculated that a mid third century BC date obtained from another hilltop enclosure/hillfort might be relevant (Bowden, Mackay & Blood 1989, 270). In 2003 and 2006, Luke suggested that activity on the summit may have extended back much earlier than even the late Bronze Age (Luke 2003; Luke 2006, 18-24). The origins and evolution of the 'hillfort model' in British archaeology between c.1850 and 2000 were also discussed, and it was argued that the application of this theory to

Ingleborough had led to incorrect interpretations. The possibility was raised that the circular features on the summit may actually be ring cairns rather than hut circles, and that it should not even be assumed that these were necessarily the first structures to be built in the central area. Finally, the suggestion was made that, if a single phrase or type was to be applied to Ingleborough, then 'holy mountain' or 'sacred place' was more appropriate than hillfort (Luke 2003, 11-22, 50-53 & 57).

- 2.12 In 2008, Johnson again raised the issue that the circular features of the interior may not be contemporary with the perimeter structure, and that the summit may have been used over a very extended period for different functions (Johnson 2008, 112-113). Most recently, King and Simpson (2011, 27), on the suggested basis of constructional similarities between the Ingleborough summit perimeter wall and dated timber-laced ramparts, repeat King's 1987 suggestion that the wall was built "well back into the Iron Age", while Luke (2012c, 30-31) again raises the similarity between certain characteristics of the summit remains and Neolithic enclosures and henges.
- 2.13 Debate about the period over which the summit of Ingleborough was used and/or occupied has inevitably been accompanied by a discussion of *how* it was used. Emphasis has moved away from a permanently occupied hillfort, through a seasonally occupied enclosure or camp, to an enclosure with relevance to religious and ritual beliefs; "a non-occupational role connected with the expression of prestige or social ritual", in the words of Bowden, Mackay and Blood (1989, 270). Most recently, the summit remains have been described as "a high status site interacting with a supportive community which has yet to be found" (King & Simpson 2011, 27), and as a "prehistoric hilltop sanctuary" (Luke 2012c, 30-31).

Romano-British, Medieval and early Post-Medieval Periods

- 2.14 The evidence for Romano-British (AD 43 - 419) settlement and farming around Ingleborough is widespread, with associated small garden plots, stock pens and large fields. The landscapes are sometimes extensive and continuous, but none apparently lie higher than the 400m contour (King & Simpson 2011, 28-35). Earthworks recorded at High Howeth indicate a Romano-British native settlement (Howard 2012, 50-54). The well-known Roman road between Ingleton and Brough by Bainbridge passes to the north of Ingleborough through Chapel-le-Dale (Margary 1967, 383-384). As will be described in more detail below, some antiquarians speculated on the presence of a Roman signal station on the summit of Ingleborough. The only finds ever reported from the summit are a copper *as* of Antoninus Pius and a sherd of Castor Ware of the 3rd-4th century AD found by Hermann Ramm (King 1966, 4).
- 2.15 Although there has been limited excavation of early medieval (AD 420-1066) settlement in the area, some of the most interesting evidence for this period relates to place-names. Thirteenth century documentation refers to the *spechscaf* and *spechscaflade* in connection with the boundary of the Southerscales estate of Furness Abbey. This unusual place-name, interpreted in the 1960s as 'speech staff stream', must refer to a location somewhere between the summit of Ingleborough and Mere Gill Hole to the north-west. The stream is suggested to be Sweet Water, which runs for 250m below Black Shiver Moss, and the 'scaf' element of the name to probably derive from the Anglo-Saxon *sceaft*. There is also archaeological and place-name evidence from elsewhere in the country for early medieval speech posts, and the Ingleborough example is suggested to refer to an important communal open-air assembly, perhaps located in a large natural

grass-covered hollow set in limestone pavement between Harry Hallam's Moss and Mere Gill Platt. Although it is possible that this enclosure might form a much later stock enclosure (Al Oswald, English Heritage, *pers. comm.*), it is unlike other recorded local stock enclosures and it also has an interesting juxtaposition with possible prehistoric remains and the bulk of Ingleborough behind (Luke 2012b, 15-18).

- 2.16 It has also been proposed that the name of 'Ingleborough' itself relates to early medieval activity (Luke 2012b, 23-24). It is again an unusual place-name, the *ing* element formerly explained as relating to or meaning 'beacon'. However, early spellings include *ingel* and *ingli*, and an alternative derivation would be that the name is basically the same as Carn Ingli in Pembrokeshire, meaning 'rocky mountain of the angels', which took its name from a well documented legend of a local saint communing with angels on the hilltop to rid it of its pagan associations. It is suggested that a similar activity could have taken place at Ingleborough, with the summit visited by an early British saint, invoking the protection and power of prayer to chase away pagan associations that may have gathered around an important local prehistoric religious monument. There is other evidence that might support such a theory, such as the former St Anthony's well just below the western side of the summit (St Anthony was a popular saint in the early British church, associated in particular with angels and also with fighting devils in deserts and mountainous places) and the older names for major landslips (the Devil's Gulch, just to the north of the summit above the Arks, and the Devil's Pass, on the south-west flank). In essence, Ingleborough would be a newly invented British Christian name for the hill, which came into being during the 5th or 6th centuries AD. Johnson (2008, 115) additionally notes the theories that late 7th century documentary references to the *regione Dunutinga* ('people of the hill') have been proposed to refer to an early medieval clan grouping centred on Ingleborough, but states that there is little proof to support such an idea.
- 2.17 In the later medieval period, much of the area between Ingleton and Gearstones, and between Whernside and Ingleborough, was held by the Cistercian Furness Abbey, which managed its Dales estates from a centre at Newby near Clapham. A series of lesser lodges or farms were scattered across the area, with earlier farmsteads incorporated into abbey lands worked by tenants (Johnson 2008, 120; Johnson 2012b, 55). The estate of 'Southerscales' was granted to Furness Abbey by Alice de Staveley at some time before 1220. This estate covered what is now the north-eastern half of Ingleton township, stretching for over 11km from Ingleborough and Whernside up the ancient boundary with Dentdale and the medieval Forest of Wensleydale at *Mosedalebeck* head, now more commonly known as Newby Head. Over time, the Southerscales place-name has been reduced in scope, from initially referring to the entire estate to the medieval settlement (now deserted) to the north-west of Ingleborough, and finally to a later farmstead (Luke 2012b, 15 & 19). Physical evidence for medieval land management has also been recorded in the area; for example, the impressive walled enclosure known as Harry Hallam's Fold to the north of the mountain may be of medieval date, comprising a multi-purpose structure possibly associated with both sheep farming and horse management (Johnson 2012b, 57-60).
- 2.18 As has been recorded elsewhere within the Yorkshire Dales, the break-up of the great medieval monastic estates after the Dissolution would have had a significant effect on how the landscape was managed and organised. Although large areas of the Ingleborough massif, with the exception of the area around Clapham, escaped the process of Parliamentary enclosure, prior to this some formerly open common pastures had been converted to stinted commons, and stinted pasture

was created locally between the 16th century and the early 19th century (Johnson 2012b, 60). The massif has also been subject to much stone working, including for limestone dimension stone, millstones and walling stone; working for millstones is documented on the western slopes of Ingleborough in the late 16th century for example (Johnson 2012c, 70-81). There is also evidence for the limited working of lead and copper ores at the beginning of the 18th century and perhaps again in the early 19th century (Johnson 2012d, 82-85), while a turbary ground has been identified at Humphrey Bottom, situated at over 500m AOD on the northern flanks of Ingleborough (Luke 2012e, 65-69).

Later Post-Medieval and Modern Periods

The 18th Century

- 2.19 It is in the mid 18th century that the first known antiquarian descriptions of the summit appear. There is no mention of the perimeter structure, with the attention of the writers being focused on the central area of the summit. As would be expected for this period, there was an emphasis on the possible military aspects of the remains, which in at least one case were ascribed to the Roman occupation:

*"I thought it proper to premise thus much, because I hope to prove from the derivation of the word Bremetonacae, a remarkable piece of history belonging to that station. Dr. Gale is my authority; the learned doctor, in his notes upon Antoninus's Itinerary through Britain, gives us the derivation of the word Bremetonacae. The doctor observes, that this name is a compound of three British words, **Bre, maenig, tan**; mons, saxeus, ignis; that is, to express it in English, the rocky hill fire station; that is, the station at Overborough had a fire upon a hill. Now it is certain, the fortress at Overborough did not stand upon a rocky hill, so the fire could not be there. Dr. Gale helps us to find this rocky hill where the fire was, which belonged to this fortress at Overborough, by acquainting us, that the word Ingleborough signifies the same thing in the Saxon tongue, which the word Bremetonacae signifies in the British tongue. Hence we learn, that the garrison at Overborough erected a beacon, fire-house, or watch-tower, upon the rocky hill of Ingleborough, and appointed watches or centinels there. These centinels, by their signals of fire, were to give notice, and alarm the soldiers of the garrison of Bremetonacae, upon their discovering the approach of the enemy. It is certain, the use of beacons or watch-towers upon hills, to alarm the country round of the approach of an enemy, was an old custom, long before the Romans invaded Britain: for we read of Beacons in the Old Testament. And to confirm all, this beacon or fire-house of the Romans has to this day its ruins visible upon Ingleborough, which is a remarkable rocky hill. And the Roman watch-tower is situate on that side the summit of the hill, which looks towards Overborough; and that the garrison of Overborough might receive better information from the signals of fire upon Ingleborough, there was always a centinel upon duty in one of these two turrets of the northern part of the fortress of Overborough, for which use these two turrets were erected, as I shall shew afterwards. In confirmation of all this, the word Borough signifies a fortified mount; i.e. Ingleborough from its very name denotes a fortification; and so it was, when it has Roman soldiers fixed upon it, to stand as centinels appointed and detached from the garrison of Bremetonacae. It is certain, from repeated observations upon the art of war in use among the Romans in Britain, that every fortress had centinels appointed by the praefect or tribune of the garrison, and always upon the highest hill they could meet with; and if the fortress was situate in a flat country, the legions made a mount, and several of these made mounts are visible at this day. The Romans called these mounts montes exploratorii, or castra exploratoria; and, if I am not mistaken, the fortress of Bremetonacae might challenge all the fortresses in Britain, to shew such another mons exploratorius, as theirs of Ingleborough."* (Rauthmell 1746, 65-68).

- 2.20 Some 15 years later, in *The Gentleman's Magazine* for March 1761, in response to an earlier request by a correspondent for information on Ingleborough, a contributor named 'Pastor' offered the following as part of his description of the mountain and its surroundings:

“... and on the west side there is a very remarkable spring near the summit. The summit is very level but so dry and bare that it affords little grass, the rock being but barely covered with earth. It is said to be about a mile in circumference and several persons now living say, that they have seen races upon it. Upon that part of the top facing Lancaster and the Irish Sea, there are still to be seen the dimensions of an house, and the remains of what the country people call a beacon, viz. a place erected with stones, three or four yards high, ascended with stone stairs; which served in old time, as old people tell us, to alarm the country upon the approach of the enemy, a person being always kept there upon watch, in the time of war, who was to give notice in the night, by fire, to other watchmen placed upon other mountains within view, of which there are many The west and north sides are most steep and rocky ; there is one part to the south, where you may ascend on horseback; but whether the work of nature, or of man, I cannot say.” (Gentleman’s Magazine 1761a, 127).

- 2.21 The ‘place erected with stones, three or four yards high, ascended with stone stairs’, or ‘an old house’ may, in part, be represented by the stone wall recorded in the early 19th century, to the south of the later hospice tower and identified by the new EDAS survey (see Chapter 4 below). A month later, an un-named correspondent from Skipton repeated the information from Rauthmell’s 1746 book given above, and also provided a few additional details on one of the many caves in the area (Gentleman’s Magazine 1761b).
- 2.22 In 1781, the Reverend John Hutton, in his description of caves in the environs of Ingleborough, made the earliest known reference to the perimeter structure and also seems to be the first to record the annual horse races which were formally held around the top:
“The top is plain and horizontal, being almost a mile around, having the ruins of an old wall about it, from which some ingenious antiquaries endeavour to prove that it has once been a Roman station, and a place of great defence. Of late years it has never been frequented by any except shepherds ... and the neighbouring country people, who resorted to horse races, which were formerly held on its top. On the western edge there are the remains of what the country people call the beacon, some three or four yards high, ascended by a flight of steps. The ruin of a little watch-house is also adjoining. No doubt in time of wars, insurrections, and tumults, and particular during the incursions of the Scots, a fire was made on this beacon to give alarm to the country round about. The soil on top is so dry and barren that it affords little grass, the rock being barely covered with earth: A spongy moss is all the vegetable that thrives in this lofty region.” (Hutton 1781, 31; reference supplied by David Johnson).
- 2.23 The information from the *Gentleman’s Magazine* pieces was largely repeated by West in 1789, who also reproduced Hutton’s observation of the summit that “Of late years it has never been frequented by any except shepherds and the curious in prospects” (West 1789, 263-264).

The 19th Century

- 2.24 The emphasis on the supposed remains of the ‘beacon’ continued well into the 19th century. In 1806, a ‘Young Gentleman’ remarked of Ingleborough that near its top there was a well, some marks of a camp and a beacon (‘Young Gentleman’ 1806, 143); again, the mention of a camp, if only in passing, appears to be an early one. It was further remarked in 1812 that the beacon had been erected to warn the surrounding countryside of Scottish incursions; the same authors noted that sheep grazed on the highest parts, but that the summit had a very thin soil and ‘produces but little grass’ (Bigland 1812, 737).
- 2.25 Any beacon that was visible on the summit of Ingleborough in the very early 19th century would have been far more likely to have warned of a French, rather than a

Scottish, invasion. Ingleborough is one of the proposed beacon sites marked on a 1803 'Plan of the Beacons for the West Riding of the County of York' (Sanderson 2002). A marked line of sight drawn on the map connected it to a beacon at Long Preston to the south-east, while there was presumably also a line of sight to a beacon at Kirkby Lonsdale to the west; this was not marked on the map as it lay outside Yorkshire in what was then Westmorland. All of these beacons formed part of a national network which would have alerted the country to imminent invasion by Napoleonic forces. The 1803 plan also depicts what was presumably envisaged as standard premises and equipment - the 'Beacon House', to shelter the guards, and the Beacon itself. The 'Beacon House' was envisaged in the plan as a reasonably sized single-roomed dwelling, measuring 11 feet by 10 feet internally, with a fireplace built into one corner on the diagonal. There is no indication of the materials from which it was to be made, though what appear to be wooden posts mark the corners and flank the entranceway. Each of the four facades had a window or a door in it, the door being at a gable end. The beacon itself was a tall post with iron bars protruding all the way up on each side to form a ladder. Across the top was a structure designed to carry the highly inflammable beacon material soaked in tar. Interestingly, it was envisaged that the beacons would only be lit during the day, presumably to avoid potential false alarms and sabotage during the night (Luke & Richardson 2008).

- 2.26 A beacon site at Beamsley Beacon, West Yorkshire, marked on the 1803 map, was recorded in 2008 (Luke & Richardson 2010, 55-60). The guard hut lay adjacent to a probable 2nd millennium BC stone burial cairn, and survived as a low rectangular earthwork, measuring c.7.0m long by 4.5m wide, with a doorway in the east wall. A platform for the beacon post had been created by reworking one side of the cairn, and was scattered with burnt stones and pieces of coal. It is known from early 19th century descriptions made by surveyors that the beacon hut on Ingleborough lay on the south-west side of the summit, and was built over in the early 1830s by the hospice tower (see Chapter 4). The beacon itself lay to the immediate south, and the post for the tar barrel had been secured in a 'large pike' at one end of a wall, likely to be an older structure mentioned in later 18th century descriptions, and so pre-dating the Napoleonic Wars. Given that some kind of house or hut is also noted in the same descriptions, it is possible that this too was re-used to form the Napoleonic beacon hut.
- 2.27 Such recent military events may have been in Thomas Wilkinson's mind in 1824, when he remarked that "The last stage of the mountain bears in the distance the air of a fortification" (Wilkinson 1824, 118). Regarding the summit structures, his comments were rather limited:
"Beacons have been erected here, and even human habitations in remote times; and whether human industry and the stimulus of self-defence have not once lead the rampart-wall round the summit of Ingleborough, I will not take upon me to determine." (Wilkinson 1824, 122).
- 2.28 The Ordnance Survey 1st edition 6" to 1 mile map (Yorkshire sheet 96), which included the summit of Ingleborough, was surveyed in 1846-48 and published three years later in 1851 (see figure 4). Ingleborough is named as 'Ingleborough Hill' and a number of township boundaries are shown crossing the summit or meeting close to it. From the south, two straight parallel boundaries defining an elongated narrow part of Newby township run almost due north across 'Little Ingleborough' and then over the scar onto the summit. Here, the boundaries diverge but then converge again to cross the north-east end of the summit and continue north-east across 'Swine Tail'; changes in boundary alignments are marked by 'Pile of Stones' while straight sections are defined by 'Mounds', the latter presumably suggesting a vegetation-covered earthwork. Beyond Swine Tail,

the narrow strip of Newby township terminates at a junction with Clapham, Ingleton Fells and Ingleton and Moorgarth townships, where a 'Spring' is marked. Quite what the origin or purpose of this thin strip of Newby land represents is, at present, unknown, but it may be connected with allowing access to stinted pastures or the spring to the north-east of Swine Tail. The majority of the summit, to the west of the Newby strip, fell within Ingleton and Moorgarth township, while to the east, a narrow part along the south-eastern side formed part of Clapham township. With the exception of the features defining the township boundaries, very little else is shown on the summit, apart from an Ordnance Survey trigonometrical station (depicted as a triangle) to the north-west of centre; such features were often positioned on an existing cairn (or a new cairn was built for the purpose by the Ordnance Survey), and it has a benchmark marked at the south-east corner. A similar trigonometrical station, with no accompanying benchmark, is shown at the very north-west edge of the summit. No paths or trackways of any kind are shown ascending to the summit.

- 2.29 Writing shortly before the Ordnance Survey map was published, William Howson observed:

"No Roman remains, however, have been found, unless the curious circles on the level, apparently formed by the throwing up of the surrounding soil, be considered such. It has been suggested that they are indications of Druidical worship, in ludicrous contrast with which opinion, is another statement, that they are the result of horse races, which some fifty years ago were held on this lofty ground.

On the western edge of the summit are the remains of what has generally been considered to have been an ancient beacon, a wall eighteen feet long by four feet thick, with a flight of steps up one extremity. Adjoining this are also the scanty ruins of a watch tower; they were probably erected and in constant use during the times of the Scottish incursions. Some years ago a new tower was erected by subscription, but it soon gave way under the weight of its dome and the storms, and it is now a heap of ruins." (Howson 1850, 100).

- 2.30 Although useful in terms of the township boundary portrayal, the 1st edition Ordnance Survey map did not record any of the other summit structures. These were first mapped (and indeed this remained the only detailed survey of the summit until 1988) by James Farrer and published by John Phillips in 1853 (see figure 5). Although at a small scale, this survey, and the accompanying description, form an invaluable record of the appearance of the summit prior to the advent of modern erosion:

"Ingleborough, on all sides girt with a rocky edge, is most abrupt to the north and the west; drier on the summit than most of the Yorkshire fells; and exposed in a remarkable degree to violent 'north-westers'. How strange to find this commanding height encircled by a thick and strong wall, and within this wall the unmistakable foundations of ancient habitations! When resident many years since at Kirkby Lonsdale, it was for me an easy morning's walk to the summit of Ingleborough; and some traces have always been in my memory, of some kind of wall round it, mingled with incredible traditions of 'Roman camps on the top. But in 1851 the Rev. Robert Cooke, looking on this old wall, with a knowledge of similar structures in North Wales, came to a conclusion which appears to me sound, that Ingleborough was a great hill-fort of the Britons, defended by a wall constructed like others known in Wales, and furnished with houses like the 'Cyttiau' of Gwynedd. It is but a slight objection to this view that the enclosure contains no spring; the same defect is observed on the Herefordshire Beacon, and in many other cases; there is indeed a very small spring on the west side about fifty feet below the summit, and what seems like a covered way leading down to it.

The area enclosed by the walls of the Camp on Ingleborough is ascertained from Mr Farrer's Plans to be 15 acres 1 rood 37 perches. The figure is irregular, and parallel in a general sense to the outline of the precipitous gritstone brow of the hill, so that between the wall and this brow there are generally a few yards of clear ground. If we disregard the small irregularities, the figure may be described as quadrilateral; the face presented to the north-

north-east is something less than 400 yards long, that opposite to it about 250 yards; the face which looks to the south-east is about 270 yards, and that which fronts the west about 220. There are three openings through the wall; one at the south-west corner seems to be connected with a covered way down the steep brow; another in the middle of the east face admits the present, which was probably also an ancient track; a third, on the northern face, leads to a tremendous precipice. Each of the two last-named openings is 50 feet wide. The wall is remarkably low for about 30 yards at the north-east corner, and there the hill runs into a sort of natural bastion.

The wall is constructed after a regular plan, which seems to be substantially that of the large cairns which have been opened on the north-eastern moorlands, as for example, Obtrush Roque near Kirby Moorside. There is along the inner side a series of broad, thin gritstones set upright, edge to edge, so as to make a thin vertical face wall or limit. From these at right angles proceed outward many other such rows of broad stones, also set on edge, forming 'throughs' at intervals of 6 feet; the intervening spaces being filled in with a dry built wall. There is no outer face wall; but the openings already described are thus faced; there are no buttresses. The enclosed area is generally and remarkably bare and dry, and shows the millstone grit at the surface frequently. In this space are nineteen horse-shoe shaped low wall foundations, about 30 feet in diameter, each ring-like foundation having only one opening, which is always on the side looking towards the south-east. They are evidently the foundations of ancient huts (Cyttiau), probably designed to bear conical or dome-shaped roofs of heath or sod – "congestum caespite culmen" – with an opening turned away from the north-west, which is the quarter for violent wind and snow-storms. No traces of fire have yet been found in any of these areas. The place for a Beacon on Ingleborough is clearly the site of the present 'Man.' (see Pl.V.)" (Phillips 1853, 26-29).

- 2.31 The features shown on the plan are described in more detail in Chapters 3 and 5 below, but very generally the summit area was depicted as having a discontinuous wall running around the whole of the perimeter (see figure 5). The wall was broken in several places by gaps of varying size, and a plan and elevation of the wall was given either side of a 50 foot wide 'opening', almost certainly that towards the east end of the north side of the perimeter. A clear space of varying width was shown between the wall and the edge of the summit, with two circular features marked on or close to the edge to the west of the wall; the southern of these is named as 'St Anthony's Well'. These latter features have never been satisfactorily identified, although it is interesting to note that the late 18th century *The Gentleman's Magazine* article refers to a 'remarkable spring' near the summit, and in 1806 the 'Young Gentleman' also notes 'a well'. The only approach to the summit which is marked by Farrer is that from Clapham, which is indicated as a dashed line curving towards a gap or opening in the wall in the approximate centre of the east side. Farrer showed 19 horseshoe-shaped structures within the area enclosed by the wall, together with a small mound or cairn to the north-west of centre. In an account of a weekly evening lecture given by Phillips on March 11th 1853 to the Royal Institution it was noted that he had concluded with reference to 'a British Walled Camp, and the foundations of nineteen circular huts which had been discovered on the summit of Ingleborough' (RIGB 1853).
- 2.32 An anonymous piece in *The Spectator* for October 27th 1866 states of the summit of Ingleborough that:
- "The ground falls sharply away all round the edge, and an ancient wall, said to be that of a British encampment, crests its eastern brow, while on the plateau, the remains of British habitations - mere circles of stone, just showing above the earth, not unfrequently [sic] occur. A stately Ordnance cairn occupies the centre of the summit."* (Anon 1866).
- 2.33 Although brief, these sparse details do indeed suggest that the author/authors had actually seen the summit, rather than relying on earlier descriptions. The description appears to be the first to note that the perimeter structure is more

prominent on the east side of the summit, and that the circular structures were seemingly no more prominent in the 1860s than they are today. In 1887, for the occasion of the Golden Jubilee of Queen Victoria, there was a huge bonfire of over ten tons of combustibles on the summit, witnessed by 61 people. Rocket signals from Coniston Old Man were observed, as well as bonfires on other prominent hills and mountains in the district (Mitchell 1994, 14).

The 20th Century: 1900-1950

- 2.34 Speight, writing about Beamsley Beacon in West Yorkshire, in 1900, made passing reference to Ingleborough, describing it as a 'summer camp' (Speight 1900, 255), an apparently early published occurrence of the idea that the remains on the summit were not those of permanent habitation. Early walking guides, as might be expected, are largely concerned with routes up to, and down from, the summit, and rely on earlier sources for any information regarding the surviving structures. Riley's description, made in 1923, is typical:

"The gritstone summit is in the form of a tableland nearly a mile in circumference. Near the south-western edge are traces of former constructions considered to have been ramparts and watch towers in connection with the Roman camp at Overborough. A ruined wall, formerly measuring about 18 feet by 4 feet wide, with a flight of steps up one extremity, probably served as a beacon. Adjoining this are the scanty remains of a watch tower. Rauthmell in his Antiquities of Overborough mentions the "fire-house" and "watch-tower" upon Ingleborough built by the Roman garrison of Overborough, who appointed sentinels to give notice by signals of fire upon their discovering the approach of the enemy. About the year 1836 a new tower was erected by subscription but the structure now lies a heap of ruins. A portion of the summit, about 15 acres, was formerly encompassed in part by a strong gritstone wall in the form an irregular square. Within the enclosure stood 19 horse-shoe shaped huts, presumed to have been Celtic dwellings." (Riley 1923, 116-117). Riley also provides an illustration of the tower (see Chapter 4 and figure 21, left).

- 2.35 In the 20th century, what might be termed the first archaeological description since Phillips and Farrer was given by Elgee and Elgee in 1933:

"The hill forts were purely military, but on Ingleborough (2,350 feet) we have the remains of a fortified village unique in Yorkshire. On the flat grassy summit, about 15 acres in extent, there are numerous circular stone foundations of huts, usually with southerly entrances. Round the edge of the often vertical crags which crown the mountain-top the inhabitants of these huts created a massive stone rampart nearly 3,000 feet in length, and defining an irregular pear-shaped area. Myriads of millstone grit slabs have been piled up to form a high wall which has now collapsed. On the south-east upright slabs run along the inside, and on the north slabs laid horizontally with the occasional vertical bonding slabs reveal the original structure. Here and there very large blocks line the inside. There are openings in the wall in the north, south-west and east. That on the north is about 50 feet wide, and flanked with large slabs. This break corresponds with the extreme edge of a vertical crag. Much of this ancient stronghold has been destroyed in building the huge modern cairn which mars the dignity of this sublime site. Though late Romano-British potsherds have been found on the site (a footnote states that this information was supplied by Dr Raistrick), the village is certainly Brigantian, the last stronghold of some indomitable chief and his followers, who resolutely refused to surrender to the Romans." (Elgee & Elgee 1933, 119-120).

- 2.36 The tradition of summit bonfires continued into the 20th century, celebrating the coronation of George V in 1911 (fired on 9th September - Rawnsley 1911, 24) and the Silver Jubilee of his accession in 1935, the same year in which Ingleborough was first classified as a Scheduled Ancient Monument (Luke 2003, 19). Fires appeared on the summit again during the Coronation Year of George VI in 1937, when farmers with horses and sleds conveyed old tyres for the Ingleborough

bonfire. A Buick car was also used by Reg Hainsworth and friends to move tyres to the summit, but it became bogged down about 100 feet from the summit and did not reach its destination (Mitchell 1994, 73; Johnson 2008, 8).

2.37 The earliest known aerial photograph of the summit of Ingleborough was taken in 1938 (YDNPA HER WVC F2745) (see figure 6, top). This oblique black and white view, which looks directly south across The Arks and the summit, although valuable, is unfortunately taken from quite a low angle, and so little can be made out in the way of detail. There appears to be little or no erosion across the summit, and the southern third in particular appears well vegetated. Swine Tail is prominent to the left hand side of the photograph, as are the remains of the perimeter structures to the south and west. The ruin of the hospice tower can also be seen, as can the large cairn to its north-east.

2.38 The following year after the photograph was taken (i.e. in 1939), Arthur Raistrick provided a description of the summit:

“Ingleborough dominates all the central and western part of Craven, with its flat summit plateau at just over 2,350 feet above sea level. The summit is a nearly level platform, approximately triangular, 1,300 feet east to west on the north side, and 900 feet from north to the apex of the triangle on the south side. The whole circumference of this plateau is defended by a massive wall, many parts of which are faced and strengthened by large standing stones and massive lintels and throughs of flagstone. There are many traces of chambers within and adjoining the wall structure, but much damage has been done to the wall at various times in building from it the beacon and cairns. Within the wall the area contains many fine hut circles of stone – all, however, levelled with the ground, largely on the occasion of the building of the beacon and the tower during the Victorian period. There are traces of a graded ascent and approach on the eastern side, but this cannot with any certainty be linked with the early occupation of the summit. A better defined approach, with traces of flanking outworks and main entrance, is on the west side; but again this has been modified by long usage and by heavy carting of material for bonfires and beacons on many occasions of public rejoicings. It is much to be regretted that these occasions have nearly always been made opportunities to interfere ruthlessly with the structural remains on the summit. The most regrettable of all must be the clearing of the hut-circles to allow ‘freak’ horse-races on the summit.” (Raistrick 1939, 124-125)

2.39 Understandably, there was a hiatus in the publication of new material during the Second World War, and when general archaeological works appeared immediately after, Ingleborough received scant attention. Jacquetta and Christopher Hawkes (1949, 259) described Ingleborough as a “remarkable Iron-Age fortified settlement” but were saddened that “the elaborate stone-built walls are unhappily much damaged by modern cairns”. Walkers’ guides are generally similarly terse; Poucher (1948, 132) observed of the summit that “its flattish top carries four cairns, of which the highest and largest overlooks the extensive landscape to the south-west”.

2.40 The exception to these descriptions is the very useful account given by Ward in the *Sheffield Clarion Rambler Handbook* for 1946-47, based on a visit undertaken on 25th May 1945:

“A 1945 walk round the British Wall - 25, 6, '45: We begin at “The Beacon” cairn. From here, going about SSE., the wall base is 1-2 ft high, to where the public path to Crina Bottom Farm and Ingleton leaves the summit. Then, forward, we observe a little small rubble, odd base stones, and three of the “upright”, “face-wall” stones mentioned by Phillips.

Then, when the wall base bends to the SE we see it, for about 60 yards as half grassed-over, friable, disintegrated, shaley gritstone which (contrary to harder millstone grit) is responsible for much of the decayed, disappearing wall. This continues to (above) a little crag and several more “upright” stones. At the next bend (almost E.), and then NE., it

improves, parts are 3ft. high (a little heap), with odd base stones; and we see 7 "uprights" in a row. Then we have a dozen "uprights", short of today's 6ft beehive cairn built out of the wall and see the ancient cartway which, here, comes up – from Newby Cote House and its farm houses. Is this the place where stood one ancient watch tower – looking S. and SE.?

Beyond the gap made for Newby Cote cartway (going NE.) is a stretch of about 400 yards of the greater remains of the wall, spread out 12-20ft., and 3-5ft. high. The original height may have been 9-12ft. Then, turning more N., is a good 50 ft. of almost bare ground - stones cleared for Roughsedge's "Hospice Tower", or by the local farmers long years ago? A few yards beyond this second, but unnatural 'opening', are base stones and another 'opening' I query, of some 12 ft. There are further base stones (outside), two big "uprights" (inside), and, for about 80 yards - to the extreme northerly end - it is 4 ft. high, and apparent that stones up to about 5 cwts. each have been carried or moved forward by roller and fixed. A stone shelter hut here has been built out of the wall, and we could ask is the square bit of wall NW. of it original or not, or part of another ancient watch tower - looking NE. to NNE?

Beyond this shelter we see an "upright" of, possibly, 10 cwts, and, at the end of the wall (outside), the original wall base of 2-3ft. high. ("Swine Tail" is the narrowed E. end of the summit plateau which slopes towards Park, Green and Simon Fells - the latter's "Lord's Seat" summit being 2,079 ft).

Turning a little NW, for about 60 yards, material has been removed from this once vulnerable spot. Two little heaps tell the tale of what was left.

Turning more N.W. is a 6 ft to 6 ft. 6 ins cairn, on a heavy base of, possibly, original wall, and (outside) the original base stones are apparent. For a few yards the wall is 4ft 6 ins high. We query the next 'opening' and, asking "stones carted away" (?) we observe (inside) two "uprights."

Beyond the 'opening' is another length of wall, 4ft. high base stones, and (outside) an "upright". This approximately 80 yards is the best length of wall and base stones in the mile length of the British Wall which show the original wall and its base stones.

Onwards, for 100 yards, the wall is laminatory and friable grit-roofing slate stone. For another 150 yards it almost disappears, until we turn SW towards "The Beacon" cairn. Here, I observe, or suggest, a possible secret way between the gaps in the cliff - like that on the E. side of Carl Wark British fort (near Longshaw and Grindleford) I discovered in 1911.

From here, SSW., the traces of the wall, as far as "The Beacon" cairn, if smoother and intermittent, are seen for the last 120 yards to "The Beacon" cairn itself - with another gap one might query - removed stone (?) by the Roughsedge, or other destroyers of ancient monuments.

Alas that Ingleborough's British Wall was built chiefly of friable shaley-grit, for, if of hard, millstone grit, twice as much would remain for 20th century man to admire.

Late Romano-British potsherds - pieces of broken pottery - have been found on the plateau summit, and I hope they are recorded somewhere, and will go into (or are in) a local museum." (Ward 1947; reproduced from Luke 2003, Appendix 2).

- 2.41 At around the same time as these works were published, further aerial photographs of Ingleborough were taken, and these are generally of more use than the 1938 example described above. The first, dating from July 1945 (CUCAP G22), is a high level oblique black and white view, looking south-west across The Arks which displays the dramatic setting of the site (see figure 6, bottom); as in 1938, there appears to be little erosion on and leading off Swine Tail onto the summit. Four years later, in July 1949, a number of black and white oblique photographs (CUCAP EL070-088), some taken from the west and south-west, are probably the best aerial views of the summit ever obtained, easily bearing comparison with modern colour vertical views (see figure 7). They are of superb quality, and the detailed information they contain is related to the surviving remains in Chapters 3 and 5 below. In general, there appears to be very little erosion on the summit itself, although both the approaches from Ingleton and Clapham are well worn, particularly the latter. There is little erosion on or around Swine Tail, although on one photograph the footpath leading up onto Swine Tail is partly visible (CUCAP EL081). The south-eastern part of the perimeter structure has

narrow erosion trails running very close by and parallel to the internal and external sides, with cross trails across the perimeter between them. Sheep can be seen grazing on the summit, and two walkers had just breasted the summit from Clapham when one of the photographs was taken (CUCAP EL084) (see figure 7, top). The ruin of the hospice tower is clearly visible, as is the large cairn to the north-east.

Modern: 1950 to the Present Day

- 2.42 Prior to the development of the modern cairns, the largest structure to be erected on the summit (and indeed the one which has arguably had the greatest impact since late prehistory) is the walkers' cruciform windbreak or shelter. This was built in 1953, the Coronation Year of Elizabeth II; the idea was that of Reg Hainsworth of Ingleton, but construction was supervised by Andrew Brown. No stone for the windbreak was sourced from the summit itself, lest the prehistoric remains be damaged. Cement and sand were conveyed from Ingleton to Crina Bottom using vehicle and trailers. Volunteers each carried 56lbs of material up onto the summit using rucksacks, but Jim Sutcliffe, a farmer at Newby, actually managed to drive a tractor and trailer onto the summit via Cod Bank. On Coronation Day itself (2nd June 1953), the Revd. H J Croft dedicated the windbreak and Mrs Violet Farrer unveiled the view indicator on the top. There was also a celebratory bonfire, comprising a pyramidal heap of 250 used tyres and other combustibles (Mitchell 1994, 13-14). The summit shelter soon became a feature of tourist and walkers' guides to Yorkshire; as early as 1955, only two years after it had been completed, one author (Douglas Bolton 1955, 126) noted that:

"When I came here in 1954, I found that a rough shelter had been erected by intersecting two stout walls in the form of a cross, with a direction indicator in the middle."

- 2.43 At this date, there were apparently 'at least six recognised routes to the top of Ingleborough' (Douglas Bolton 1955, 125). The earliest detailed photograph of the summit shelter to have been uncovered during the research undertaken for this report dates from 1966 (original reference kindly supplied by David Johnson), in a second book by Poucher (1978, plates 204 and 206). The detailed view of the shelter is from the south, and shows the structure much as it is today, with a party of walkers posing for the camera (see figure 8, top). The vertical coping of the cross-walls has been re-pointed relatively recently, but the rest of the structure is of drystone construction; unfortunately, it is difficult to make out other details such as, for example, the extent of erosion around the shelter. Arguably more interesting is the second view, again looking north/north-west but more distant, and so showing not only the shelter but also the large summit cairn to the east (see figure 8, bottom). This cairn has a small modern cairn on the top, but the large shelter structures that are now present have yet to develop. In the distance, although it is difficult to tell just how far away, there appear to be two further cairns on the horizon. The general area of the summit that can be seen appears far less worn than it is today. Unfortunately, Poucher did not accompany the plates with any more detailed descriptions, merely repeating his previous comments from 1948.
- 2.44 Slightly more detail was provided by a still very summarised description given in a guide to the Yorkshire Dales National Park published in 1971 (Simmons 1971, 78), which refers to 'three gaps' in the perimeter; he also states 'there are slight traces of an inner trench', apparently the earliest note of this feature. The summit continued to be used for anniversary bonfires in the second half of the 20th century; in 1977 for example, Reg Hainsworth of Ingleton supervised the transportation of tyres for the Silver Jubilee bonfire, using tractors and trailers (Mitchell 1994, 56; Johnson 2008, 9). The most recent summit bonfire is believed

to be that commemorating the 50th anniversary of VE Day in 1995 (8th May) (Robert White, YDNPA, *pers. comm.*).

- 2.45 Although Ingleborough featured in passing in general archaeological books and surveys, it is remarkable that such a prominent and increasingly well-visited feature escaped modern archaeological study until the late 1980s. Two oblique black and white aerial photographs of the summit looking north and south, taken under light snow cover on 15th February 1985 (YDNPA HER ANY 220/03 & 220/04), add little to the 1940s views. More useful is an oblique colour aerial photograph, taken on the same day and looking west (YDNPA HER ANY 211/26) (see figure 9). The circular features in the interior of the summit stand out particularly well, and the erosion scars across the summit are also clearly visible. The erosion scar at the head of the Clapham approach is considerably wider than it appears in 1949, while the erosion scar from Swine Tail leading towards the walkers' shelter is already approaching its current dimensions.
- 2.46 As was noted in Chapter 1 above, King published a short article on the summit in 1987, together with a sketch plan showing an outer wall on the north-west face below the summit and a reconstruction of the perimeter wall, showing details of internal construction (King 1987) (see figure 10). In the following year (1988), the RCHME undertook the first measured survey work on the summit since Farrer's mid 19th century plan was produced. The central area of the Ingleborough massif was recorded at a scale of 1:2500 by ground checked aerial photographic transcription to identify archaeological features and areas of erosion (see figure 11). The summit itself was also surveyed at 1:500 scale using EDM, plane table and graphical methods (see figure 12); in addition, a 27m length of the perimeter structure was recorded at 1:100 to demonstrate details of its construction. These superb surveys and the results of the RCHME surveys were summarised in volume 55 of the *Proceedings of the Prehistoric Society* the following year (Bowden, Mackay & Blood 1989) (see figure 13). Two oblique colour aerial photographs were also taken in March 1988, of the summit under snow cover (YDNPA HER AJC 141/37), but these are too distant to provide any comparison with the RCHME 1:500 survey, although the ruined wall lines below the south-western edge stand out well. An oblique aerial photograph taken on 16th January 1991 under light snow cover by English Heritage (NMR 12061/32 SD7474/8), and subsequently used to produce a draft rectification image, shows the circular features on the summit well.
- 2.47 Following the RCHME survey in 1988, little further work was undertaken on the summit until the beginning of the 21st century. In 2000, two members of the Ingleborough Archaeology Group carried out a gradiometer survey of part of the summit (Luke 2003, 26). An MA thesis undertaken by Luke (2003) questioned previous interpretations of the summit remains as a hillfort, and her thoughts were summarised in an article published in the *Prehistoric Research Section Bulletin* of the Yorkshire Archaeological Society (Luke 2006). In 2008, Johnson (2008) published a detailed overview of the landscape history of the Ingleborough massif, together with adjacent valleys, including the most detailed consideration to date of the geological and geomorphological processes by which the local landscape was created. Most recently, King and Simpson (2011) have provided a review of the land use and settlement of the Ingleborough massif during the prehistoric and Romano-British periods, including the GPS mapping of settlements, cairns and field systems in the wider landscape, although the treatment of the summit is necessarily limited. Part of the area covered by King and Simson's GPS mapping has also been recorded in greater detail by the Ingleborough Archaeology Group (Luke 2012a).

3 THE PERIMETER SURVEY

Introduction

- 3.1 As has already been stated above in Chapter 1 above, it is not the purpose of this report to repeat all known descriptions of the Ingleborough summit pre-dating the present survey work. However, it is useful to reproduce previous surveys or descriptions that relate directly to that section of the perimeter subject to the detailed 1:200 scale topographic survey, particularly in regard to assessing what degree of damage has occurred to the perimeter in the recent past.
- 3.2 Given the level of detailed information gathered by the new EDAS survey work, and to allow clarity of description, the surveyed length of the perimeter has been broken down into four artificial divisions or sections; these sections are then subdivided into individually-described elements (e.g. **EDAS 1/2**) (see figure 14). The results of the survey work as a whole are discussed in Chapter 6 below. The surveyed length is also described in an anti-clockwise direction, as this follows a number of earlier descriptions, thus making comparisons easier. The circular or sub-circular features on the summit are numbered according to the previous RCHME system (e.g. RCHME '3'), while other groups of features they identified are given by letters (e.g. RCHME 'h') (Bowden, Mackay & Blood 1988) (see figures 12 and 13). For the purposes of description, the earthworks, walls, banks and scoops around the edge of parts of the summit are hereafter referred to as the 'perimeter structure or structures'; the term 'rampart' has been avoided because of disagreement about what the remains on the summit of Ingleborough actually comprise or represent, as the term infers a certain function or likely development.
- 3.3 Before commencing the description of the results of the perimeter survey, it is necessary to give a brief description of those elements within the summit which were *not* surveyed, in order to better place the former within their proper context. The EDAS survey recorded a total length of 350m of the perimeter along a corridor c.25m wide. This included the major part of the most prominent and complex perimeter structures, but the perimeter structures obviously continue beyond both ends of the survey area. Moving west from the west end of the EDAS survey area, west of Swine Tail, a short section of the perimeter is of the external bank and internal quarry scoops or ditch form, both of modest dimensions, sometimes with small orthostats facing the internal scarp of the bank or passing transversely through it. Beyond this section, there is a gap of c.50m where the perimeter appears to be completely absent, before a small sub-oval mound of material is reached. Beyond this, there is another gap of c.30m. It has been noted elsewhere (Luke 2009, 14) that this apparent complete absence of a perimeter structure here appears to coincide with one of the few parts of the summit which lacks a scree field on the slopes immediately beneath the summit.
- 3.4 After this absent portion, the perimeter structure resumes again around the north-west corner of the summit. It is suggested here to comprise a largely turf-covered bank with internal quarry scoops or a ditch, both very low (Luke 2009, 2-3). However, both occur at best intermittently, particularly the scoops/ditch, and in some places the perimeter structure appears again to be completely absent. The bank begins to become slightly more prominent to the north-west of the remains of the hospice tower, but it only assumes any significant proportions to the south of the Ingleton approach. Here, it is defined by its intermittent internal ditches and an external earth and stone bank, both with gaps, frequently synchronous (Luke 2009, 6). The differences in form of the perimeter structure around the summit are clearly illustrated by a number of profiles taken across it during the EDAS survey

work (see figures 19 and 23). Examination of the perimeter structures within the EDAS survey area has established that the overwhelming majority of the stone used in their construction is gritstone, with some sandstone flagstones present but in a very much lesser proportion (David Johnson, *pers. comm.*).

- 3.5 Turning to the interior, Farrer depicted 19 horseshoe-shaped features on the summit (see figure 5), and these were recorded and numbered by the RCHME in 1988 (Bowden, Mackay & Blood 1988) (see figure 12 and plate 2). The RCHME showed the features to be broadly sub-circular or semi-circular in plan; they added one more (RCHME '19') to Farrer's total, but thought that one of the examples previously recorded (RCHME '20') was not wholly convincing. A further possible similar feature (at NGR SD74197461) visible on aerial photographs taken in 1955 was no longer extant on the ground in 1988. The sub-circular/semi-circular features tended to cluster in discrete groups (see figure 12), and varied between 5.5m-8.0m in diameter; five had signs of an entrance or opening. Two of the features (RCHME '6' and '7') retained evidence, in the form of shallow trenches, for having been excavated, possibly by Farrer in the 19th century. In addition to the sub-circular/semi-circular features, the interior of the summit has a history of built structures and cairns stretching back at least 250 years, and this is discussed further in Chapter 4 below.
- 3.6 Finally, as previously stated, the following descriptive text also makes reference to the photographic record (see Appendix 1); photographs are referenced in italic type and square brackets, the numbers before the stroke representing the film number and the number after indicating the shot (e.g. [5/32]).

Section 1: South-west end of Survey Area to the Clapham and Newby Cote Approach

- 3.7 This section of the perimeter survey measures some 200m in length, and runs north-east from a gap situated just to the west of a circular feature (RCHME '2') as far as the much wider gap marking the Clapham approach. The majority of the perimeter structures and earthworks within this section are relatively well grassed, although the vegetation cover becomes thinner towards the northern end (see plate 3).

Previous Descriptions

- 3.8 In 1853, Farrer shows this section as comprising two distinct parts of wall (see figure 5). Beyond the south-west end of the survey area, there is a relatively short part with a narrow gap at either end. Beyond this, the wall runs east on a very slight south-east angle and then curves sharply around to the north-east to run as far as the wide gap at the Clapham approach. To both parts, the outer side is indicated by a thick line and the inner side by a broken line.
- 3.9 In 1947, Ward noted that:
"At the next bend (almost E.), and then NE., it improves, parts are 3ft. high (a little heap), with odd base stones; and we see 7 "uprights" in a row. Then we have a dozen "uprights", short of today's 6ft beehive cairn built out of the wall and see the ancient cartway which, here, comes up – from Newby Cote House and its farm houses. Is this the place where stood one ancient watch tower – looking S. and SE.?" (Ward 1947).
- 3.10 The 1988 RCHME 1:500 summit plan shows the 'short part' indicated by Farrer as being some 17.0m long and relatively straight in plan, comprising a mixture of bare and turf-covered stone bank up to 5.0m in width (see figure 12). The south-east end was not marked by orthostats, but defined one side of Farrer's break (RCHME

'h'), opening out onto a very steep south-west facing slope. Beyond the break, as it moved east, the perimeter had a number of individual sub-circular or sub-rectangular scoops to the rear, generally open to the south. To the east of a circular feature (RCHME '2'), these scoops become largely conjoined to form a series of curvilinear south-east facing scarps. Within approximately the same length, a limited number of transverse lines of stone set on edge (described as 'throughs') were recorded (see Section 2 for a fuller explanation) and also some orthostats facing to the rear. To the front, below the rampart, the RCHME noted that the tumbled material might indicate a former height of up to 3m. Furthermore, within the tumbled material, there were at least three vertical stone faces (RCHME 'c'). If these were the remnants of external wall faces, then they could indicate a width for the perimeter of as much as 7.5m, although it was acknowledged that they might equally be the result of the way in which fallen stone had come to rest. Further quarry scoops were also visible to the inner side of the perimeter, none more than 0.50m in depth.

- 3.11 After c.70m, the RCHME survey plan appears to indicate the perimeter turning inwards slightly towards a gap of c.5m. Beyond this gap, there are more quarry scoops to the inner side of the rampart, which appear to terminate at another gap in the perimeter, positioned almost opposite a semi-circular feature (RCHME '1'). The bare stone core of the perimeter then continues, narrowing markedly before widening again. To the front, below the perimeter, the RCHME noted slight ditches (RCHME 'e'), which were 'probably best seen as external quarry scoops'. To the rear face of the perimeter, Ward's seven 'uprights' (orthostats) were still present, although very few lines of throughs are shown. Further north, there is a line of another six orthostats to the rear face, beyond which the bare stone core of the perimeter splays out markedly. Shortly to the north of here, the perimeter appears to curve inwards slightly again towards a gap or break.
- 3.12 The north side of the gap was formed by a modern cairn (RCHME 'm'), defining the point at which the perimeter adopted a markedly more north-eastern orientation. Approximately half way along the length of this part, there was a modern sub-square structure to the rear and a modern wall to the front, although the latter perhaps incorporated an earlier structure. Beyond the sub-square structure, there was another angular south-east facing scarp to the rear and, at the north-east end, adjacent to the Clapham approach, a second modern cairn (RCHME 'm'). Adjacent to the cairn, there was a line of approximately six orthostats to the rear face, with transverse throughs at either end; together, these are presumably the dozen 'uprights' short of 'today's beehive cairn' described by Ward in 1947. This form of construction, combining rear orthostats and transverse throughs to form 'boxes' or compartments, is both more prevalent and better preserved to the north of the Clapham approach (see Section 2 below).
- 3.13 This section of the perimeter was described by Luke in 2003 as follows:
".... here is a much wider break (8m, no ditch) and another set of crags. From this point onwards rear orthostats begin to be more plentiful, including the seven in a row noted by Ward, which lie on the interior of the embankment between ring structures (1) and (2). From here onwards the character of the embankment begins to change as more and more stone debris, orthostats and, eventually, courses of stone are seen. Close to (1) a narrow 'gap' (1.0m, no ditch) lets through to a wide berm in front of what can now be termed a perimeter wall proper. A shallow ditch scoop runs along the exterior here. On the bend near structure (5) a 5m gap has a partial ditch behind and a modern cairn on the east side." (Luke 2003, 46).
- 3.14 More recently, Luke has divided the rampart into five broadly different sections (hereafter called 'zones' to avoid confusion with the EDAS sections), based on

their structural characteristics and form, although she rightly highlights that the actual divisions between these different zones are often not clear on the ground, one merging gradually into the other. This section forms part of Luke's zone 2, described as follows:

"This section is defined by its intermittent internal ditches and external earth and stone bank, both with gaps, frequently synchronous. Although it starts off in the west as a relatively modest structure and becomes larger and stonier towards the east, where it merges into the stone wall proper, it is treated as one section because its essential character is the same. An alternative division would be to separate the stonier eastern section before it reaches the point where the Clapham path ascends the summit. Intermittently along its length vertical orthostats are found lining the interior of the bank. The number can vary from a couple of adjacent stones to a dozen. Orthostats can also be seen crossing through the bank at right angles, though these are less numerous than the facing stones. Both of these characteristic structural details can be found writ large in the north-east corner. There are several gaps, occasionally close to prominent stone outcrops. One gap, framed by outward curving banks, lets out onto a grass covered slope and a break in the scree field beneath. The gap where the Clapham path breasts the summit is formally edged with orthostats and may also have been used as an access point in prehistoric as well as modern times. Another interesting but rather inexplicable feature is the presence of a short second bank and ditch just outside the main bank approximately halfway along the eastern edge. Internal features can be occasionally seen, lying adjacent to the bank" (Luke 2009, 6).

EDAS Survey Description (see figures 15 and 16)

- 3.15 The EDAS survey terminated 35m west of the RCHME's circular feature (RCHME '2'), just short of the gap marked by Farrer in 1853. Here, the perimeter bank has become rather spread, and is formed by a grassed stone rubble spread with a total width of just over 5m [2/487] (**EDAS 1/1**). The external scarp defining the bank is steep; at the base, there is a second, lower, scarp running parallel to it, set on the edge of the very steep natural slope to the south. Together, these two external scarps have an average height of 1.20m, rising to over 1.50m in places, although the precise bottom of the lower scarp is sometimes difficult to judge (see profile 5 on figure 19). The internal scarp defining the perimeter bank is lower, averaging 0.60m in height, and it partly defines two sub-oval quarry scoops here, set in the base of a larger angular scarp; the scoops are a maximum of 1.00m deep, but generally no more than 0.50m, while the larger angular scarp is up to 1.20m high. The internal scarp of the perimeter bank retains a few facing orthostats, with fragmentary evidence for transverse divisions, including *in situ* structural stones [2/485, 2/486], although these are not as clear as those further to the north (see Sections 2, 3 and 4 below). One of these stones may return to the west to form the fragmentary remains of a former external drystone wall. Just to the east of these transverse divisions, the perimeter bank is crossed by several shallow linear depressions on a shallow north-west/south-east alignment. They resemble the alternating transverse rubble-filled depressions and grassed bands seen more clearly to the north-east (see below). It may be significant that opposite these depressions the perimeter bank is markedly lower, as if it has been 'dragged through', suggesting that they could represent deliberate disturbance. Immediately east of the depressions, the bank is again more regular in form, with a width of 4.00m and one standing orthostat to the inner face [2/482, 2/483] (see plate 4).
- 3.16 Near the west end of the survey area, the main external scarp of bank 1/1 may be cut into or be disturbed by a broadly semi-circular feature; at the bottom of this feature, the lower scarp resembles a narrow flat-topped bank (**EDAS 1/2**). Together, the two earthworks may form an example of the features recorded further to the north-east and described by the RCHME as possible external quarry scoops (RCHME 'e') (see below).

- 3.17 Moving back to the perimeter, there is then an apparent gap or break of c.3m, where the bank appears to be either very much lower or even absent, after which a relatively straight section of bank commences, measuring 34m long and on a north-east/south-west alignment (**EDAS 1/3**). Here, the bank has an average width of between 4.50m-5.00m, and appears to contain a high proportion of smaller stone rubble (less than 0.10m across as opposed to the greater than 0.30m size of much of the rubble); this pattern continues for much of this section, although it is of course difficult to tell exactly what proportion of the bank's core is formed by the smaller material. The bank is also relatively flat-topped. To the inner face, the scarp of the bank stands up to 0.70m high and retains fragmentary traces of orthostatic facing [2/478], together with a number of probable fallen examples. A rather curvilinear south-facing scarp, standing up to 0.70m high and set between 3.50m-6.00m to the north of the inner face, probably represents further quarrying activity; this may once have been formed by more than one scoop, with a slightly deeper feature at the north-east end perhaps cutting that to the south-west. It is possible that within this area, the inner face of the bank, rather than being a feature resulting from excavated material being piled up, is actually one side of the quarrying activity itself.
- 3.18 The external scarp of the perimeter bank is much more substantial, and steeper, than the internal one, standing up to 2.30m high. The approximate upper half of the bank comprises grassed rubble, while the lower half is bare, perhaps denoting the boundary between structural material and fallen material, although the latter may have the remnants of slipped external 'facing' within it [2/479]. At the west end of this part, one of the RCHME proposed external quarry scoops (RCHME 'e') is visible as a steep south-facing scarp, 0.80m high, preserving fragments of a ruinous drystone wall within. There may also be a slight bank of compacted rubble beyond, on the edge of the steep natural slope, again reminiscent of features seen more clearly to the north-east. The steep south-facing scarp referred to above has a sub-triangular structure at its east end, 3.00m long, comprising a wall face standing up to 0.50m in height (**EDAS 1/4**) [6/771] (see plate 5). This wall is of drystone construction, thinly coursed, with over five courses surviving. At the angle, there is a much more substantial base stone [2/481]. Much of the wall is almost certainly modern, but it might re-use the lower part of an earlier structure. Just further to the north-east, another section of proposed quarry scoop (RCHME 'e') and external wall face (RCHME 'c') recorded by the RCHME may actually form a single feature. At least three large stones, resembling the inner facing orthostats but leaning backwards into the scarp, are visible at the east end. The largest is 0.77m long and up to 0.60m high. Although the stones give the impression that they may once have been upright, they are more likely to represent part of an external drystone facing wall, the upper courses of which have slid down into this position. The stones are set within a curvilinear feature defined by two low parallel scarps, perhaps the collapsed remains of drystone wall facing.
- 3.19 In the bottom of the area defined by the northern scarp of the perimeter bank, there are at least two small sub-square or sub-circular features defined by stones pushed into the turf (**EDAS 1/5**). These are probably relatively modern and may perhaps define former campfires; further to the north-east, a similar technique appears to have been used to spell out letters (see below). However, to their west, there is an angular spread of similar material that may have a more structural appearance. To the north of these features is the circular feature recorded by the RCHME (RCHME '2').

- 3.20 At the north-east end of this part of the perimeter bank, the gap or break indicated by the RCHME is reached. This gap is placed approximately opposite the point at which the outer area of level ground beyond the bank begins to increase to almost 11.00m in width. This gap may be as much as 4.50m wide, and preserves a number of curious features (**EDAS 1/6**). Foremost amongst these is a line of five thin orthostats and other stones of a smaller size which appear to define the former inner face of the bank [2/475, 2/476, 2/477] (see plate 6). These orthostats now stand proud of the ground surface, suggesting that the bank behind them (assuming that one was present) has either collapsed or that it has been deliberately destroyed. There are also several south-east facing scarps within the area of the gap; one defines an area c.2m square which has the appearance of being dug out, while others contain a high proportion of large rubble. Below them, closer to the edge of the natural slope, there is a modest spread of bare rubble, but apparently nothing substantial enough to represent the remains of the bank removed through either collapse or deliberate destruction. To the immediate north-east of the orthostats referred to above, there is a narrow linear depression that is almost certainly the result of modern erosion. However, to the north and west of this, shallow sub-oval depressions may represent quarry scoops.
- 3.21 Beyond the gap, the perimeter bank recommences as a spread feature (**EDAS 1/7**), containing a high proportion of smaller stone rubble but gradually becoming less well vegetated [2/473] (see plate 7). It is from this point that there is a demonstrable relationship between the quarry scoops and the internal subdivisions of the bank itself. There are three sub-rectangular or sub-oval quarry scoops [2/474] (the southernmost of which is placed across part of the gap (**EDAS 1/6**) describe above); although faint, the bottoms of these scoops become slightly lower from south-west to north-east and may cut one another in the same direction, possibly indicating a constructional sequence. The central quarry scoop measures 9.80m long by 4.20m wide, and a maximum of 1.00m deep, and in the adjacent part of the perimeter bank, the junction between this scoop and that to the north is marked by two lines of 'troughs' (transverse lines of stone set on edge running through the bank) defining an area of larger stone rubble. The northern quarry scoop measures 5.80m long, slightly less than the adjoining part of the bank, and is again a maximum of 1.00m deep. As before, the perimeter bank here has an average width of 5.00m, with a flat top with an average width of 2.30m; the inner scarp, at 0.60m in height, is lower and more gradual than the 1.50m high outer scarp. That part of the bank opposite the northern quarry scoop appears to contain more material than could be derived from the scoop itself. This might indicate that either the scoops relate to an earlier, smaller, bank which was subsequently augmented, or that a bank was first laid out roughly using material derived from the scoops and then augmented, for example by the addition of the inner facing orthostats, as part of the same phase of activity.
- 3.22 The quarry scoops appear to respect a narrow gap or break (also shown by the RCHME) at the north end of this part of the bank, but the re-appear again to the north, where there is once more a demonstrable relationship between the scoop and adjacent perimeter bank. Both scoop and bank (**EDAS 1/8**) are 9.40m long, with the bank having the same general dimensions and appearance as that already described for this section. There are seven upright orthostats of varying size to the inner face, and one fallen example [2/471, 2/472] (see plate 8). At the base of the steep external scarp, there is another of the features described by the RCHME as a possible external quarry scoop (RCHME 'e'). However, its form does not resemble a quarry, but rather half of a sub-oval feature, 6.40m long, enclosed or defined by a low, flat-topped 0.40m high bank containing a high proportion of stone.

- 3.23 Beyond (north of) this feature, the steep external scarp of the perimeter bank continues, becoming less steep than to the south, but maintaining an average height of between 1.20m-1.50m. However, the bank itself becomes less apparent and discontinuous. For example, there is a sub-square part, 3.00m across and containing a high proportion of smaller stone rubble (**EDAS 1/9**), and then a gap or break of 3.80m where the main body of the bank is hardly present at all. When it does resume, for the next c.12m its form is quite different from any other part of the perimeter that was recorded (except perhaps the smaller example described above), comprising alternating transverse bands of bare rubble and grassed rubble [2/470, 5/598] (**EDAS 1/10**). These bands run the full width of the external scarp, and at their base, there is a low east-facing scarp containing a high proportion of stone, possibly another example of the 'external quarry scoop' features described above (RCHME 'e'). Two of the grassed bands converge at a similar angle to apparently define a narrow funnel-like opening or gap through the perimeter. The southern of these two bands may preserve the remnants of built rubble edges. Directly to the west of here, stones have been pushed into the turf to spell out the letters 'I H Y', possibly once the question 'W H Y?'.
- 3.24 After the apparent funnel-like gap, the bank resumes a form more similar to that seen surviving further to the south-west. It is 5.00m wide, although the internal and external scarps are much closer to one another in size (**EDAS 1/11**). There is a concentration of internal-facing orthostats and structural stones at the south-west 'corner' of the bank [2/467, 2/468, 2/469] (see plate 9), together with further *in situ* structural stones to the north-east. One of the orthostats stands 0.60m high and has very distinct grooves caused by natural weathering to the north face [6/766, 6/767]. The bank itself still contains a reasonable proportion of smaller stone rubble, but begins to display evidence for transverse bands of larger stone rubble [2/465, 2/466]. These are not like the through courses visible further north within Sections 2 and 4, where upright structural stones can be seen (see below), but rather linear concentrations of larger angular rubble.
- 3.25 After a distance of 9.00m, the perimeter bank changes angle onto a more north-south alignment, and also begins to narrow (**EDAS 1/12**). At this point, there is a small internal quarry scoop, which correlates to a section of perimeter bank 4.00m long and 3.00m wide, the southern half of which is formed by smaller stone rubble. As the bank continues north, it narrows briefly to as little as 2.00m wide, but then widens markedly to form two conjoined sub-square mounds, both 4.00m-5.00m across. The southern mound contains a high proportion of smaller stone rubble, whereas the northern mound consist of larger rubble [6/768]. These two mounds are separated by a partly surviving line of upright 'throughs' [2/464] (see plate 10), and there are two large internal facing orthostats to the north-west side of the internal face of the northern mound [2/463]. A narrow linear depression curves around the west sides of both mounds, almost certainly the result of erosion rather than representing an internal quarry scoop, and there appear to be further *in situ* structural stones to the east, associated with low scarps and perhaps one sub-rectangular depression. The perimeter bank then continues as a much narrower feature to the north of the northern mound for 3.00m, gently curving to the north-east, before stopping, its end defined by one *in situ* and one *ex situ* orthostat.
- 3.26 It is at this point that the RCHME marked a clear gap, and the perimeter bank then angles markedly to the north-east. There is no clear evidence of the bank crossing this gap, although there might be a very faint earlier mound beneath a substantial modern cairn here (**EDAS 1/13**; RCHME 'm') [2/462] (see plate 11), and perhaps a single large *in situ* structural stone. However, to the south of the cairn, the line of the external scarp of the perimeter bank may be continued by a 0.80m high south-

east facing scarp, but this is not certain. The gap, if indeed it is such, is c.8.00m wide.

- 3.27 On the north-east side of the possible gap, the perimeter bank resumes as a spread feature, 3.80m wide, but barely visible to the internal side; from this point north, within that part of the perimeter covered by the current survey, the bank is largely bare, with little vegetation. The external scarp is better defined and becomes more prominent as it runs north-east, reaching over 1.50m high and comprising bare angular stone rubble with the remains of collapsed wall faces within as well as some larger structural stones [2/461]. The bank preserves only fragmentary evidence for transverse divisions at its south-west end, but these become more marked as it moves north-east.
- 3.28 At this point, both sides of the perimeter bank are flanked by modern structures, as well as the aforementioned modern cairn to the south-west. On the inside, there may be traces of a sub-circular cairn pre-dating the existing one, while a U-shaped structure abutting the perimeter bank and shown by the RCHME now survives in plan only (**EDAS 1/14**). At the bottom of the external bank, there is a L-shaped structure measuring a maximum of 5.00m long by 2.40m wide [2/460; 6/769, 6/770] (**EDAS 1/15**) (see plate 12). This structure may in part be modern, but this is not absolutely certain. The long wall stands up to 1.00m in height, and incorporates a large upright triangular stone resembling an orthostat, but possibly a geological feature (David Johnson, *pers. comm.*). The north end of the long wall merges with the general slope of rubble marking the external scarp of the perimeter bank, while to the inner face, a sub-rectangular area appears to have been dug out, creating an enclosing spread bank. Taken together, this might suggest that the standing walls form the rear part of a small rectangular structure or shelter that was once located here.
- 3.29 Beyond these structures, the perimeter bank begins to exhibit more evidence for transverse divisions, both of structural stones and also bands of larger rubble between areas of smaller rubble. Approximately two-thirds of the way along this part of the perimeter, there is a large sub-oval internal quarry scoop, opposite a narrow break or gap in the bank (see profile 4 on figure 19). To the north-east of this gap, there is a low but well-defined section of perimeter bank, edged by substantial *in situ* structural stones (**EDAS 1/16**). These stones define an area measuring 5.00m long by at least 2.50m wide [2/453; 5/596, 5/597] (see plate 13), with a smaller, 2.00m long, extension to the south-west end, also partly defined by structural through stones [2/455].
- 3.30 Immediately to the north, a substantial modern cairn has been built on the inside of the bank where the erosion scar of the Clapham approach breasts the edge of the summit [2/452; 6/749] (**EDAS 1/17**) (see plate 14). Another, smaller, modern cairn exists just below the edge of the summit, at the point where the erosion scar becomes a steep sided gully [2/451; 6/747] (**EDAS 1/18**) (see plate 49). These two cairns are described further in Chapter 5 below.

Section 2: Clapham and Newby Cote approach to the Swine Tail gap

- 3.31 This section of the survey area measures c.86m in length, and occupies the northern part of the east side of the perimeter, running from the existing Clapham approach and north as far as the Swine Tail gap. Plate 15 shows a typical length of the bank (EDAS 2/3).

Previous Descriptions

- 3.32 In 1853, Farrer shows this section as comprising two distinct lengths of wall, both of approximately equal length and separated by a narrow gap; to both parts, the outer side is indicated by a thick line and the inner side by a broken line (see figure 5). The north-east end of the north part appears to be continuous with the wall crossing the Swine Tail gap, whereas at the south-west end of the south part there is a wide gap where the trackway from Clapham approaches the summit, which Farrer indicates by parallel dashed lines.
- 3.33 In 1947, Ward noted the following:
"Beyond the gap made for Newby Cote cartway (going NE.) is a stretch of about 400 yards of the greater remains of the wall, spread out 12-20ft., and 3-5ft. high. The original height may have been 9-12ft. Then, turning more N., is a good 50 ft. of almost bare ground – stones cleared for Roughsedge's "Hospice Tower", or by the local farmers long years ago? A few yards beyond this second, but unnatural 'opening', are base stones and another 'opening' I query, of some 12 ft. There are further base stones (outside), two big "uprights" (inside), and, for about 80 yards – to the extreme northerly end – it is 4 ft. high, and apparent that stones up to about 5 cwts. each have been carried or moved forward by roller and fixed. A stone shelter hut here has been built out of the wall, and we could ask is the square bit of wall NW. of it original or not, or part of another ancient watch tower – looking NE. to NNE? Beyond this shelter we see an "upright" of, possibly, 10 cwts, and, at the end of the wall (outside), the original wall base of 2-3ft. high." (Ward 1947).
- 3.34 The 1988 RCHME 1:500 summit plan shows this section as being the most structurally complex surviving part of the rampart (see figure 12), so much so that a detailed plan at a scale of 1:100 was also produced to illustrate the distinct form of construction employed (see figure 13, bottom). The drystone wall outer face of the rampart was penetrated by a number of 'throughs', transverse lines of stone set on edge running from the wall to the facing of orthostatic blocks to the inner face which, in contrast, they did not penetrate; together, these 'throughs' combined to form what might be best described as 'boxes' or compartments. In addition to the transverse divisions, the RCHME noted that, within their 1:100 scale survey area, "subsidiary structural stones behind the outer face show at a higher level, suggesting that the rampart was compartmentalised longitudinally as well as transversely". The boxes or compartments were difficult to discern within that part of the bare stone bank running north from the band of erosion marking the Clapham approach as far as a narrow gap, and in addition this part was shown with only a single line of 'throughs'. Beyond the narrow gap, the boxes or compartments were defined transversely by lines of 'throughs' sometimes set as little as 2.00m apart, while there was a U-shaped depression to the west of the rampart. There was then another gap, and to the north, c.4m square boxes were visible, with shallow U-shaped scrapes or depressions immediately to the west.
- 3.35 To the north of these boxes, the RCHME recorded a length of c.10m without transverse throughs, but with evidence for a different form of internal transverse division, this time between narrow bands of angular rubble dividing broader bands of gravel. A modern sub-square shelter was present to the west of here. Another gap, edged with orthostats, had two conjoined boxes, both c.3.50m to 3.70m square, to the north side, with another 2.50m wide gap at their north end. Beyond this gap, a similar form of construction resumed, until a large L-shaped modern shelter was met. To the north of the shelter, the rampart was shown as comprising a bare stone bank running to Swine Tail Gap, and with surviving external drystone walls.

3.36 This division was described by Luke in 2003 as follows:
“Where the modern path from Clapham crests the summit, a wide gap of about 20m is flanked by a modern cairn made of stone, obviously robbed from the adjacent wall. The line of orthostats flanking this entrance suggests this gap too could be original. A little further is what Ward regarded as the old Clapham cartway entrance coming through another (? planned) gap. The next section of wall, which includes the part surveyed at 1:100 by RCHME, appears to include three built ‘gaps’ the last one, closest to Swine Tail, is rather odd, and includes a collection of quite substantial orthostats as well as a bank in the ‘wrong’ place i.e. not aligned with the wall proper. Twenty metres further on are two of the largest orthostats associated with the wall. The biggest orthostats and stones on the site can all be found in this north-eastern corner by Swine Tail, some obviously placed there by human hand, others more enigmatically grouped.” (Luke 2003, 46-47).

3.37 As has already been noted, more recently, Luke (2009) has divided the rampart into five broadly different zones, based on their structural characteristics and form. The southern half of this section forms part of a ‘cross-over’ with Luke’s zone 2, which has already been described above. The northern half forms part of Luke’s zone 3, described as follows:

“Apart from a cross-over section just north of the Clapham path, this part of the enclosure does not appear to have an associated ditch. Nor is an earthen/earth and stone embankment definitely visible, though it is possible there is one underneath the carapace of stone. Parts of the interior and exterior of the stone wall not obscured by tumble or destroyed contain coursed stone. Orthostats set on edge are a feature of the internal face of the wall. It is here that the largest of the orthostats on the summit are found. Orthostats are also found facing the ends of sections of wall as well as crossing through it, in effect ‘compartmentalising’ the wall. This area has been particularly susceptible to movement and modification of the structure in modern (and presumably earlier) times. Faint vegetation marks may mark the presence of a hitherto unnoticed internal enclosure in the north-east corner. It can be picked up on at least 2 different photographic sources. If the vegetation marks are related to a sub-surface feature, it appears to be a sub-rectangular enclosure c.95m x c.45m with the eastern edge possibly buried beneath the stone wall.” (Luke 2009, 9).

EDAS Survey Description (see figure 16)

3.38 At the time of the EDAS survey, the erosion scar where the Clapham approach breasts the summit edge was over 10m wide. Within the scar, there is a very spread south-east facing scarp on the approximate line of the where the external scarp of the perimeter bank *might* have run, but this could equally be a geological feature, perhaps a slight step forming the edge of the gritstone cap. However, within the erosion scar, there is a strip of bare ground of approximately the same width as the bank formed by hard-packed pieces of gritstone set on edge. Although in some ways this resembles the pattern created by frost heave seen elsewhere on the summit, the pieces are almost certainly too large and may well have been deliberately laid (David Johnson, *pers. comm.*). If this is the case, then it suggests that either they form the base for some structure that has been removed or that a hard surface was created to prevent erosion, perhaps at an entry point onto the summit.

3.39 Immediately to the north-east of the erosion scar, there is a sub-square spread of partly grassed stone rubble, 0.90m high and defined on the eastern and southern sides by small *in situ* structural stones (**EDAS 2/1**) [2/450]. There is then a gap of 2.00m, followed by a low but well-defined section of bank (**EDAS 2/2**), edged by substantial *in situ* structural stones similar to those visible to the immediate south-west of the Clapham approach erosion scar. However, their form is slightly different, in that they define two structural lines to the external side of the perimeter bank [2/449]. Comparison with better preserved sections of the perimeter further

to the north (see below), suggests that the outer lower line of larger stones once formed a line of base stones, projecting c.1m from the former external drystone wall face, which is represented by the inner stones [2/448; 5/587, 5/588, 5/589, 5/590] (see plate 16). This section of bank (excluding the base stones) measures 6.80m long by 2.00m wide; a low spread mound around it probably represents part of the remains of the collapsed upper portion. The average width between the external scarp of the bank and the edge of the summit is between 6.00m-7.00m for the majority of this section, although this widens slightly towards the Swine Tail gap.

- 3.40 Beyond this part of the bank, there is another break of c.4.00m, and then the perimeter bank resumes again for another c.15m (**EDAS 2/3**). Here, it is 4.00m wide and initially very low (less than 0.30m) but it rises to 0.80m high, retaining facing orthostats to the internal scarp [2/444, 2/445, 2/446, 2/447] (see plate 15) and the remains of a 0.40m high drystone wall to the external scarp, which itself stands 1.20m high. There is some evidence for transverse divisions both in the form of structural stones and spreads of smaller stone rubble. Small sub-oval quarry scoops recommence adjacent to the internal face of the bank, and again there is a demonstrable relationship between these and the bank. Slightly further to the west, just beyond the edge of the quarry scoops, there are patterns on the ground surface suggestive of conjoined sub-rectangular structures [2/489]. Some of the sub-rectangular features here, both in terms of composition and height, are little different to the most denuded of the circular features recorded by the RCHME, but they are perhaps more likely to be an example of 'patterned ground', a geological feature created through natural weathering but which can appear deceptively artificial (David Johnson, *pers. comm.*). Approximately opposite these features, there is a 1.50m wide gap or break in the perimeter bank.
- 3.41 The next length of the perimeter bank is sub-rectangular in plan (**EDAS 2/4**), measuring 4.50m long by a maximum of 4.20m wide, and this marks the start of the 27m long section surveyed by both the RCHME and EDAS at 1:100 scale (see figure 24) (see also Chapter 5 below). There is a single standing orthostat at the south-west corner of the inner face, as well as other structural stones marking the north-east and south-east 'corners' and part of the east side. The bank itself comprises bare stone rubble, and stands up to 0.60m high on the east side; a concentration of smaller rubble is visible in the centre of the bank. At the north end of this length, a further gap of 1.50m occurs, close to which is the northernmost of the internal quarry scoops to survive within this part of the perimeter. To the north-west of the scoop, stone rubble has been pushed into the turf to spell out the letters 'D r' [6/746]; there is also a line of stones to the south.
- 3.42 North of the 1.50m wide gap, the next length of bank measures 12.50m long, by an average of 4.00m wide (**EDAS 2/5**). The very southern end is only c.2.00m wide, but this appears to be a structural feature rather than the result of collapse or decay, as the side towards the gap is faced with an orthostat, marking the change between more concentrated rubble and the scatter within the gap. Beyond a transverse division, marked by several upright structural stones, the bank increases to 4.00m wide [2/442]. There are further transverse divisions, comprising hard packed rubble flanking a band of smaller stone rubble. The internal scarp of the bank stands up to 0.60m in height, and has the remnants of a modern U-shaped structure built against it, shown as extant by the RCHME (see figure 13, bottom) but now visible in plan only (see Chapter 5 below) (**EDAS 2/6**). The removal of this structure has exposed two of three very large facing orthostats here, the three largest adjacent surviving examples in the whole of the surveyed perimeter [1/410; 2/439, 2/440] (see plate 17) (see profile 3 on figure 19). The

largest orthostat measures c.1.45m long, 1.05m high and 0.24m wide. The external scarp of the perimeter bank stands up to a maximum height of 1.10m, and contains the remnants of drystone wall facing surviving to a maximum height of 0.65m. At the north-east 'corner' of this length, the drystone wall facing returns to the west, defining one side of a purposely-built gap [2/441] (see plate 18). The gap is slightly under 2.00m wide to the interior of the perimeter but it splays outwards slightly to the exterior; it is in approximately the same position as the break or gap shown by Farrer in 1853 (see figure 5).

- 3.43 Beyond this gap, the bank has another sub-rectangular section, 7.80m long and 4.00m wide at the south end (**EDAS 2/7**). There are a number of fallen orthostats to the internal scarp, together with two standing examples set at an approximate right-angle to one another, with the bare stone rubble bank behind standing up to 0.60m high [1/409; 2/437, 2/438] (see plate 19); to the north of these, the perimeter bank increases slightly in width. The east and south sides of the bank are formed by drystone wall facing, standing up to 0.30m high; that to the east returns to the west at its north end. A transverse band of smaller stone rubble crosses the northern end of this length of the bank.
- 3.44 The west return at the north end of the external drystone wall described above appears to define another break in the perimeter bank. To the north of this, the next length of the perimeter bank is rather curious (**EDAS 2/8**). There are possibly three lines of parallel orthostats or structural stones, with a scatter of fallen orthostats around them [1/408; 2/434, 2/435] (see plate 20); comparison with a slide taken in September 1994 shows that both the *in situ* and *ex situ* structural stones here have changed little in the past 17 years (YDNPA slide IH25). The stones are located within a low (less than 0.40m high) partly grassed rubble spread, which may represent the remains of the perimeter bank; again, comparison with the same image referred to above suggests that vegetation across the bank has increased, not decreased, since 1994. However, if the orthostats represent former lines of 'throughs', then the majority of the bank must have been removed at some point. There is a sub-oval mound of stone rubble to the immediate west, and then another small length just over 1.00m long formed by a scatter of bare stone rubble with no recognisable bank.
- 3.45 The next section of the perimeter is defined on all four sides by drystone wall facing [1/407] (see plate 21) (**EDAS 2/9**). It measures 3.40m wide by 1.80m long, and once had a modern shelter built against the external (east) face [2/433] (see plate 50); the shelter was pushed over at some time during the course of the EDAS survey work, between November 2010 and March 2011, resulting in a spread of rubble. The drystone wall facing stands highest on the east (external) side, where it is 0.90m high, and is least well preserved to the north [2/432] and south faces, where it is only between 0.25m to 0.35m high; the west (internal) side is 0.63m high. The space within the faced drystone walls contains a high proportion of smaller stone rubble. Although it is possible that some of these drystone walls result from modern shelter building activity (an image taken in September 1994 appears to show some modern drystone walls on top of the bank here - YDNPA slide IH28), clearly not all of them do. This is therefore an unusual example of a part of the perimeter bank which has drystone facing not only to the inner scarp, rather than orthostats, but also defining a transverse division.
- 3.46 On the north side of this feature, there is a lower area, also partly defined by drystone wall facing, but standing only to 0.50m high, and flanked by *ex situ* orthostats or structural stones to the east and west [2/431]. Another 2.70m-3.00m of low spread bare stone rubble follows, with a sub-oval mound of stone rubble to

the west. It is noticeable that both this mound, and the similar feature to the south, are positioned opposite sections where the bank is either very low or appears to have been partly removed; might they be the remnants of material resulting from deliberate destruction or dismantling? The bare rubble body of the perimeter bank then increases up to 0.60m in height. It forms another 'framed' part of the perimeter, measuring 2.00m long by 4.00m wide (**EDAS 2/10**), although at least some of the apparent transverse divisions here probably relate to substantial modern shelter structures that survived as late as May 1998 (YDNPA slide IH68). It is contained by a 0.50m high drystone wall facing to the exterior, with a course of 'throughs' along the north side. One of these 'throughs' pierces the drystone facing as shown by Farrer in 1853, and is one of only three surviving identifiable examples (see Section 4 for more details) [2/429] (see plate 22).

- 3.47 Immediately beyond this 'Farrer through', the perimeter bank again appears somewhat truncated, and again there is an associated sub-oval mound of stone rubble, although in contrast to those noted above, this lies to the exterior. This mound is sub-circular in plan, measuring a maximum of 3.00m in diameter and standing up to 1.00m in height, comprising small angular gritstone rubble. Beyond this, the perimeter bank assumes a form similar to that recorded to the south, although its plan form is slightly more sinuous (**EDAS 2/11**). It comprises a bank of bare stone rubble, c.3.00m wide at the south end but spreading to over 4.00m as it runs north [2/425] (see plate 23). The internal scarp has two large standing facing orthostats at the south end [1/405; 2/430], with a single fallen example some 3.0m further to the north. The internal scarp stands up to 0.60m high and there are traces of sub-oval depressions to the west; these could be the remnants of very faint quarry scoops but might equally have been caused by visitor erosion. The perimeter bank itself may preserve evidence for longitudinal division, as seen more clearly within Section 4 (see below). On average, the upper part of the bank is c.2.50m-3.00m wide, with an eastern side defined by a 0.40m high scarp. Beyond this, there is an approximately level area c.1.00m wide, before the top of the drystone wall facing to the external scarp is reached. This stands up to 1.00m high, and incorporates several large flat slabs [2/426, 2/427]; it has a slight V-shape in plan (RCHME 'd'). At the bottom of the wall, a line of projecting base stones can be seen, emerging from beneath the drystone facing [4/573]. These project just less than a metre, and the relationship between them and the drystone facing is very similar to that noted in the section of the perimeter immediately to the north of the Clapham approach, described above (**EDAS 2/2**). At its north end, approaching the Swine Tail gap, the perimeter bank begins to narrow and the external drystone facing peters out, although this is in part due to the chronic levels of visitor erosion in this area. In the general scatter of stone rubble to the west, there is a small piece of stone exhibiting a 'grooved' appearance [4/571, 4/572], although it is probably the result of natural weathering.

- 3.48 Another earthwork here that may have resulted from visitor erosion is a low east-facing scarp that runs parallel to the perimeter itself (**EDAS 2/12**). This scarp is quite sharp, and appears to contain a high proportion of stone; furthermore, the south end terminates at two parallel lines of stone pushed into the turf, not unlike those further to the south which may have defined letters [4/574, 4/575].

Section 3: the Swine Tail gap

- 3.49 This section of the perimeter measures some 52m in length, and it occupies the north-west 'corner' of the rampart, running from Section 2 to the south-east as far as the start of Section 4 to the west.

Previous Descriptions

- 3.50 In 1853, Farrer shows the 'gap' to be filled by a wall (see figure 5). This wall is set on an acute north-west/south-east alignment, and has the appearance of truncating the north-west part of the summit. The outer side is indicated by a thick line and the inner side by a broken line. A definite 'end' or 'joint' (perhaps even a very narrow gap) is indicated at the north-west end, with the wall running west from Swine Tail, whereas at the south-east end, notwithstanding the marked change of angle, the wall appears continuous with that to the south. In the accompanying text, Phillips (1853, 28) stated that the
"wall is remarkably low for about 30 yards at the north-east, and there the hill runs into a sort of natural bastion".
- 3.51 In 1947, Ward noted:
"Turning a little NW., for about 60 yards, material has been removed from this once vulnerable spot. Two little heaps tell the tale of what is left" (Ward 1947).
- 3.52 The 1988 RCHME 1:500 survey plan shows Ward's 'two little heaps' clearly, separated by the broad swathe of major tourist erosion which is also marked (see figure 12). The northern cairn was sub-oval in plan and open to the north-west, while the southern feature consisted of little more than three pieces of a stone in a line, with a conical heap at one end. There is no indication of a bank or wall line running between them, or of the wall marked by Farrer in 1853. In the accompanying text, it is suggested that the most likely candidate for an original entrance is in the north-east corner leading onto Swine Tail, and that the rampart here is 'totally destroyed'.
- 3.53 The gap area was described as follows by Luke in 2003:
"Crossing Swine Tail on the line of Phillip's 'remarkably low wall' many large 'base stones' can be seen, set flush with the ground. Around the modern cairn in the middle further 'base stones' can be seen, this time in a rough circular formation. Close to where it finishes by the precipice is a small 4m diameter rough half circle of orthostats; one remains upright, the others look as if they used to be." (Luke 2003, 47). This survey division falls wholly within Luke's zone 3, which has already been described above.
- EDAS Survey Description (see figure 17)*
- 3.54 The whole of this section is heavily eroded from footpath use, making it difficult to ascertain whether some of the recorded features are man-made or natural in origin (see plate 24). The erosion has also created a tendency for apparent 'lines' of stones or 'edges' to become far more prominent than they may otherwise have been, and also to create the impression of man-made activity or alignments where there may actually be none. It is also important to understand how the geology may have influenced what can now be seen here. In this section, there is a noticeable concentration of large (some over 1.50m long) flat pieces of gritstone, far more than can be seen anywhere else on the summit. Many of these will have originated as part of the top bed of the summit's gritstone cap. As this top bed has weathered, pieces have become detached (or indeed may have been deliberately detached by man where exposed) (David Johnson, *pers. comm.*). Some of the pieces may have moved very little, but they could have been used as the base or lower part of artificial structures, while others may have been dragged from their place of origin to be incorporated into artificial structures.
- 3.55 As has been already been noted, the bank and external drystone facing of the perimeter to the south of the Swine Tail gap peters out, largely due to the levels of erosion here. Some c.3.00m beyond the end of the bank (EDAS 2/11), there is an

alignment of three flat stones, the upper and central stones possibly *in situ* structural stones, while the lower (east) could be geological. They are 'laid' across a spread north-east facing scarp, c.1.00m in height. To the north-east of this scarp, there is a second, slightly more prominent, scarp running parallel, which may define one side of a small sub-rectangular depression [4/564, 4/567] (**EDAS 3/1**). To the south-west, there is a rectangular area of laid or compacted rubble, measuring 2.40m by 1.20m, almost certainly the remnant of a relatively modern cairn [1/404] (**EDAS 3/2**). Close by to the north-west is a sub-circular feature measuring c.5.00m in diameter [4/566]. Again, this might be an example of patterned ground, although it does bear some similarity (notwithstanding its location) to the most denuded of the sub-circular and circular summit structures recorded by the RCHME. Alternatively, it appears to be in the correct position to be the 'Pile of Stones' noted at the angle of the south side of the Newby township boundary as it crosses this part of the summit in 1851 (see figure 4).

- 3.56 The spread north-east facing scarp continues to the north-west, its line punctuated by at least three large flat stones on the same alignment as the wall shown by Farrer in 1853. None of these could confidently be stated to be the remains of a structure. However, there are more convincing remains around a conical 19th century and modern cairn near to the centre of the Swine Tail gap. The cairn itself stands c.1.20m in height, and is a maximum of c.4.00m in diameter [1/402; 4/565, 4/570, 6/743] (see plate 25) (**EDAS 3/3**). There are three stones on the south-east side which appear to be deliberately laid, although it is now difficult to see them as the 'roughly circular formation' described by Luke (see above). Rather, two of the stones form an approximate line, with the third projecting slightly to the north-east [1/403]. The latter stone has a sub-triangular plan, and at 1.00m across, is similar in both form and size to the orthostats making up the half-circular feature close by to the north-west (see EDAS 3/4 below). There is an even larger stone on the east side of the cairn which again might be a fallen orthostat. These laid stones continue through the modern cairn on the same alignment, but then assume the pattern noted to the south-east; i.e. intermittent flat stones on the line of the wall shown by Farrer in 1853. They are more closely spaced to the north-west of the modern cairn than to the south-east, and can be followed north-west for a distance of c.17m.
- 3.57 To the immediate west of the point where the stones 'stop', the 'rough half circle of orthostats' described by Luke and also noted by the RCHME still survives [1/401] (see plate 26) (**EDAS 3/4**). The orthostats could be interpreted to be approximately half-circular or U-shaped in plan, open to the north-west side, and measuring c.3.00m by 2.00m. There are six orthostats in total, one remaining almost upright, four leaning to such an extent that they are nearly flat, and one completely flat. The largest orthostat measures 1.00m by 0.65m, and is 0.15m thick; the remaining standing orthostat rises some 0.50m above the ground surface. The interior of the feature is relatively level and grassed. At either end of the half-circle, there is a smaller flat stone on the same alignment, and opposite, a larger flat stone, possibly further fallen orthostats. Taken together with the half-circle, these might be interpreted as forming a sub-oval feature, measuring c.4.20m by c.3.80m, although this effect has at least in part been created by visitor erosion. However, an alternative interpretation could be that, rather than forming an oval or half-circular structure, the orthostats are in fact the very eroded or truncated remains of something resembling one of the box sections described within Section 2 above (David Johnson, *pers. comm.*). If this were to be the case, then the flat stones on the north side might be examples of the external base stones seen to the south of Swine Tail, with the single standing orthostat part of the former internal facing. The latter interpretation is attractive, in that it would

lessen the distance between the apparent end of the wall marked by Farrer and the point where the perimeter structures recommence.

- 3.58 A shallow north-facing scarp runs west from the feature described above to the point where the perimeter bank once again becomes clearly visible. On the north side of the area between the two, there are several large flat stones on the ground, of similar dimensions (and indeed also somewhat larger) to those surviving within Swine Tail gap on the line of Farrer's 1853 wall. However, unlike the latter, these flat stones do not appear to be the remnants of an artificial structure, and are probably detached pieces of the top bed of the gritstone cap. The locations of these stones appear to coincide with RCHME 'n' on the 1988 1:500 scale survey plan (see figure 12) which, the accompanying text notes, represents a section of the rampart which was destroyed by cairn-building activity when the RCHME survey was in progress (July 1988).

Section 4: West of the Swine Tail gap

- 3.59 This final section within the EDAS survey area measures some c.140m long, and runs west from the west side of the Swine Tail gap as far as a point close to a circular feature (RCHME '17') where the rampart turns markedly to the north-west.

Previous Descriptions

- 3.60 In 1853, Farrer shows this division as comprising two distinct parts of wall, both of approximately equal length, and separated by a relatively wide gap; to both parts, the inner side is indicated by a thick line and the outer side by a broken line (see figure 5). Farrer also appears to indicate a very narrow gap, or possibly a 'joint', to the east part where it meets the wall he marks crossing Swine Tail gap (see below), whereas the west part is shown as continuous with the wall at its west end which turns markedly to the north-west.
- 3.61 In 1947, Ward noted the following:
"Turning more N.W. is a 6 ft to 6 ft. 6 ins cairn, on a heavy base of, possibly, original wall, and (outside) the original base stones are apparent. For a few yards the wall is 4ft 6 ins high. We query the next 'opening' and, asking "stones carted away" (?) we observe (inside) two "uprights." . . . Beyond the 'opening' is another length of wall, 4ft. high base stones, and (outside) an "upright". This approximately 80 yards is the best length of wall and base stones in the mile length of the British Wall which show the original wall and its base stones." (Ward 1947).
- 3.62 The 1988 RCHME 1:500 scale survey plan marks Ward's cairn (RCHME 'm') (see figure 12) and in the accompanying text, it was noted that while the survey was in progress in July 1988 an adjacent section of the rampart (RCHME 'n') to the north-east was destroyed by cairn building activity (see above). To the north-west of the cairn, a sub-rectangular bare stone bank, some 16.0m long and 6.0m wide is shown, with the outer face surviving and returning to the south at its east end. The west end was also apparently defined by three orthostatic stones or 'throughs', most probably including the two 'uprights' noted here by Ward in 1947; three flat stones are shown to the south. Beyond these, there is an c.15m wide gap, and then the rampart resumes as a bare stone bank, slightly sinuous in plan, measuring up to 7.0m wide. The rampart was faced externally by drystone walls, described as surviving up to five or six courses in height for short lengths. This outer face was penetrated by 'throughs', transverse lines of stone set on edge. The rear face was faced or supported by orthostatic blocks, but the relationship of the throughs to these was unclear. The slightly sinuous length of rampart shown by the RCHME is c.68.0m long. It then becomes less well preserved, formed by

several discontinuous linear spreads of bare stone rubble, within which only two transverse lines of throughs are marked. Very few structural stones are also shown to the area of rampart which turns markedly to the north-west.

- 3.63 This section was described as follows by Luke in 2003:
“A gap follows, and where the wall starts it is faced with orthostats, suggesting this is a planned opening. This is followed by a 20m length of wall, sadly disturbed and another gap of about 20m with no trace of robbing on the ground, and with two possible original flanking orthostats incorporated into a modern feature. This ‘gap’ lets out onto the spectacular panorama of the Devil’s Gulch landslip and The Arks, with Whernside (736m) a few miles distant dominating land to the north. There follows the longest section of walling on the north side, about 50m; it contains some fine courses of stonework, though elsewhere is ruinous. At its most westerly end the character of the wall begins to change again, and before the corner by ring structure (17) it reverts to being a rough grassed over bank of stones, shale and earth, very low and slumped with few visible orthostats, similar to the west and southern parts.” (Luke 2003, 47).
- 3.64 The majority of this section also falls within Luke’s zone 3, although the western end (broadly the point where the rampart turns markedly to the north-west) forms part of Luke’s zone 4, which is described as follows:
“There is a small section along the north edge, approximately in the centre, which reverts to the classic external bank and internal quarry ditch as found in Sections [Zones] 2 and 3. There are hints of small flat stones demarking the internal edge of the bank, as well as orthostats crossing through the bank, but they are not generally as conspicuous as elsewhere on the summit. At the eastern end of this section the ditch stops and the stony embankment merges gradually into the stone wall. The bank and ditch section is of modest size and relatively short (approx. 40m).” (Luke 2009, 13).
- EDAS Survey Description* (see figure 18)
- 3.65 This section of recorded perimeter measures c.370m long, running west from the Swine Tail gap as far as a prominent change in angle. Plate 27 provides a general view looking east.
- 3.66 At the east end of this section (some 7.00m west of the orthostat ‘half circle’ - EDAS 3/3), the perimeter bank recommences. The bank itself comprises a discrete sub-rectangular spread of stone rubble, 16.80m in length and with a maximum width of 7.00m at the eastern end, where there is a marked bulge in the south side; the western end narrows to 4.00m wide (**EDAS 4/1**). The bank stands up to 1.00m high, and there are several fallen orthostats to the internal face. The north face is formed partly by a section of drystone wall, almost 9.00m long and standing up to 0.80m high. At its eastern end, it retains a ‘Farrer through’, an upright through that is visible externally piercing the drystone wall, as illustrated by Farrer in 1853 (see figure 5) [4/556, 4/557, 4/558], with the apparent remnants of a transverse division to the south (see plate 28). The Farrer through stands 0.70m high, and the drystone wall abutting it to the west is of similar height, but that to the east survives only as a single course. The Farrer through is therefore extremely vulnerable to movement by cairn builders or collapse; had it fallen sideways prior to this survey taking place, it could easily have been mistaken for a former horizontal stone of the external drystone wall facing, and its significance would have been lost.
- 3.67 There were two modern shelters on the south side of this length of the bank [1/383] (see plate 29). The eastern shelter (**EDAS 4/2**) was 2.00m square and 1.00m high, and had an almost igloo-like form, with a stepped roof over the hollow interior [1/400] (see plate 30). This was pushed over at some point between April and October 2011, revealing what appears to be a much older drystone wall face to the

east side, 2.10m long by 0.50m high [7/637, 7/638] (see plate 31). This shelter appears to be the 'walker's cairn' identified by the RCHME (RCHME 'm'), which was also 'Ward's cairn' (see above). The western shelter (**EDAS 4/3**) was sub-rectangular in plan, measuring 2.80m by 2.00m, and with walls standing up to 0.70m high [3/645]. The south wall incorporated an *in situ* orthostat, as did the west wall. The latter was probably the largest surviving *in situ* orthostat in the entire summit structure, measuring 1.30m by 0.40m and standing 0.40m high [1/399] (see plate 32); it was placed transversely, and marked the end of this part of the perimeter bank. However, at some point between mid January and the beginning of March 2011, the shelter was destroyed [4/562, 4/563] (see plate 33). Whilst this action has revealed the orthostat to a greater extent than before, the shelter was not dismantled and removed but rather pushed over. This has led to the modern material being spread over and mixed in with the remains of much earlier structures, blurring the boundaries between the two.

3.68 To the west, there is then a gap c.15.00m wide, in the approximate centre of which is a small modern cairn [1/398] (see plate 34). This gap is positioned opposite the very steep north-facing slope forming part of the Devil's Gulch landslip and The Arks. There is no surface indication within the gap that the perimeter bank was ever present here, or that it has been subsequently removed. In conditions of low winter sunlight and frost, a very shallow scarp may be visible running across the gap, approximately in line with the perimeter structures to either side [4/554, 4/555], but this is most probably the result of erosion or natural weathering of the summit surface here.

3.69 On the west side of the gap, the perimeter bank resumes as a spread of stone rubble, up to 5.00m wide and standing up to 0.50m in height (**EDAS 4/4**). There is a gap between the north side of the bank and the edge of the summit, formed by a relatively level area of ground varying between 2.00m-4.00m wide, although this width increases to as much as 8.00m further west where gritstone outcrops are present. The east end of the bank is slightly rounded and made up of smaller material. It may butt or be heaped up against a partly visible transverse line of stones. As the bank moves west, there may be further evidence for the possible longitudinal divisions referred to above by the RCHME. The external face of the bank is formed by a drystone wall, standing up to 0.50m high or a maximum of three visible courses. On the uppermost surviving part of the wall, there are at least three large flat stones, two of which remain *in situ* [4/559, 4/560] (see plate 35). Behind these stones, the bank is relatively flat-topped for c.1.00m, and then it rises again as a steep rubble scarp for a further 0.70m. This scarp forms the north side of a raised, slightly sinuous, bank of rubble on top of the main spread. This material steps down again in another steep scarp on its south side, where there are a line of three orthostats facing the internal side of the rubble spread, together with other likely fallen examples [1/396, 1/397]. These orthostats stand a maximum of 0.40m in height. It is difficult to see how the internal face could have ever risen much higher than the maximum height of these orthostats; a second 'course' of orthostats could not have been placed on top of them unless the internal face was markedly battered. Did the internal face therefore step in as well? Taken together, the structural evidence here might be taken to indicate that there was a wider base, between 4.00m-5.00m across, which rose perhaps less than a metre above the natural ground surface and then stepped inwards both externally and internally. A narrower rubble bank or wall, between 1.00m-2.00m wide and of an unknown total height, perhaps rose off the wider base.

3.70 Some 17.50m west of the 15.00m wide gap, a number of fallen orthostats may indicate a much narrower gap, c.1.00m across [1/393] (**EDAS 4/5**). On the north

side of this possible gap, the external drystone wall preserves the single recorded surviving example of an upright 'through' that is visible externally, as illustrated by Farrer in 1853 (see figure 5) [1/394, 1/395] (see plate 36). The through itself stands 0.50m high, while the drystone wall flanking it extends for 6.00m to the east and 1.00m to the west, and itself stands up to 0.80m in height; this and adjacent sections of the drystone wall were also marked on the RCHME 1:500 scale plan (RCHME 'd') (see figure 12).

- 3.71 To the west of the possible narrow gap, the bank resumes in much the same form as seen to the east, although it is not as well preserved (**EDAS 4/6**). The external drystone wall is also set c.1.00m further to the north, and this does not appear to be the result of the spreading of fallen material. Three large flat slab stones are visible here, only one remaining *in situ*, similar in appearance to those described above. Just to the west, there may then be the fragmentary remains of a transverse division. Beyond this, the bank becomes lower and more spread. A small sub-square area with two fallen orthostats rapidly widens to 7.00m, and within this a compacted area of smaller stones is visible. This sub-square area terminates at the fragmentary remains of a transverse feature. To the west of this feature, the perimeter bank maintains its 7.00m width, retaining small orthostats to the internal face and fallen drystone walling to the external face (**EDAS 4/7**). It then appears to meet a large transverse feature, up to 3.00m long and 8.00m wide. At the south-west corner of this large transverse feature, there is a tall, narrow, fallen orthostat, almost 1.00m long, one of three similar stones lying adjacent to this part of the bank's internal face [1/391, 1/392]. These orthostats are of similar dimensions to the single surviving upright Farrer 'through', but there is no evidence that they actually formed throughs. Several of these stones were marked with small yellow spray-paint dots at the time of the survey work.
- 3.72 To the west of the large transverse feature, the perimeter bank (**EDAS 4/7**) begins to narrow again, reaching a minimum width of 4.00m. It preserves a very similar form of construction to that described to the west of the 15.00m wide gap above (**EDAS 4/1**). There is a sub-rectangular bank of rubble, 4.00m long and 2.00m wide, on top of the main spread; its west end is defined by a c.1.00m high drystone wall face, which appears to be continuous with the external drystone wall facing, which itself stands up to 1.00m high here. At the narrowest point, the bank contains a high proportion of smaller stone rubble [1/390] (see plate 37), and it then begins to widen again, although it remains low, being no more than 0.30m in height, and is well grassed.
- 3.73 The next part of the perimeter bank has a rather complicated form (**EDAS 4/8**). It appears to form a discrete structure or section, 5.00m long by 4.00m wide. The east end is defined by compacted small stones, placed adjacent to the west side of the remains of a transverse division [1/389]. On the west side of the compacted stones, there may be the remains of a bank of rubble on top of the main spread. The west end of this part of the bank may be defined by two *in situ* structural stones, loosely defining its north-west and south-west corners. A low north-facing scarp then runs west from the north-west corner, but it is possible that there was once a narrow gap here, just over 2.00m wide. If so, it would have opened out onto the area close to a prominent projecting gritstone outcrop. Beyond this gap, there is another length of bank, 6.20m long by up to 2.50m wide, the eastern half of which is topped with compacted small stones (**EDAS 4/9**). There may be the fragmentary remains of transverse lines of stone running north from either end of this part of the bank, towards the edge of the natural slope.

- 3.74 There then appears to be another small gap, c.2.00m wide, to the west of which is another discrete length of perimeter bank (**EDAS 4/10**). This part has a slightly sinuous sub-rectangular plan, measuring up to 12.00m long by 6.00m wide. A much smaller almost detached sub-rectangular spread of smaller stones is set at its south-east corner, contained by fallen orthostats to the east and south sides. The main part of the bank also contains a high proportion of the smaller stones, and appears to exhibit the same possible longitudinal division (i.e. a narrower spread of stone rubble set on a wider base) as has been described above [1/388] (see plate 38). The fragmentary remains of a drystone wall are visible to the external face, and three orthostats remain *in situ* to the inner face. There are also three larger fallen orthostats to the south of these [7/639], marking the line of a slight south-facing scarp that has almost certainly been created by walker erosion.
- 3.75 At the west end of this section of the bank, there is a c.3.50m wide gap where, although some rubble is visible, it is not present in concentrations resembling those to the east and west. Thereafter, the perimeter bank resumes, but as has been previously noted by Luke (2009, 13), its character is different (**EDAS 4/10**). Within the EDAS survey area, it is represented by a spread bank of stone rubble, averaging 3.00m wide and standing up to 0.40m high [1/387] (see plate 39). Small numbers of *in situ* and *ex situ* facing orthostats are visible, although they are nowhere near as numerous as seen in the bank to the east (EDAS 4/10). Where the bank begins to curve more sharply to the north-west, there is a section suggestive of a more regular stone-built or stone-face core, c.2m wide.

4 THE HOSPICE TOWER SURVEY

The History of the Tower

- 4.1 At some point in the early 1830s, a tower or hospice was built on the summit of Ingleborough by Hornby Roughsedge, a mill owner at Bentham who had purchased the manor of Ingleton from the Parker family of Browsholme. The earliest reference to the tower that has been uncovered by the research undertaken by EDAS for this report was made by John Nixon in 1833, in a short paper published the year after in *The London and Edinburgh Philosophical Magazine and Journal of Science* concerning the accurate measurement of the height of Ingleborough (see below).
- 4.2 In his work to accurately calculate the height of Ingleborough and other northern hills (Nixon 1828, 83), Nixon was making use of the triangulation stations erected by Colonel William Mudge and Captain Thomas Colby as part of their work to produce the measurements on which the earliest Ordnance Survey maps were based. The triangulation station on Ingleborough was erected between 1800 and 1809, and it lay at a height of 2,361 feet. It was described as follows:
"Ingleborough, Yorkshire: The station on this well known mountain is sixty-seven yards east from the old hut (a shepherd's hut). Round the station are placed a great number of very large stones." (Mudge & Colby 1811, 79).
- 4.3 At the time of the publication of his first paper in 1828, Nixon had not been able to satisfactorily identify the location of the original Ordnance Survey station on the summit. However, he supplied further information in 1833, and this is when the tower is first noted:
"On the summit of the hill, the substantial tower lately erected would afford complete shelter to the observer, and enable him to fix his barometer unexposed to sun, wind, or wet ... At Colonel Mudge's station on Ingleborough, which is 197 feet east of the centre (axis) of the round tower erected on the site of the beacon hut, the angle between the tower and his signal on Whernside measures 87 degrees 20 minutes. The distance from the station to Whernside being 22,435 feet, that between the centre of the Tower and Whernside (our base line) will be 22,445 feet. The Tower, of which the base, resting on an elevated flagged terrace, is on a level with the ground at the station, measures 22 feet 3 inches in height and 57 feet in circumference." (Nixon 1834, 163-164)
- 4.4 A second, much lengthier paper, appeared in the same journal in 1835 (Nixon 1835). Usefully, this not only included more information on the summit but also a plan showing earlier structures in relation to the hospice tower:
"Mudge's station on Ingleborough is described as bearing 67 yards (= 201 feet) east of the old (shepherd's) hut, and marked by a great number of very large stones placed round it. According to one of the secondary triangles, an 'old building' on the hill would bear 80 degrees 18 minutes S.W., 200 feet. In 1822, a loft pike (P), (See Plate, fig.2) standing at the western end of an old wall (V) (18 feet long and 4 feet thick), used for hoisting the beacon tar barrel, bore 80 degrees 2 minutes S.W., 200 feet of a heap of stones, considered to be those marking the station (a footnote adds 'A gentleman resident in Ingleton who has ascended the hill every year from the date of the Colonel's visit, assured me that the stones had never been disturbed in situation.'); the theodolite standing, to the best of my recollection, exactly over their centre. As the pike and the 'old building' were equidistant from the station and within a foot of the same direction, they were probably identical. In 1829, a pike (Q) on the old wall, undoubtedly the same as the one observed in 1822, bore from my signal (S) 88 degrees 37 minutes S.W., 202 feet, or about 5 feet north of the previous direction. It may therefore be suspected that the present signal (S) (which is 8 feet high and 4 feet in diameter) was built, contrary to my instructions, not on the site of the original one (at the heap of stones) but about 5 feet to the N. by E. The tower (T), 18 feet in diameter, bears 84 degrees 40 minutes S.W. of the signal (S), their centres being 197 feet distant. The foundations of the terrace (W), 24 feet in diameter, cover those of the

old hut, of which no plan has been preserved. It is not specified from what part of the hut the 201 feet were measured, but the distance from the heap of stones to its centre, supposing it to coincide with that of the tower, will be only 195½ feet. Mr R Clapham of Feizor (to whom I am indebted for the plan of tower & c.) is of the opinion that the walls pointed N.W. and N.E, which would throw its centre further from the station. Whenever the signal on Ingleborough appeared from any station to have been thrown down (as was frequently the case until a person was appointed to watch it) one, and sometimes both sides of the adjacent tower were observed in lieu of it, and the corresponding correction calculated from data of undoubted accuracy.” (Nixon 1835, 250-251). Both the tower, the older wall to the south, and the various ‘pikes’ are shown on the accompanying plan (see figure 20).

- 4.5 The tower was apparently erected in the early 1830s as a shelter for those who made it to the top and also a shooting cabin for grouse shooting parties (Johnson 2008, 9). At the opening ceremony, races and athletic sports were undertaken; the main race, comprising a route twice round the summit (a distance of about two miles) was won by colliers from Clapham and Ingleton. However, as part of the celebrations, quantities of alcohol had been transported to the summit, causing elements of the assembled crowd to become drunk and unruly. After Roughsedge, a Mr Overton and other gentlemen had left, fighting between two rival gangs led to the windows and furniture of the tower being smashed. Ornamental coping stones were thrown down, and by dusk the building was badly damaged. The ‘dome’ or roof apparently lasted for a few years longer, before it too was deliberately wrecked. The tower was never rebuilt (Mitchell 1994, 13-14; Johnson 2008, 9). Given that Nixon was apparently using the tower for accurate measurements on several different occasions, it seems odd that he does not mention its destruction, particularly given the meticulous attempts made to locate earlier survey stations and structures. One explanation could be that the tower had been completed and was standing for some time before its official opening, and that Nixon had taken his measurements during this period.
- 4.6 An undated and unreferenced image (an engraving?) of the complete tower was reproduced by Bentley in *Old Ingleton* (Bentley 1976) (see figure 21, left). The image shows the main body of the tower rising from a circular plinth, of somewhat greater diameter than the tower itself. A flight of external stone steps rises from the base of the plinth to the top, the steps perhaps decreasing in width as they rise, although this may be an artistic device to suggest depth and recession. The tower is also circular in form, and is shown to be built of roughly coursed squared stone, with a somewhat rustic appearance overall. In the centre of the tower at the heads of the steps, a tall, rather narrow, doorway is shown, with an almost elliptical head and possibly also having slightly projecting rubble quoins. This doorway is flanked by narrow windows, with two centred arched heads and again possible projecting rubble quoins and lintels. Above the doorway, there appears to be a narrow slit window. The height of the doorway relative to the rest of the tower suggests that it may have been of two storeys internally. The tower was surmounted by a heavy corbel table resembling machicolations, with a crenellated parapet above this. The overall impression is of a small castle, or a rook chess-piece.
- 4.7 Riley (1923, 116) published a depiction of the tower ruin dated to August 21st 1839 (see figure 21, right). Entitled ‘Tower on the Summit of Ingleborough’, the sketch is said to have been taken from an original drawing by the late Miss Jarry of Settle, in the possession of J W Lambert of Settle. The sketch provides a number of interesting contrasts with the earlier image reproduced by Bentley. Like the latter, it shows the main body of the tower rising from a circular plinth, capped with flat slabs radiating outwards from the centre; there is no evidence for the external steps which would have been located to the rear of the sketch. It appears that

approximately half of the structure survived to its full height at the time the sketch was made. Two complete two-centred arched windows are visible, with the remains of a third to one side. A fourth similar window can be seen through the central complete window in the foreground; the overall arrangement suggests that there may have been six windows in all. The major difference to the image reproduced by Bentley is the size of the windows; if the proportions shown on the sketch are approximately correct, then the tower is more likely to have been of a tall single storey internally. The doorway shown by Bentley was presumably located in that side of the tower depicted as broken down and ruinous on the sketch.

- 4.8 The tower is not marked on the Ordnance Survey 1851 6" to 1 mile map (surveyed 1846-48), nor is any ruin shown (see figure 4). It is difficult to believe that the structure had decayed so markedly since the state shown on the 1839 sketch that it was unrecognisable, given that the base remains clearly visible today. It may be that because the tower did not define a boundary across the summit, as the various 'Pile of Stones' that were marked did, it was of little interest to the Ordnance Survey and was therefore omitted. The site was recorded by the 1998 RCHME 1:500 scale summit survey (RCHME 'k') (see figure 12).

EDAS Survey Description (see figure 22)

- 4.9 The remains of the hospice tower (**EDAS 5** on figure 23) lie on the western edge of the summit, set back about 12m from the edge of the steep natural slope itself, close to the point where the Ingleton approach terminates; it is prominent when walking to it from the Clapham approach [2/420, 2/423] (see plate 40). The site provides superb views to the south and south-west, and the ruins are visible for some distance from the south-west when approaching from the Ingleton direction [4/457, 4/450, 4/551, 4/553].
- 4.10 The remains of the tower are formed by a sub-circular mound of stone rubble within which wall faces and other structural features survive to a low level. The mound itself stands to a maximum height of between 1.30m-1.40m on the eastern, summit, side but up to c.2.20m to the western side; it has maximum dimensions of 14.80m north-west/south-east by 11.50m north-east/south-west [3/655, 3/656, 3/657, 3/662] (see plate 41). The east and south sides of the circular plinth shown on the Bentley image and the 1839 sketch (see figure 21) are clearly visible, but the north and west sides are now obscured by rubble. Nevertheless, the original diameter of the plinth can be estimated at c.7.10m. The visible wall face of the plinth survives to a maximum height of 0.40m or three visible courses on the south side, and this is built of neatly coursed squared gritstone cut to fit the external curve [3/660]. There are no clear survivals of the capping slabs or stones shown on the 1839 sketch, but there may be one slightly *ex situ* example to the south-east part of the plinth, which has the letter 'P' or 'B' carved on it at one corner [3/652, 3/653]. In addition, at least one of the large *ex situ* stones to the north-east of the tower ruin has the correct curved shape to represent a former capping stone.
- 4.11 The north, south and west sides of the tower itself are also visible in plan, but the east side has apparently been truncated, leaving only a scarp. The original external diameter of the tower was c.5.50m, with a visible wall face surviving to a maximum height of 0.40m or three visible courses on the west side [3/659] (see plate 42); it is built of neatly coursed squared gritstone cut to fit the external curve [3/663, 3/664]. Two steps on the north side of the tower probably mark the position of an original doorway [3/661]. If this is the case, then the Bentley image may show the north side of the tower, looking south (see figure 21, left). The

uppermost step has the letters 'P M' carved into it [3/654] (see plate 43); the stone immediately to the south-east corner has a small piece cut out to one corner, which may have once housed the upright of a door frame.

- 4.12 No other architectural fragments are visible in or around the tower ruin, but the steps leading up to the summit on the Ingleton approach incorporate at least one piece of a chamfered door or window jamb that might have originated from the demolished building. In addition, to the north of these steps, amongst a spread of scree, a curved dressed stone is visible, possibly a remnant of the tower's upper part [7/643]. The very top of the ruin is surmounted by a modern conical cairn. The far more substantial modern structures which are developing to the south-west of the ruin are described under Chapter 5 below.
- 4.13 A low spread south-east facing scarp curves around to the south and south-east of the remains of the circular plinth, becoming narrower but higher as it moves west and also incorporating some larger pieces of stone rubble. The scarp appears to overlie the fragmentary remains of another structure, visible in plan only, and partly defined by an edge of stone rubble pieces laid flat [3/658] (see plate 44). The visible portion is sub-rectangular in plan, and set on a slight north-west/south-east angle. It measures at least 2.70m (and possibly as much as 3.80m long) by 2.00m wide, and is placed c.3.50m south of the plinth edge. This structure does not appear to be either modern or the remains of a modern feature which has been cleared, and it is therefore possible that it forms the fragmentary remains of one of the structures referred to during the 18th century which pre-dated the hospice tower. This is confirmed by Nixon's 1835 plan, which shows a length of wall to the south of the tower in the same position as the fragmentary remains (see figure 20) - as noted above, this wall was 18 feet (5.48m) long and 4 feet (1.22m) thick, and was used for hoisting the beacon tar barrel (Nixon 1835, 250-251). It is also possible that this wall represents part of either the old watch house, an old shepherd's hut, or the beacon structure itself, described in 1761 (Gentleman's Magazine 1761a, 127).

5 CAIRN BUILDING, EROSION AND CONDITION SURVEY

The Development of Erosion and Cairn Building in the Post-Medieval and Modern Periods

- 5.1 It is unlikely that the summit of Ingleborough has ever had anything other than a thin covering of soil following the end of the last period of glaciation. The earliest descriptions of the summit, for example that given in *The Gentleman's Magazine* in 1761, commented on this, noting the summit was "so dry and bare that it affords little grass, the rock being but barely covered with earth" (*Gentleman's Magazine* 1761a, 127). Nevertheless, throughout its history, the summit has clearly attracted the attention of those living in the vicinity and, due to its height and prominence, it was regarded as a prime location for a beacon.
- 5.2 The earliest reference to such a structure on the summit uncovered during the research undertaken by EDAS for this survey dates to the late 16th century, but unfortunately, it is second-hand. In 1889, as part of a wider discussion, Nicholson gave a description of beacons in West Yorkshire listed according to the "general certificate thereof made" during preparations to meet and resist the Spanish Armada. This information was apparently taken from a 'MS book, dated 1580-90' that was being worked on by his friend J Goulton Constable Esq, of Walcote near Doncaster; the book had in turn been supplied to Constable by another friend. The whereabouts of this manuscript book are presently uncertain, but the entry for Ingleborough (under the West Riding) as given by Nicholson is as follows:
"YEW-CROSSSE BEACON. There is but one beacon in Yewcrosse, standing upon a high mountain called Engleborough, within the parish of Engleton, which standeth in the way from Skipton to Kendall, or Wharton, in Lancashire, and so to the next sea. This beacon receiveth light from a beacon standing upon Wharton Fell, in Lancashire, and giveth light to a beacon upon Longrigge, in Lancashire, near unto Sir Richard Sherburn's, and so to another beacon in Lancashire standing upon a mountain called Pendle, nor far from Clithero" (Nicholson 1889, 23).
- 5.3 Whatever the authenticity of this reference, there clearly was a ruin of some sort visible on the summit during the mid 18th century (Rauthmell 1746, 65-68). This might be the same structure described in 1761 as having the 'dimensions of a house', together with 'a place erected with stones, three or four yards high, ascended with old stairs', suggested to be a former beacon site, both overlooking the Irish Sea (*Gentleman's Magazine* 1761a, 127). The latter can be located fairly closely as a result of the work undertaken by Nixon in the early 19th century, particularly using the plan he published in 1835, which almost certainly shows the same structure to the south of the hospice tower (Nixon 1835, 250-251) (see figure 20). In 1835, the structure was described as having a 'lofty pike' on one end which had been used to hoist a beacon tar barrel, thus showing that it had been used as part of the Napoleonic beacon erected on the summit at some point prior to 1803; however, if it is the same structure as that referred to in 1761, then it was clearly being re-used in c.1803. Again, according to Nixon (1835, 250-251), the Napoleonic beacon hut erected to guard the beacon tar barrel was located beneath the position later occupied by the tower. In 1811 the Ordnance Surveyors made reference to an old hut or shepherd's hut (Mudge & Colby 1811, 79), which seems to have been in approximately the same position. It seems unlikely that they would have forgotten or not known about the presence of a Napoleonic beacon hut, and so perhaps this beacon hut also re-used an earlier structure. Alternatively, by 1811 Ingleborough may have been abandoned as a beacon position and the hut turned over to the local shepherds.

- 5.4 It is interesting to note that, as early as the survey work undertaken by Nixon in the 1830s, the original surveyors encountered difficulties with their station on the summit being demolished by persons unknown, eventually having to appoint a watchman to prevent this. This unauthorised demolition may have been the reason that Nixon initially had a great deal of trouble locating it. It was said to have had a great number of very large stones placed around it, and to have been located some 67 yards (61.26m) east of either the old hut (subsequently built over by the hospice tower) or the earlier structure to the immediate south. This would place it on or very close to the large cairn to the south-east of the 1953 walkers' shelter. This cairn (**EDAS 6** on figure 23), although modern structures have developed on its east side, is unlike any other of the modern cairns recorded on the summit. It is sub-circular in plan, measuring c.7.00m in diameter and standing up to 1.40m in height [6/765] (see plate 45). The total diameter includes a skirt of loose material, whilst there is a core of compacted stone measuring c.3.00m in diameter. Nixon was apparently never able to locate the original survey station referred to in 1811, as he had a new one built; this was 8 feet high and 4 feet in diameter which, as a result of later measurement, he was able to calculate was about 5 feet north by east of the original (Nixon 1835, 250-251). Does the existing cairn then preserve at its core the remnants of Nixon's new station, built at some point in the late 1820s or early 1830s?
- 5.5 Following the erection and subsequent wrecking of the hospice tower in the early 1830s, there is little relevant information relating to activity on the summit until the publication of the Ordnance Survey 6" map in 1851, surveyed in 1846-48 (see figure 4). On this map, an Ordnance Survey cairn is marked in approximately the same position as the cairn described above, with another similar feature at the very north-west corner of the summit, of which no trace remains. Similarly, little or nothing can be seen of the piles of stone marked on the southern edge of the summit where the Newby township boundaries cross onto it, although the 'Pile of Stones' marked closer to the centre might have been placed on either of two of the circular features here (RCHME '11' and '12'). One of the 'Pile of Stones' shown close to Swine Tail is apparently in a similar position to a sub-circular feature c.5.00m in diameter close to the remains of an existing modern cairn (EDAS 3/2), but no paths or trackways of any kind ascending to the summit are marked. Shortly afterwards, in 1853, Phillips noted that there were two access points to the summit, an older one at the south-west corner and the trackway (the Clapham approach) that was then in use. The site of the beacon was described as being clearly at 'the present Man', and on the accompanying survey, Farrer depicted a mound of some kind in approximately the same position as the existing cairn (EDAS 6) described above and where the Ordnance Survey cairn was shown in 1851 (Phillips 1853, 26-29) (see figures 4 and 5). In 1866 it was noted that a 'stately' Ordnance cairn occupied the centre of the summit (Anon 1866).
- 5.6 Moving into the 20th century, the summit of Ingleborough was clearly becoming more popular as a destination for walkers, although in what numbers is difficult to estimate, and there is even less information regarding what they did when they reached the summit. In 1923, Riley illustrated three paths up onto the summit; one from Ingleton, one from Clapham onto Little Ingleborough and a third onto Simon Fell from Chapel-le-Dale (Riley 1923, 99). In 1933 Elgee and Elgee (1933, 119-120) stated that "Much of this ancient stronghold has been destroyed in building the huge modern cairn which mars the dignity of this sublime site". In the absence of any further information, it is assumed that they were referring to either the Ordnance Survey cairn or the hospice tower ruin, and from their description one might assume that walkers were adding stones to the structure. If correct, this appears to be one of the earliest references to such activity on the summit. Both

the cairn, and the hospice tower ruin, are clearly visible on the earliest known aerial photograph of the summit taken in 1938 (YDNPA HER WVC F2745) (see figure 6, top); other cairns are also visible along the perimeter and these, together with the cairns visible on subsequent aerial photographs, are discussed in more detail below.

- 5.7 Writing in 1939, Raistrick (1939, 124-125) made a number of statements regarding the destruction of early structures on the summit which are difficult to verify. He asserted that much damage had been done to the walls at various times by sourcing stone from them to build the beacons and cairns, that the circles of stone had been levelled in Victorian times for the same purposes, and that hut circles had been cleared to allow 'freak' horse-races on the summit. The earliest reference to races being held on the summit appears to be that made in the *Gentleman's Magazine* (1761a, 127), when the correspondent stated that "several persons now living say, that they have seen races upon it". This statement suggests that the races might not have taken place for some time prior to c.1760, and significantly no specific mention of horses is made, the term might equally have applied to running races. The first reference specifically to horse racing uncovered by the research undertaken for this report was that made by Howson (1850, 100). It seems likely that the idea that internal features on the summit were flattened to make way for horse races was an invention of Raistrick's. Part of the problem is almost certainly one of misinterpretation; Raistrick, and others, interpreted both the sub-circular features and the perimeter structures as having been damaged because they expected them to have once stood higher, which may not necessarily have been the case (see Chapter 3 above). Mitchell also notes that, during the Second World War, the sheep population on the Ingleborough massif underwent a dramatic increase, leading to overgrazing in the post-war period (Mitchell 1994, 31 & 46).
- 5.8 According to Raistrick, in 1939 the two principal approaches to the summit were from the east (the Clapham approach) or the western side (presumably the Ingleton approach); the latter was thought perhaps most likely to form an early entrance. In 1948, Poucher observed of the summit that "its flattish top carries four cairns, of which the highest and largest overlooks the extensive landscape to the south-west" (Poucher 1948, 132); this would appear to be a reference to the remains of the hospice tower (**EDAS 5** on figure 23). The hospice tower may be the structure referred to as the 'Beacon cairn' by Ward in his 1946-47 perambulation of the perimeter. At this date, there was what was described as a public path to Crina Bottom Farm and Ingleton, and there was a modern 'beehive' cairn, 6 feet high, close to where the cartway from Newby Cote and Clapham reached the summit. There was a stone shelter hut built out of the wall further towards Swine Tail, most probably that once existing within the RCHME 1:100 survey area (**EDAS 2/6** on figure 16). North-west of the Swine Tail gap, Ward saw a 6 ft to 6ft 6 ins high cairn on a heavy base of possible original wall (Ward 1946-47, 126-129).
- 5.9 Much of what Ward described can be seen on the superb aerial photographs taken in July 1945 and July 1949 (CUCAP G19-22 & EL070-088) (see figure 6, bottom and figure 7). At this time, in general, there appears to be very little erosion on the summit itself, although both the approaches from Ingleton and Clapham are well worn, particularly the latter. There is little erosion on or around Swine Tail, although on one photograph, the footpath leading up onto Swine Tail is partly visible. The south-eastern part of the perimeter structure has narrow erosion trails running very close by and parallel to the internal and external sides, with cross trails across the perimeter between them. Sheep can be seen grazing on the

summit, and two walkers had just breasted the summit from Clapham when one of the photographs was taken. The ruin of the hospice tower is clearly visible, as is the large cairn to the north-east, which appears to have a sub-rectangular structure on its summit.

- 5.10 Although no stone for the 1953 walkers' cruciform windbreak or shelter (**EDAS 7** on figure 23) was sourced from the summit of Ingleborough, it is undeniable that its erection had a very significant and direct impact on the summit, as in the subsequent period its positioning has very largely dictated how erosion has developed. By 1954 there were apparently 'at least six recognised routes to the top of Ingleborough' (Douglas Bolton 1955, 125), although early photographs of the walkers' shelter taken in 1966 appear to show far less erosion to the ground surface around the structure than currently exists (Poucher 1978, plates 204 and 206) (see figure 8). However, on an oblique colour aerial photograph, looking west under light snow cover, taken in December 1985 (YDNPA HER ANY 211/26), erosion scars are clearly visible (see figure 9). The erosion scar at the head of the Clapham approach is also considerably wider than it appeared in 1949, while the erosion scar from Swine Tail leading towards the walkers' shelter already approached its current dimensions. These areas of erosion were mapped for the first time by the RCHME in 1988 (Bowden, Mackay & Blood 1988) (see figure 11).
- 5.11 In 1994, Mitchell estimated that the summit of Ingleborough received c.120,000 visitors a year, many taking part in the 'Three Peaks Walk' (Mitchell 1994, 116). The origins of the 'Three Peaks Walk' lie as far back as the late 1880s and early 1890s, although as recently as the 1950s Mitchell described completing the route on faint grassy tracks without seeing any other walkers all day. The annual 'Three Peaks Race' was first organised in 1954, while an annual cyclo-cross race was established in 1961 (Johnson 2008, 235). The rise in popularity of the Three Peaks as a fund-raising or charity walk in recent years has brought visitors onto the summit in larger individual groups. The most recent visitor number figures gathered by the YDNPA show that between 1st April and 5th November 2011, 52,450 people were counted using the Chapel-le-Dale approach, as compared to 54,338 for the same period in 2010. Between 1st April and 5th November 2011, 5,241 people were counted using the Clapham approach, as compared to 18,620 for the same period in 2010. There are no figures for the Ingleton approach, but it is estimated that at least as many people use this route as go up from Chapel-le-Dale, and the total number of visitors in both 2010 and 2011 is likely to have either reached or indeed exceeded 100,000 (Steve Hastie, Area Ranger/Project Manager Three Peaks, YDNPA, *pers. comm.*).

EDAS Survey: Erosion (see figure 23)

The Perimeter

- 5.12 In 1988, the RCHME commented on the lack of vegetation cover to the perimeter structures on the east and north-east sides of the summit, but that elsewhere a thin covering of soil and some vegetation was providing some stability. The absence or presence of vegetation, particularly when these occur as isolated areas within larger stretches of the opposite form, are commented on in detail in the descriptive text of the perimeter above (see Chapter 3). However, generally speaking, the comments made by the RCHME in 1988 still broadly hold true, there being better vegetation and soil cover away from those parts of the perimeter which have a more complex built structural form. Nevertheless, even within these areas, by comparing photographs taken by the current survey with images held by the Yorkshire Dales National Park Authority dating from the mid 1990s, subtle

variations can be noted. For example, although the opposite might be expected, there are some parts of the perimeter that appear better vegetated in 2011 than they were in 1994. This could be due to a number of factors, including the reduction of grazing due to disturbance from increased visitor numbers, a change in the pattern of routes around the perimeter used by visitors, or even the influence of varying weather conditions on growth (Robert White YDNPA, *pers. comm.*).

- 5.13 As part of the EDAS detailed survey work, that part of the Section 2 perimeter bank which was recorded by the RCHME in 1988 at 1:100 scale was re-recorded at the same scale and using the same conventions. The recorded section measured a total of 27m long, and fell within the 'box-framed' part of the perimeter, where lines of stone 'throughs', internal divisions between larger and smaller-sized bands of stone, facing orthostats and drystone walling had been used to define structural sections. These structural elements have already been described in some detail in Chapter 3 above, and so the following description concentrates on the changes revealed by comparing the two surveys (see figure 24).
- 5.14 At the south end of the 1:100 scale survey area, there is a sub-rectangular length of bank measuring 4.50m long by a maximum of 4.50m wide at the south end but which narrows to 1.60m at the north end (**EDAS 2/4**). There is a single standing orthostat at the south-west 'corner' of the inner face; this was shown by the RCHME but it was not classed as a structural stone. However, a structural stone shown to the north-west 'corner' in 1988 has since disappeared. The RCHME also showed four *in situ* structural stones on the south side of the bank and eight on the east side - the EDAS survey recorded two and six stones respectively in the same places, but on the east side it is not clear if the stones have been removed or obscured by rubble slipping down from above. The internal structure visible in 1988, a core of smaller material surrounded by larger rubble, can still be seen. A small modern cairn off the north-west corner also remains unchanged. At the north end of this section, a gap or break of 1.50m occurs, although this is difficult to define in detail due to rubble which has now spread across it.
- 5.15 The south end of the next 12.50m long section (**EDAS 2/5**) appears to be c.2.00m wide and slightly rounded, the side towards the gap faced by a single orthostat, marking the change between more concentrated rubble and the scatter within the gap itself. Some 1.80m north of this rounded end, there is a transverse division, marked by several upright structural stones. The RCHME showed five thin stones forming this division in 1988, but only two now remain. On the north side of this transverse division, the width of the bank increases to 4.00m wide, and the RCHME recorded clear bands or further transverse divisions of smaller rubble and gravel-like material. The central band of smaller material remains visible today, but the flanking bands were obscured, covered by spreads of the larger angular rubble that forms the majority of the bank. Moving north, a modern U-shaped structure (**EDAS 2/6**) shown by the RCHME as built against the internal scarp of the bank and measuring c.3.00m long by c.2.00m wide has been largely removed, and is now visible in plan only [6/745] (see plates 46 and 17). The removal of this structure has exposed two of three very large facing orthostats here, the three largest adjacent surviving examples in the whole of the perimeter. However, when the modern structure was removed or subsequently, some rubble has been heaped behind one of the orthostats to form a new modern structure, essentially a small cairn. Beyond the two largest standing orthostats, two displaced structural stones recorded by the RCHME in 1988 are still present. Approximately twice as many structural stones are now visible around the north-east corner of this section of the perimeter bank as were shown in 1988. There is then a gap, slightly under

2.00m wide to the interior of the perimeter but splaying outwards slightly to the exterior.

- 5.16 Beyond the gap, the bank again has another sub-rectangular section, 7.80m long and 4.00m wide at the south end (**EDAS 2/7**), and again, more structural stones are now visible to the south side, but fewer to the east side, than were shown in 1988. A transverse band of structural stones is now not so clearly visible as was shown by the RCHME, and neither are the bands of smaller material to either side of this transverse division; as has already been noted, the gradual spread of the larger angular rubble is creating a loss of definition to the internal structure of the bank. A group of displaced structural stones to the north-west 'corner' have not moved since 1988.
- 5.17 Although not directly affecting the perimeter itself, a narrow but well established footpath [6/748] (see plate 47) runs north from the Clapham approach around the very edge of the summit below the perimeter, and then snakes around the eastern side of Swine Tail itself.

The Interior

- 5.18 The most significant area of erosion across the summit remains, as recorded in 1988, the very substantial scar leading west and then south-west from Swine Tail to the 1953 walkers' shelter (EDAS 7) (see figure 23). The RCHME's observation, that rain water washing down the slope towards Swine Tail was removing the thin sandy soil cover of the summit, remained true in 2011, leaving a large area to the immediate west of Swine Tail with little or no soil cover at all, and therefore preventing any vegetation from becoming re-established. At Swine Tail, the rutting caused by the erosion scar makes any interpretation of the remains here very difficult (Section 3), while erosion along the immediate south side of the perimeter west of Swine Tail (Section 4) has created the impression of edges or structures where there are almost certainly none; in October 2011, it was noted that stones immediately adjacent to this part of the perimeter were being deliberately broken [7/639]. This significant erosion scar has a maximum width of c.60m between two circular features (RCHME '14' and '17'). It has not increased significantly in width since 1988, although there is a new linking area of erosion running north-east from the south of RCHME '14' towards the main erosion scar.
- 5.19 As will be described in more detail below, a significant new area of cairn building recorded by the EDAS survey was that developing from the Clapham approach. This is developing in tandem with the extension of the erosion scar from the same approach. Although intermittent and, as yet, nowhere near as deep as that at Swine Tail, the scar extends at least c.40m further north-west into the interior of the summit than was marked by the RCHME in 1988 (see figure 23). In addition, on a field visit carried out in October 2011, a spread of rutting, c.5.0m wide and caused by mountain bike wheels, was present on approximately the same alignment, running north-west towards the walkers' shelter [7/634, 7/635, 7/636]. Conversely, the erosion associated with the Ingleton approach does not appear to have changed significantly since 1988.
- 5.20 It is quite clear from these patterns of erosion that the focus of those reaching the summit is firstly the 1953 walkers' shelter (EDAS 7), and secondly the adjacent Ordnance Survey trig point (RCHME 'a'). To reach these features, the erosion scars cross a number of the circular features previously recorded by the RCHME. The erosion scar from Swine Tail is causing four circular features (RCHME '14', '15', '16' and '17') to deteriorate, RCHME '15' particularly badly. If a new route

across the summit were to develop from the Clapham approach towards the shelter and trig point, it would potentially pass over or very close to two other circular features (RCHME '13' and '16'). RCHME '13' is still well preserved [5/601] (see plate 2) but RCHME '16' is already deteriorating due to pressure from the Swine Tail erosion scar.

- 5.21 Around the 1953 shelter itself, erosion is becoming more severe in a quadrant extending from the southern circular feature (RCHME '18') towards the perimeter, south-west towards the area of bonfire damage (RCHME 'p') and north-west as far as the hospice tower (EDAS 5) (see figure 23). As yet, it is not as significant as that erosion seen to the north-east of the shelter associated with the approach from Swine Tail, but it has the potential to become so. Within this general area of erosion, there are well-established routes which are affecting earlier features. One erosion scar leading directly south from the shelter to the trig point is eroding the western edges of two circular features (RCHME '18' and '19'). The erosion here is not only destroying earlier features which have already been recorded, but will also seriously affect the ability of any future archaeological survey to recognise any additional earlier features. For example, some 25m to the east of the walkers' shelter, there appears to be an oval 'ring' of flat stones (**EDAS 8**) resembling in size and form some of the orthostats which line the inner face of the perimeter [5/600; 6/754] (see plate 48); they appear to form a concentration of such material here, within an area of generally much smaller gritstone rubble. The 'ring' is c.3.00m across, and its surface is raised slightly above the surrounding ground surface. The degree of erosion around and across the feature makes it difficult to be certain if it is entirely natural or an early man-made feature, or the base of a former cairn or indeed a 'structure' which has been created wholly as a result of the summit erosion.
- 5.22 Although lying beyond the area covered by the EDAS survey, in 1988 the RCHME recorded a sub-triangular area of burning adjacent to the south-west corner of the perimeter (RCHME 'p') (see figure 12). A faint feature can be seen here on the aerial photographs taken in 1949 (CUCAP EL085 & 088), but it is very conspicuous on the 1985 aerial photographs (YDNPA HER ANY 220/03-04 & 211/26) (see figure 9). It is possible that this location was also used for bonfires during the 19th century, as fires lit on this side of the summit would have been visible from the more populated areas to the west and south-west.

EDAS Survey: Modern Cairns, Shelter Building and other Related Activities

- 5.23 The cairns and shelters recorded by the EDAS survey are described below, commencing with the perimeter, in the same order as given in Chapter 3 above (see figure 23). Those features away from the perimeter are then described in a logical sequence. It should be noted that the following text describes the summit cairns and shelters as they existed at the time of the final EDAS field visit (28th October 2011). Small cairns, sometimes comprising only three or four stones, appear and disappear on an almost weekly basis, and it is likely that many more will have been built during the period between the end of site visits and the production of this archive report.

The Perimeter - Section 1

- 5.24 Commencing at the south-west extent of the perimeter recorded by the EDAS survey (Section 1), arguably the first possible modern shelter to be encountered is located at the base of the external scarp, almost opposite a circular feature recorded by the RCHME (RCHME '2'). This shelter is sub-triangular in plan, 3.0m

long, comprising a wall face standing up to 0.5m in height (**EDAS 1/4**). The wall is of drystone construction, thinly coursed, with over five courses surviving. At the angle, there is a much more substantial base stone. Some of the wall is almost certainly modern, but it may re-use the lower part of an earlier structure [2/481; 6/771] (see plate 5); the longer, south-eastern, wall is arguably visible on one of the aerial photographs taken in 1949 (CUCAP EL084). Some distance to the north, 9.0m to the west of the internal scarp of the perimeter and adjacent to a gap in the bank (EDAS 1/10), stones have been pushed into the turf to spell out the letters 'I H Y', possibly once the question 'W H Y'. The same phenomenon can be seen further north again (within Section 2) and is quite different from the placing of stones on the surface to spell out names or letters. It may therefore represent an earlier form of visitor activity which has now fallen out of fashion.

- 5.25 Some 40m to the south of the Clapham approach, at the point where the perimeter swings markedly to the north-east, the RCHME recorded a modern cairn (RCHME 'm') (**EDAS 1/13**). This is clearly visible on the 1949 aerial photographs (e.g. CUCAP EL084; see figure 7, top), and it may well be the 6 foot high 'beehive' cairn noted by Ward in 1946-47, as the cairns closer to the Clapham approach had yet to develop by this date (see below). The cairn itself [2/462; 6/753] (see plate 11) still exists and is sub-oval in plan, measuring a maximum of 3.50m east-west by 3.00m north-south, and standing 1.10m in height, substantially less than the height given by Ward. It is formed from angular gritstone rubble, with some individual pieces up to 0.60m long. At the base of the south side, it may overlie much earlier *in situ* structural stones. It is not clear why the cairn should have developed here, as it does not lie close to an approach or footpath - might this suggest that it developed at an earlier date, perhaps as some kind of boundary marker or similar?
- 5.26 A short distance to the north-east, the RCHME marked a sub-rectangular shelter adjacent to the internal scarp of the bank (**EDAS 1/14**). This has since been demolished or dismantled, although the base is still visible in plan, measuring a maximum of 4.00m north-east/south-west by 2.40m in the opposite direction. There is no trace of a rubble scatter around the former shelter position, although a heap or cairn of modern rubble has been placed on the top of the large orthostats and bank directly opposite its position.
- 5.27 On the opposite side of the perimeter, at the base of the external scarp, there is a L-shaped structure, measuring 5.00m long by 2.40m wide [2/460; 6/769, 6/770] (**EDAS 1/15**) (see plate 12). In 1988, the RCHME marked the long wall as a modern structure, and the short wall as an older one. The long wall stands up to 1.00m in height, and incorporates a large upright triangular stone resembling an orthostat. The northern end of the long wall merges with the general slope of rubble marking the external scarp of the perimeter, while to the front, a sub-rectangular area appears to have been dug out, creating an enclosing spread bank. Taken together, this might suggest that the standing walls form the rear part of a small rectangular structure or building that was once located here, although its exact age is uncertain. A colour slide taken in April 1987 (YDNPA slide IH13) shows the long wall standing to approximately twice its 2011 height, and it survived to this height until at least August 1989 (YDNPA slide IH18). It may just be visible on one of the 1949 aerial photographs, but not convincingly so.
- 5.28 At the Clapham approach itself, there are two modern cairns, neither of which were present when the 1949 aerial photographs were taken. The largest lies immediately to the west of the perimeter, on the south side of the footpath scar here (**EDAS 1/17**) [2/452; 6/749] (see plate 14). It is sub-oval in plan, measuring a maximum of 4.80m north-south by 4.00m east-west - it stands up to 1.00m in

height and is built of angular gritstone rubble, the majority of which is less than 0.20m across. It has developed due to its proximity to the footpath and the size of most of the pieces shows that it is being created by people depositing small stones as they either reach or leave the summit. Comparison with an image taken in September 1994 shows that the cairn has not increased substantially in height since that date, but it has begun to spread north across the footpath scar (YDNPA slide IH26). To the south-east, there is a second modern cairn which was not identified or recorded by the RCHME (**EDAS 1/18**). This is located on the east side of the head of the prominent erosion gully which marks the point where the Clapham approach breasts the summit. It is sub-circular in plan, measuring a maximum of 2.40m in diameter and stands up to 0.80m high [2/451; 6/747] (see plate 49). It is composed of angular gritstone rubble, the majority of which is less than 0.30m across but there are some slightly larger pieces towards the base.

The Perimeter - Section 2

- 5.29 Within Section 2, and also within the 1:100 survey area, the RCHME recorded a U-shaped structure built up against the internal facing orthostats of this part of the perimeter bank (**EDAS 2/6**). A structure is arguably visible in this area on the 1938 aerial photograph (YDNPA HER WVC F2745), and Ward referred to a structure around here in 1946-47, but nothing can be clearly seen on the 1949 aerial photographs. The shelter has been demolished since 1988, but the plan form is still visible [2/440, 6/745] (see figure 24, and plates 17 and 46). An image taken in September 1994 shows the structure as L-shaped in plan, the southern side standing up to 1.00m high (YDNPA slide IH27). The removal of this shelter has revealed the prominent facing orthostats here (see above), but it appears that some of the stone from the shelter has been piled on top of the orthostats and the bank itself.
- 5.30 To the west of this former shelter position, stone rubble has been pushed into the turf to spell out the letters 'D r' [6/746], with a line of stones to the south. Further to the north, another U-shaped shelter that was not shown by the RCHME in 1988 had been built against the external scarp of the perimeter bank [1/406; 2/433] (see plate 50). This shelter was 2.50m long by 1.50m wide, with walls of roughly coursed rubble standing up to 1.10m high. This was pushed over at some point between November 2010 and March 2011, leaving a rubble spread.
- 5.31 Finally, in 1988, the RCHME showed a quite large sub-rectangular modern shelter running along the top of the perimeter bank towards the northern end of this section (**EDAS 2/11**) (see figure 12), but this had been almost completely removed by the time of the EDAS survey. However, it is clearly visible on an image taken in May 1998 (YDNPA slide IH68); a few occasional small piles of stone here (for example, see [6/744]) may represent the remains of this structure.

The Perimeter - Section 3

- 5.32 Within this section of the perimeter bank, there is a single, central modern cairn (**EDAS 3/3**) [1/402, 1/403; 6/743] (see plate 25); it can be seen on both the 1938 and 1949 aerial photographs (see figure 6, top). The cairn is sub-circular in plan, measuring a maximum of 4.00m in diameter and standing up to 1.20m in height. It comprises angular gritstone rubble, the majority of which is less than 0.30m across. The cairn sits on the south side of the wide Swine Tail erosion scar, and has developed as a result of people depositing small stones as they either reach or leave the summit. To the west of the southern end of the gap, a rectangular area

of compacted stones probably represents a former modern cairn (**EDAS 3/2**) [1/404].

The Perimeter - Section 4

- 5.33 Within Section 4, there are two modern shelters on the south side of this part of the perimeter bank [1/383] (see plate 29). The east shelter (**EDAS 4/2**) is 2.00m square, stands 1.00m high and has an almost igloo or beehive-like form, with a stepped roof over the hollow interior [1/400]. It can be seen on the 1938 aerial photograph (YDNPA HER WVC F2745) (see figure 6, top), when it appears to have been substantially taller, and formed the 6 ft-6ft 6 ins cairn on a heavy base of possible original wall described by Ward in 1946-47. It is also visible on the 1949 aerial photographs, but by May 1995 it had assumed the form it had at the beginning of the EDAS survey (YDNPA slide IH51). At some point between April and October 2011, the upper part was pushed over and apparently spread around the surrounding area. This action revealed what appears to be an earlier drystone wall face, supporting Ward's description of 1946-47 [7/637, 7/638] (see plates 30 and 31).
- 5.34 The west shelter (**EDAS 4/3**) is sub-rectangular in plan, measuring 2.80m by 2.00m, and with walls standing up to 0.70m high. It cannot be seen on the 1949 aerial photographs, but it was present by May 1995, when it was a L-shaped structure, standing 0.70m high (YDNPA slide IH50). The south wall incorporates an *in situ* orthostat, as does the west wall. As previously noted in Chapter 3 above, the latter is probably the largest surviving *in situ* orthostat in the entire summit structure, measuring 1.30m by 0.40m and standing 0.40m high [1/399]. At some point between mid January and the beginning of March 2011, this shelter was destroyed. Whilst this action has revealed the orthostat to a greater extent than before, the shelter was pushed over rather than being dismantled and removed [4/562, 4/563] (see plates 32 and 33). This has led to the modern material being spread over and mixed in with the remains of much earlier structures, blurring the boundaries between the two.

The Interior

- 5.35 Perhaps the most significant new area of cairn building recorded by the EDAS survey was that developing in tandem with the extension of the erosion scar from the Clapham approach. A new line of small cairns is developing along and beyond the extension to the erosion, in a direct line of site towards the 1953 walkers' shelter (EDAS 7).
- 5.36 A small modern cairn (**EDAS 9**) is located c.42m to the north-west of the large modern cairn described above to the south of the Clapham approach erosion scar (EDAS 1/17). This cairn is sub-oval in plan, measuring a maximum of 1.50m long and standing 0.30m high [6/750] (see plate 51); it is composed of small angular gritstone rubble, the majority of which is less than 0.20m across. Approximately 23m to the north-west of this, there is another small modern cairn, where four or five stones have been used to prop a slightly larger stone upright [6/751]. This cairn was first noted in April 2011, and a subsequent visit in October 2011 noted that it was somewhat larger [7/632]. In addition, five stones had been placed in a line running south-east from this cairn towards the Clapham approach [7/633]. Approximately c.23m to the north-west again, there is yet another small cairn comprising three or four stones set on top of one another [6/752]. These two latter cairns were dismantled during the course of the EDAS survey work (October 2011) as, although small, they have the potential to 'legitimise' a new route across the

summit directly towards the 1953 shelter. This route would potentially pass over or very close to two of the circular features previously recorded by the RCHME (RCHME '13' and '16'); the latter is already badly affected by erosion from Swine Tail scar.

- 5.37 The circular and sub-circular features in the interior recorded by the RCHME have been far less seriously affected by cairn building than they have by visitor erosion. At the start of the EDAS survey work in October 2010, one circular feature on the north side of the summit (RCHME '17') had the name 'SUE' spelt out in stones, surrounded by a ring of stones [1/385, 1/386]. This was subsequently removed but by March 2011 an oval cairn of similar dimensions had re-appeared. One of the semi-circular features to the south (RCHME '16') had a small cairn, 1.00m in diameter and 0.30m high, developing on its north-east tip.
- 5.38 Away from the main approaches, the other focus of modern cairn building on the summit, as might be expected, lies around the 1953 walkers' shelter (**EDAS 7**). Many of these cairns are presently low, no more than one or two stones in height, and very small, but they are nevertheless examples which are becoming established. Approximately 18m to the north of the shelter, there is a cairn 1.00m in diameter, with a slightly larger example, 1.50m in diameter, some 3m to the west [6/756, 6/759].
- 5.39 What might happen if these cairns become established is demonstrated by the very much larger modern structures to the south and south-west of the 1953 shelter. On the east side of the large cairn to the south of the 1953 shelter (**EDAS 6**), there is a large ring-shaped modern cairn or shelter. This was not recorded by the RCHME in 1988, although they marked the cairn as being modern; it is not clear if they were referring to the cairn itself or to modern structures then existing upon it. The modern cairn/shelter is between 3m-5m across, and it stands up to 0.70m high [6/757, 6/758] (see plate 52). It does not consist of built drystone walling (although there are places where the rubble is roughly coursed) but rather linear heaps of angular gritstone rubble, the majority of which is less than 0.20m across. Some 6m to the south-west of the large cairn, and c.20m north of the trig point, there is also a low sub-circular cairn c.2.00m in diameter [6/760] (see plate 53).
- 5.40 As has already been noted in Chapter 4, the hospice tower ruin (**EDAS 5**) has a small modern cairn built on its summit (see plate 41); this was much larger in September 1994, apparently sub-square in plan and with drystone walls (YDNPA slide IH42). At times during the EDAS survey, this cairn also included painted stones, bricks with inscriptions written on them and plastic flowers; cremated ashes have also been noted in the vicinity of the tower. Comparison with an another image taken in September 1994 indicates that although many of the structural stones that were then visible remain *in situ* today, loose material around the sides of the tower ruin has changed greatly (YDNPA slide IH41). In terms of the movement of material, the larger size of the remaining structural stones within the tower has discouraged widespread disturbance. However, some of these stones are still being moved. There is a spread of such material to the east of the tower ruin, and one stone, recognisable by its distinctive curved shape, had reached a point 6.00m north of the 1953 shelter by April 2011 [6/755].
- 5.41 More significant in terms of impact on the tower ruin are the shelters which have been built to the south-west of the structure. In 1988, the RCHME recorded a curvilinear wall line extending south-west from the tower ruin, with a detached modern cairn to the west (see figure 12), but these structures have changed

considerably in the intervening 23 years. The curvilinear wall shown by the RCHME now extends for c.4.00m beyond the south-west edge of the rubble spread associated with the tower. It is up to 0.70m wide at the base with a tapered profile, stands 0.70m high, and is formed from angular pieces of gritstone rubble up to 0.50m across [6/764] (see plate 54). A similar wall line, slightly better coursed, runs west from the curvilinear wall towards the position of the cairn marked by the RCHME. This has now been incorporated into a wall returning to the north for a further 4.00m-5.00m. At its northern end, the wall has a T-shaped plan, with small rectangular enclosures being formed to the east and west [6/762, 6/763]. That to the west is quite well built, with coursed stone, including some pieces over 0.60m long. The size and shape of these larger stones strongly suggests that they are being taken off the tower ruin itself. Two small oval cairns, both just over 1.00m in diameter, are also developing to the north of the modern structures built onto the hospice tower ruin [6/761].

6 DISCUSSION

Introduction

- 6.1 As has already been stated in Chapter 1, the primary purpose of the EDAS survey was to guide and support the understanding and long-term management of the archaeological remains on the summit by the YDNPA, and to provide a detailed record of parts of these remains in the event of their continued deterioration. It was never the intention of the survey that the archaeology/history of Ingleborough should be re-written or rethought. Nevertheless, the amount of new survey information that has been generated, together with recent works produced on the complex multi-period landscape of which Ingleborough forms part, clearly demonstrate that a new published account, enlarging on that given by Bowden *et al* in 1989, is desperately needed. The discussion offered below therefore attempts to make a start on this process, but no more than that. A necessary part of a new published account, not attempted below, would be to begin to compare the landscape of the Ingleborough massif, and features forming part of it, to other similar large scale landscape surveys in northern England (for example, Hunt & Ainsworth 2010). The importance of the works undertaken over the past 10 years on and around Ingleborough needs to be highlighted to an audience beyond Yorkshire, a process which may hopefully produce comparable and/or contrasting material from other parts of Britain. Finally, wider dissemination even within Yorkshire would be useful, as it is evident from the material read for this report that in the recent past different fieldworkers have been surveying the same areas of the same landscapes; whilst the re-interpretation of previous surveys is a vital element in advancing understanding, repetition of basic fieldwork that has already been done is arguably a less valuable use of time and resources.
- 6.2 A discussion of the results of the EDAS survey must, necessarily, be preceded by a number of caveats. Given that some fieldworkers suggest that activity on the summit may date back as far as the Neolithic period (and there is still currently no secure dating for any of the remains on the summit that predate c.1800), one has to acknowledge the difficulty of discriminating between natural or geological features, the natural or geological features regarded as significant by humans but not enhanced in any way, the natural or geological features enhanced by human activity, the wholly man-made features, and the man-made features that have assumed a natural or geological appearance through decay. There is also a need to understand not just how something was built, but also how it decays and falls apart, and additionally to be aware how relatively modern structures can assume deceptively ancient appearances; for example, at Scotland Farm near Hawnby in North Yorkshire, small oval structures with a raised centre that might have formed ring cairns within a larger cairnfield bore a distinct similarity to disused stock-feeding positions in the vicinity (Dennison & Richardson 2011). This process is exacerbated on Ingleborough by the ongoing erosion, disturbance and cairn building, a problem not unique to this location but surely present here in its most severe manifestation within the National Park area.
- 6.3 With these caveats in mind, the discussion below takes the form of a series of general questions relating to prehistoric activity on the summit; at the end of each section, further secondary questions are posed which draw on the material discussed. However, the one question that is not asked is whether the summit remains are those of a defensible structure like a hillfort or an enclosure with some other social, religious or ritual purpose. This is not done through a lack of confidence in an ability to make meaningful statements (Johnson 2007, 119), but rather because the available evidence precludes definitive conclusions as to what

Ingleborough was, even before one considers that usage may have been modified and developed over an extended period without necessarily leaving much or many physical traces. The question is also unhelpful; division into different camps of opinion, such as has taken place in castle studies regarding defence versus status, has arguably served to stifle co-operation and the nuanced understanding that can result from it. Robert Higham has recently commented in relation to the development of castle studies that it remains to be seen whether by 2050 “the subject will have taken off in new directions or whether its practitioners will still be arguing about problems identified in late Victorian England” (Higham 2010, 11). It is hoped that the latter will be avoided as regards Ingleborough.

Question 1: What form did the Perimeter Structure Take?

- 6.4 It has been noted in Chapter 3 above that the overwhelming majority of the stone used in the construction of the perimeter structure is gritstone, with some sandstone flagstones present but in a very much smaller numbers. It is assumed that much of the stone was obtained from scree fields immediately below the summit and so brought onto the top, with some material also obtained from the quarry scoops occurring within the perimeter. However, it is also possible that some quarrying was undertaken to obtain stone, and it has been suggested that the large hollow to the immediate east of Swine Tail results from quarrying, rather than being a rotational slump (David Johnson, *pers. comm.*).
- 6.5 As Luke (2003; 2009) has catalogued in some detail, and has been described within the EDAS survey area in Chapter 3 above, the surviving perimeter structure varies markedly around the edge of the summit. The most prominent surviving lengths, those running c.60m south and c.80m west of Swine Tail (Sections 2 and 4 of the EDAS survey), have received the most attention in previous accounts, and so these are dealt with first. When discussing the form and construction of these sections, in the light of the EDAS survey work, a useful starting point is the suggested reconstruction of the north-west part of the perimeter published by King (1987) (see figure 10), itself heavily dependent on the interpretation of stone ramparts excavated at the Iron Age hillfort at Preist in Germany (Luke 2003, 27). King depicts the drystone wall which forms the external face of the perimeter, pierced by the upright stones, slabs or ‘throughs’, first documented by Farrer in 1853 (see figure 5). These latter ‘throughs’ formed the outer edge of transverse lines of stones which run through the main body of the rampart. They appear to run as far as, but not to pierce, the rear or internal face of the perimeter, which is faced or supported by orthostats, some of which are very substantial. The spaces between these structural features were filled with stone rubble. King argued that the transverse lines of ‘throughs’ were to provide stability to the largely rubble interior in order to support an internal wall-walk, and were essentially the stone equivalent of the timber lacing that is sometimes found in other hilltop enclosures and hillforts, an argument repeated again more recently (King & Simpson 2011). Bowden, Mackay and Blood (1989, 270) thought that the transverse lines did not strengthen the perimeter as timber lacing would have done, and were more cautious in their statement that they might counter lateral movement of the rubble core generated by a wall-walk. Other possible functions suggested were to facilitate drainage, or that the transverse courses were non-functional imitations of timber building traditions.
- 6.6 The EDAS survey indicates that the first step in the construction of Sections 2 and 4, as they exist today, was the provision of large base stones, most prominently and perhaps only ever to the external face of the perimeter. At the south end of Section 2, where the upper parts of the perimeter structure have been removed or

decayed, two parallel lines of external base stones are visible (e.g. EDAS 2/2). This arrangement is reminiscent of the parallel lines of 'stabilising stones' exposed during the excavation of the outer rampart of Brough Law hill fort in Northumberland, possibly constructed during the 3rd century BC (Jobey 1971, 73-85). On Ingleborough, it is assumed that these base stones may have been cut or slightly terraced into the ground surface; if this was the case, then it is important, as excavation could reveal a stratigraphic relationship with any earlier perimeter structure which might have existed here. In at least one location, at the very north end of Section 2, just south of the Swine Tail gap, a direct structural relationship can be seen between the base stones and the external drystone wall face which is built off them (EDAS 2/11).

6.7 Following the placing of the base stones, the next phase of construction was what might be termed the 'frame' of the perimeter structure, comprising the external drystone wall, the internal orthostats and the transverse 'throughs'. Visible surviving examples of the latter which pierce the external drystone wall, first recorded by Farrer in 1853, are now very scarce. The EDAS survey recorded three definite surviving examples, two to the west of Swine Tail gap in Section 4 (EDAS 4/1 and EDAS 4/5) and one to the south in Section 2 (EDAS 2/10) (see plates 22, 28 and 36); there are several other possible examples within both these sections. It is difficult to assess just how characteristic a feature they once were, or how widely they were distributed, although oral evidence suggests that a higher number of definite examples were visible in the past (David Johnson and Yvonne Luke, *pers. comm.*). The throughs piercing the external drystone wall must have been secured by building a section of wall, setting the upright stone or slab against it, and then continuing the wall to the other side, thus holding them in place. This has made them particularly vulnerable to decay or disturbance; one of the examples to the west of the Swine Tail gap (EDAS 4/1) has lost the external stone wall on its east side, making it unstable and likely to either fall over or be more easily removed. It is not certain exactly how high the external drystone wall face originally was, although there is some surviving evidence that might suggest a maximum height. It is now difficult to find any sections that stand higher than 0.90m or about 3ft, and most are less than 0.50m, although obviously the rubble spread making up the external scarp of the perimeter bank is considerably higher than this in places. Previous descriptions, such as the one published by Ward in 1947 in the *Sheffield Clarion Rambler*, describe the standing wall face being up to 4 feet 6 inches (1.98m) in height.

6.8 In addition to the transverse lines of throughs which can be seen to pierce the external drystone wall, there are many others which do not. The RCHME noted that there were further apparent internal transverse divisions to the rampart, comprising distinct areas or banding of much smaller and compacted angular rubble than was used elsewhere as infill. These patches of compacted smaller rubble can be seen over almost the whole of the c.350m perimeter length recorded by the EDAS survey, but they become more extensive as one moves south-west around the summit. It is thought that these patches of smaller rubble may reflect what was geologically available locally, as the larger gritstone rubble would not break down into the smaller material as a result of weathering over the several thousand years that the perimeter structure has existed (David Johnson, *pers. comm.*). The EDAS survey has noted that within Sections 2 and 4, closer to Swine Tail, there are also transverse divisions which are defined by lines of larger pieces of rubble placed horizontally, rather than vertically. The various transverse lines are not set at absolutely regular intervals, but where they can be measured, they are generally not much more than c.2m apart and so are relatively closely spaced given the length of the perimeter structure. Towards the west end of Section 4,

and the south end of Section 2, there are apparent divisions into blocks c.4m long. The RCHME suggested that the transverse lines were unlikely to have risen above the lowest levels of the perimeter structure (Bowden, Mackay & Blood 1988), and this seems likely, although towards the north end of Section 2, there are transverse drystone wall faces which appear to do just this.

- 6.9 The orthostats which line the inner face of the perimeter bank, even though they survive only intermittently, are probably the most widely distributed feature to the west and south of Swine Tail, and indeed around the entire length of the existing perimeter structure. They are however noticeably larger around the north-east part of the summit, and some are very substantial indeed, measuring up to almost 1.00m square and up to 0.40m wide. Again, as with the external drystone wall, it is uncertain exactly how tall this orthostatic facing once was. It is difficult to imagine how another course of orthostats could be balanced on top of the existing largest examples, and so perhaps it had a maximum height of about 1.00m or 3ft. However, it might have been taller if the rubble core of the perimeter bank was heaped up to a battered profile, and then a second course of orthostats laid against it. The orthostats have also been used to define gaps or breaks in the perimeter, and these will be discussed in more detail below.
- 6.10 It is quite possible that, even within Sections 2 and 4, what survives now on Ingleborough may represent only the lowest part of what was once present, and that this lower part was of less importance to the builders than what rose above it. In 1988, the RCHME noted possible evidence for longitudinal, as well as transverse, divisions to the perimeter, and this remains visible. In several lengths (particularly within Section 4), up to 8.00m long, the external drystone wall rises vertically, and is then intermittently surmounted by large flat stones. Behind these stones, the perimeter's external face is relatively level for a width of about 1.00m (wider in other places), and it then rises again as a steep rubble scarp, forming the north side of a raised, slightly sinuous, bank of rubble (e.g. EDAS 4/4 and 4/6). Within these lengths, the combined structural evidence suggests that there was a wider base to the perimeter, up to 6.00m across, which rose to between 1.00m-1.50m above the natural ground surface, and then stepped inwards both externally and internally. A narrower rubble bank or wall, between 1.00m-2.00m wide, perhaps rose off the wider base. The original height of this upper bank or wall is again uncertain, but it might have been substantial; one should bear in mind that an 18th or 19th century drystone field wall on a base only 0.90m or 3ft wide can commonly rise to 6ft or more, and there may of course also have been wooden elements to the upper part which are now lost. However, one would not wish to give the impression of a structure that was overly regular in form. For example, the 6.00m base width is not a constant. To the west of Swine Tail, within Section 4, there are several places where the width narrows to just over 2.00m, and this might indicate that the external face stepped in and out, rather than being a continuous straight line. Several reasons could be suggested for this - it may have improved stability, the wider parts acting somewhat like buttresses, or it may have been done for visual effect, as is explored more fully in the discussion of viewing below. Additionally, the surviving parts might indicate an upper rubble bank which is rather sinuous and curvilinear.
- 6.11 The point that all of the main characteristics described above (i.e. the external drystone wall, the transverse lines of stone, and the internal orthostatic lining; see figure 25) have been found individually elsewhere, but only in this particular combination on Ingleborough, has been made before (Bowden, Mackay & Blood 1989, 270). The combination of an external drystone wall and an inner facing of orthostats or slabs appears to have been present to the inner rampart of Kaimes

Hill fort in southern Scotland (Gordon Childe 1940), while at Conway Mountain hillfort in North Wales, a combination of irregularly laid stone and upright slabs was used to face the same side of one part of the rampart; the variation here was suggested to derive from the accessibility of materials, the large slabs occurring close to outcrops (RCAHMW 1956, 70-73). Also in North Wales, on Angelsey, the Din Sylwy hillfort had an outer wall or rampart faced with large limestone slabs set on edge - there was sometimes a second parallel line of slabs behind the outer face, and in several places slabs appear to form transverse lines through the rampart (RCAHMW 1937, 81-83). In northern Scotland, at Duchary Rock fort, possible examples of a 'framed' construction with upright slabs forming the transverse courses were noted during a field visit in 1990, and these were suggested to resemble those at Ingleborough (<http://canmore.rcahms.gov.uk/en/site/6535/details/duchary+rock/>), while at the unfinished Cnoc an Duin hillfort, also in northern Scotland, a similar feature was observed in one section of the rampart (<http://canmore.rcahms.gov.uk/en/site/13710/details/cnoc+an+duin/>). There are undoubtedly other examples which could be discovered through further research, both in published literature and site archives; for example, photographs taken during early excavations at Almondbury hillfort, near Huddersfield in West Yorkshire, show examples of orthostatic facing which were unearthed (Yvonne Luke, *pers. comm.*). Given the number of potential comparable examples of stone ramparts or perimeter constructions that exist, it is hard to understand why those at Ingleborough continue to be likened to the stone equivalent of timber lacing, particularly when dates are then provided for timber-laced ramparts (King & Simpson 2011, 27).

- 6.12 At the very western end of the EDAS survey area, in Section 4, the nature of the perimeter structure changes. Over the length of Section 4, and particularly across the western half, the perimeter as a whole becomes less prominent, with less upstanding drystone wall facing, and fewer and smaller orthostats. Nevertheless, the change in average width and the number of orthostats present at the west end is quite marked (EDAS 4/11), and the perimeter continues north-west as a spread bank of stone rubble c.3.00m across. A similar reduction in prominence can also be observed from the south end of Section 2 (EDAS 2/2), although for about 30m south-west of the erosion scar created by the Clapham approach, the surviving remains indicate that the perimeter here was still substantial.
- 6.13 It is beyond the Clapham approach scar, within Section 1 of the EDAS survey area, that what is in some ways the most interesting and complex part of the perimeter commences, principally because other structures begin to appear both inside and outside the main bank. Shortly after the point where the perimeter angles to the south, there is a rather curious section where transverse grassed banks alternate with spreads of bare rubble (**EDAS 1/10**). Below, and to the south-east, there is a pair of sub-oval depressions, defined by banks which appear to be composed of quite hard packed stone. The southern of the pair is quite well defined but the northern appears to be partly infilled by material slumping into it from the perimeter above. There is almost certainly a third example some 45m to the south-west, again apparently infilled by rubble falling from the perimeter above. The RCHME suggested that these depressions were perhaps best understood as external quarry scoops, but this is not convincing, as they are quite unlike the internal quarry scoops seen elsewhere in Section 1. They are also located much closer to the edge of the natural scarp than most of the other perimeter structures here, where there is a 4.00m-11.00m wide berm. It is possible that these depressions represent later structures attached to the external face of the perimeter, although one cannot wholly dismiss a relationship with early visitor erosion, as the earliest aerial photographs show that in the mid 20th century footpaths generally went

around the summit rather than across it. To the south-west, although there is virtually no visible drystone wall facing to the exterior, the external scarp of the perimeter bank reaches its greatest height within the EDAS survey area, standing up to 2.30m high, and the whole having a width of as much as 7.50m (EDAS 1/3). Differences in vegetation may indicate that only the upper half of the 2.30m height is 'structural', with the lower half representing fallen material, but if the scarp was of this height then some rubble revetment or stepping might be concealed within.

- 6.14 Despite the marked differences in the constructional form of the perimeter bank around the summit, it is not possible to confidently assert a relative chronological relationship between them. For example, at the west end of Section 4, although the change in the form of the perimeter is marked and occurs over a short distance, there is no convincing evidence that the simpler form to the west is overlain by the more complex form to the east. However, one of the few opportunities for suggesting a relative chronology of construction is provided by the quarry scoops recorded within Section 1, and those further to the west. Although these scoops have recently been described as "an internal occasionally causewayed ditch" (Luke 2012c, 30-31), the EDAS survey does not support this interpretation. The scoops are not sufficiently continuous to be described as a ditch, nor does their relationship to the bank suggest this function; they are best thought of as a series of conjoined individual features. In the central part of Section 1, there are three conjoined sub-circular scoops or depressions (behind EDAS 1/6 and 1/7). It appears that each cuts the other, the smaller southern one cut by the central, and the central one cut by the northern one. The construction of the adjacent bank bears some relationship to these quarry scoops, in that there are subtle transverse lines and in some cases actual gaps aligned with apparent breaks in the quarry scoops. This suggests that each scoop was used to build the corresponding length of the adjacent bank, with some transverse reinforcement at the junction of each section. The same pattern may be present further to the west, beyond the EDAS survey area. If there is a relative chronology to the quarry scoops, then there is also one to the bank, indicating that, at least within the south-east and southern parts of the perimeter, construction may have been in an anti-clockwise direction. Another relative chronology of construction may be suggested by the spatial relationship of the quarry scoops and some of the internal circular features. Several of the latter, most notably RCHME '1', '2' and '9' on the southern edge of the summit, lie very close to quarry scoops. Does this imply that they had perhaps become sufficiently unimportant or had even fallen out of use so that it was thought acceptable to quarry material right up to them? Excavations at other hillforts/hilltop enclosures (for example, RCAHMW 1956, 72-73; Gordon Childe 1940, 497) have proved that internal hut circles and other circular features are either earlier than, contemporary with, or later than the main perimeter/rampart structure.
- 6.15 Another feature pertinent to the chronological development of the summit, but lying outside the EDAS survey area, was noted by Luke. Some aerial photographs show an irregular sub-circular shape with a maximum diameter of c.45m at the north-west corner of the summit, with flattened sides partly emphasised by darker flanking lines; evidence for the presence of this feature was also recovered through geophysical and micro-topographical survey (Luke 2003, 41-44). Aerial photographs were also suggested to show a possible trackway leading out of the south-east corner of the feature and then following a slightly curving trajectory towards a gap in the perimeter structure and down a natural ramp. In relation to the sub-circular feature, Luke pointed to the then recent recognition of the existence of pre-Iron Age embankments on northern hills of the Neolithic period, the possibility that a later perimeter might have partly enclosed an earlier structure,

and that there may have been a tripartite use of the summit area which produced the differences in the form of the perimeter (Luke 2003, 44 & 48). Following on from the latter, it is noticeable that the circular and semi-circular features recorded by the RCHME on their 1:500 scale summit plan do not extend east beyond what is assumed to be a natural scarp reflecting the underlying gritstone of the summit [3/643] (see figure 12). The scarp is marked by the RCHME as extending for c.50m on a north-west/south-east alignment from the north side of the summit, but in optimum light conditions it can arguably be followed further south-east. The scarp leaves the perimeter at the west end of Section 4 of the EDAS survey area, at the point where the form of the perimeter changes markedly. If the scarp does continue south-east, did it curve around to meet a corresponding point in Section 1 where the perimeter changes angle to follow the edge of the summit? The change in the form of the perimeter to either side of this latter point is nowhere near as marked as that at the west end of Section 4, but the perimeter structure does begin to increase in complexity to the north-east of here in the direction of Swine Tail.

6.16 Therefore, within the broad parameters of Question 1 (what form did the perimeter structure take?), and using the information detailed above, a number of subsidiary queries can be proposed:

- What does the differing form of the perimeter around the summit signify in terms of chronology? Are the more structurally complex sections a later development of the earlier simpler sections, or are they in fact all contemporary, the differing complexity having a functional rather than a chronological origin?
- Was it originally planned for the whole of the perimeter to resemble the most complex sections seen towards the north-east corner, with the simpler sections merely representing a 'laying out' or a preliminary phase? And if this was the case, would it imply that Ingleborough was never 'finished' as the builders intended?
- If the evidence noted by the EDAS survey is correct, and construction did proceed in an anti-clockwise direction around the summit, is it significant that the perimeter structure becomes more complex towards the north-east corner, i.e. in the same direction if one is moving in an anti-clockwise manner from the southern part of the perimeter?
- Why should comparisons continue to be made between Ingleborough and timber-laced structures? Surely further comparisons should be sought between possible contemporary stone-built structures, whether hilltop enclosures or not?
- What is the relationship between the edge-of-summit circular/semi-circular features and the perimeter?
- What role did the pre-existing natural form of the summit play in the design of the perimeter, and how was the internal space organised or utilised?

Question 2: Where are the Gaps in the Perimeter and What are They For?

6.17 Even modern published accounts make statements about the perimeter structure on the summit which are not strictly correct, or which over-generalise. For example, Bowden, Mackay and Blood (1989, 267) state that the whole of the summit, except for a protruding spur at the north-east corner, is surrounded by a

stone built rampart - but their own superb survey shows that there was no perceptible perimeter structure around much of the north-west part (see figure 13). Similarly, King and Simpson (2011, 27) make reference to “the construction of the perimeter wall around the six hectare plateau”. The substantial gaps in the perimeter structure, and the areas where it is ‘absent’ or ‘missing’, are arguably as important as the surviving parts, and these are discussed below.

- 6.18 Gaps in ramparts and perimeters surrounding hilltop enclosures have been remarked on for some considerable time. Collingwood’s 1937 plan of Carrock Fell hillfort in Cumbria (Collingwood 1938) shows gaps in the perimeter of varying size and distribution, not unlike those recorded at Ingleborough (see below). In 1940, Clark drew attention to what were then generally described as ‘unfinished hill forts’ (Clark 1940, 86-89). At the time, their unfinished appearance was thought to suggest a ‘rearmament programme rendered superfluous by circumstances’; they were built quickly over a limited time period and were often never completed before circumstances rendered them unnecessary. They were then abandoned, until the next rush of activity remodelled or updated them in some way. However, Clark was prescient enough to comment that “the probability is that no one explanation will suffice for all our hill forts” (Clark 1940, 87).
- 6.19 Any understanding of the gaps within the perimeter of Ingleborough is complicated by the fact that there appear to be several different types. The gaps or breaks were first recorded by Farrer in 1853, with seven or eight of varying sizes depicted in different positions around the perimeter (see figure 5). A good example of one of the larger gaps is that seen toward the east end of Section 4 (between EDAS 4/3 and 4/4). This gap was shown by Farrer in 1853 and described by Ward in 1947, and it is c.15m in length. The east side is partly defined by a very substantial *in situ* transverse orthostat, formerly obscured by a modern shelter, demolished between January and March 2011 (EDAS 4/3). On the west side of the gap, the perimeter resumes as a spread bank of stone rubble (EDAS 4/4); the east end of this bank is slightly rounded and made up of smaller material, and may butt or be heaped up against a partly visible transverse line of stones. There is no surface indication within the gap that the perimeter bank was ever present here or that it has been subsequently removed, while the presence of the transverse orthostat to the east side suggests that the gap was a planned and deliberate feature. In low winter sunlight and frosty conditions, a very shallow scarp may be visible running across the gap, approximately in line with the perimeter structures to either side, but this scarp could easily have resulted from modern erosion or natural weathering of the summit surface here. The gap is positioned opposite the very steep north-facing slope forming part of the Devil’s Gulch landslip and The Arks, and it opens out onto a berm of relatively level ground varying between 2m-4m wide, although this width increases to as much as 8m further west where gritstone outcrops are present.
- 6.20 Most of the gaps or breaks in the perimeter (excluding those associated with entrances, which are discussed separately below) are much smaller than the example described above. For example, at the west end of Section 4, there are several breaks no more than 2m wide, their edges partly marked or defined by larger stones. Within the north part of Section 2, there are at least three breaks, again averaging 2m wide, which appear to be deliberately built, defined either by orthostats or by the transverse drystone wall facing which occurs only here. Unlike the larger gap described above, these narrower gaps might have been bridged by either stone or timber, and therefore may not have risen the full height of the perimeter structure. Apparent gaps or breaks of 2m width or less are present throughout the remainder of Section 2 and the whole of Section 1. Within the

latter, they are sometimes aligned on breaks between quarry scoops, and therefore appear likely to result from the constructional technique being employed here.

- 6.21 Within Section 1, there is some of the most convincing evidence recorded by the EDAS survey that parts of the perimeter were deliberately destroyed or disturbed prior to the advent of modern tourism/erosion. Towards the south-west end, there is a gap or break as much as 4.5m wide (EDAS 1/6). Within this gap, there is a line of five thin orthostats and other stones of smaller size which appear to define the former inner face of the perimeter bank. The orthostats now stand proud of the ground surface, suggesting that the bank behind them has been deliberately removed. A number of scarps and spreads of rubble downslope also suggest digging out and disturbance. Some 48m to the south-west of this location, parallel linear depressions give the appearance that the perimeter bank has been 'dragged out' (EDAS 1/1), while c.50m to the north-east, the aforementioned alternating rubble/grassed transverse features could have been produced by the same activity (EDAS 1/10).
- 6.22 The gap in the perimeter which has attracted the most previous comment is that in the north-east corner, at Swine Tail (Section 3). In 1853, Farrer showed the 'gap' as being filled by a wall or bank, set on an acute north-west/south-east alignment, with the appearance of truncating the north-west part of the summit (see figure 5). In the accompanying text, Phillips (1853, 28) stated that the "wall is remarkably low for about 30 yards at the north-east, and there the hill runs into a sort of natural bastion". However, the interpretation of what now survives in this area is difficult for a number of reasons. Farrer's plan is sometimes at odds with the surviving remains elsewhere on the summit; for example, he shows the perimeter structure as continuing right around the north-west edge of the summit, an area where there is often little evidence that a bank was ever present. The whole of the Swine Tail area is now heavily eroded by walkers, the erosion having a tendency to create 'lines' of stones or 'edges' where there may actually be none. Finally, the weathering of the summit's gritstone cap may also have been influential in how this area now appears. Nevertheless, there are a number of large flat stones on the same alignment as the wall shown by Farrer in 1853; particularly beneath the modern cairn in the centre of this area (EDAS 3/3) and to the north-west, their form resembles a built structure, and it is thought that a wall or bank was once present here. If, as outlined in Chapter 3, the 'half circle' of orthostats at the north-west end of the gap (EDAS 3/4) is actually the denuded remains of a section of the perimeter, then the 'gap' crossed by this wall/bank was c.40m long. The original form of this wall/bank is, in the absence of any further documentary or pictorial information, a matter for speculation, but it is worth noting that if one were to strip away all but the lowest elements of the perimeter bank within Sections 2 and 4, and then run tens of thousands of people across it every year, a line of flat base stones not unlike those seen at Swine Tail might result.
- 6.23 The former presence of the perimeter across the Swine Tail 'gap' of course begs many further questions. If the Swine Tail perimeter was later than the lengths to either side, then when was the gap infilled and why? Alternatively, if the perimeter was contemporary with those lengths on either side, then when was it removed and why? In relation to the latter question, it must surely be significant that the Swine Tail 'gap' appears to correspond approximately with the elongated strip of Newby township shown crossing this area on the 1851 Ordnance Survey 1st edition 6" map (see figure 4). It seems highly likely that the 'gap' was created when these township boundaries were laid out - if the perimeter structure had been left in place, it would have effectively cut off that part of Newby township which lay to the north-east.

6.24 Within the broad parameters of Question 2 (where are the gaps in the perimeter and what are they for?) therefore, and using the information detailed above, a number of subsidiary queries can be proposed:

- The orthostatic lining of many of the gaps/breaks must indicate that they are planned elements of the perimeter, but what purpose did they serve? Gaps would have facilitated movement and access for the living or the dead into and out from the interior, allow surface water to drain and, depending on the height of the perimeter structure to either side, would have influenced how winds and low sunlight moved across the summit. They could have served different purposes at different times of the year, or during differing periods. Indeed, they may not have been open all of the time; the narrower examples could have been blocked temporarily using wooden structures, for example.
- Do the gaps/breaks have a relationship with any significant landscape features in the near, middle or far distance? Might they, as Luke (2003, 49) proposes of Swine Tail, have a relationship to solar or lunar cycles?
- What is the relationship of the gaps to the berm between the perimeter and the edge of the very steep natural slopes which surround the summit? Was it important to be able to access both the external and internal faces of the perimeter?

Question 3: Where were the Earliest Entrance, Entrances or Access Points?

6.25 Suggested locations for the original or at least earlier access points to the summit have varied markedly over the past 150 years. In 1853, Phillips noted of the openings in the perimeter that one at the south-west corner (the Ingleton approach?) “seems to be connected with a covered way down the steep brow” and that another “in the middle of the east face (the Clapham approach) ... was probably also an ancient track” (Phillips 1853, 26-29). Furthermore, there was what seemed like ‘a covered way’ leading to the small spring marked as St Anthony’s Well beneath the west side of the summit. Somewhat surprisingly, two years earlier in 1851 the Ordnance Survey 6” map (surveyed in 1846-48) showed no tracks or footpaths running up to the summit (see figure 4). Much later, in 1939, Raistrick described “traces of a graded ascent and approach on the eastern side” (the Clapham approach) but opined that “this cannot with any certainty be linked with the early occupation of the summit”; he thought that “a better defined approach, with traces of flanking outworks and main entrance, is on the west side”, although it is not certain exactly where he meant (Raistrick 1939, 124-125). Ward (1947) described the Clapham approach as an ‘ancient cartway’ but suggested that there may have been a ‘possible secret way’ between the gaps on the cliff to the north-west corner; this could well refer to the area immediately to the north of a prominent quarry on the summit’s western edge.

6.26 Early aerial photographs taken in the late 1940s show the Ingleton and Clapham approaches to be well worn, but with very little erosion on or around Swine Tail. There were apparently “at least six recognised routes to the top of Ingleborough” by the mid 1950s (Douglas Bolton 1955, 125), and King (1987) speculated that there was probably a gate at the north-east corner of the summit (i.e. at Swine Tail), ‘in addition to the other two gateways’ (presumably the breaks at the Clapham and Ingleton approaches). Two years later, Bowden, Mackay and Blood (1989, 268-269) suggested that the gap at the head of the footpath from Clapham was a possibility for an original entrance, but the most likely candidate was at the

north-east corner leading onto Swine Tail. Luke (2003, 44), in connection with a sub-circular feature at the north-west corner of the summit, postulates an early entrance through a gap in the perimeter perhaps connected with this feature. Most recently, Johnson (2008, 149-150) has proposed that the use of the summit for whatever purpose led to the growth of linear lines of approach from the surrounding valleys, and that the present walkers paths from Philpin Sleights through Humphrey Bottom (from the north), from Colt Park up Park Fell (from the north-east), from Ingleton past Crina Bottom (from the south-west) and from Horton through Sulber Nick (from the south-east) might continue much earlier routes.

- 6.27 The latter suggestion is entirely feasible, although at what date the approaches developed remains open to question. For example, the township boundary pattern shown on the 1851 Ordnance Survey 6" map (see figure 4) may have influenced how the summit was accessed. As has already been noted in Chapter 2, in 1851 the summit was divided between the townships of Ingleton and Moorgarth, Newby and Clapham. It is not known when the depicted township boundaries were established, but it is reasonable to suppose that each township would have had its own access to the summit, and this could partly explain how the approaches from Ingleton and Clapham developed. The Clapham approach, where it climbs the south-east flank of the summit, is by far the most regularly constructed and evenly inclined of all the summit approaches, and this graded ascent may well have led to its 19th/20th century description as an 'ancient track' or 'ancient cartway'. It is tempting to see the gap at the head of the Clapham approach as an early entrance onto the summit. In particular, the form of the perimeter bank to the immediate south-west of the gap (EDAS 1/16) suggests a planned break here, and arguably also the form to the immediate north-east too (EDAS 2/1-2/2), although this does not necessarily prove that the existing graded approach is also early in date; it may have been constructed at a later date to take advantage of a pre-existing break. In addition, the combined evidence of the plan form of the summit, the changing constructional form of the perimeter, and the distribution of the circular features also make previous suggestions of an early entrance at Swine Tail attractive. Although, as outlined above, it is considered likely that the Swine Tail gap was once crossed by a built structure and that this might have been removed when the township boundaries were established, it is still possible that a much narrower gap or break was once positioned here.
- 6.28 How the summit was accessed may well have depended very much on what it was used for. An enclosure that was to be secure, as opposed to overtly defensible, might be expected to have a main entrance that could be secured, perhaps with a secondary entrance to allow less visible access. An enclosure whose purpose was religious or ritual might have the same number of entrances, but these would have been used in a different manner. Their usage may well have been processional, with an entrance leading to whatever activity took place on the summit and a separate exit after this activity had been completed. If this was the case, then the identification of an entrance would be important for understanding the layout of the summit, as in the majority of religious complexes of all periods, the visitor enters at the least sacred end and progressed towards the most sacred. Of course, it is entirely possible that religious rituals changed according to a seasonal cycle, raising the possibility that the entrance/exit may have changed; did people ascend and descend Ingleborough along different routes at different times of the year?
- 6.29 As has already been discussed above in relation to the gaps in the perimeter, the role of the berm between the perimeter bank and the steep natural slopes also needs further consideration. Its purpose may have been entirely functional, for example to allow access to the outer face of the perimeter to facilitate construction

and repair. However, a berm width of a few metres would surely have sufficed for this purpose, and for much of the summit the berm is considerably wider than this. Did it too have a role to play in how the summit was accessed, perhaps allowing people to move along the berm to reach gaps in the perimeter?

6.30 Within the broad parameters of Question 3 (where were the earliest entrance, entrances or access points?) therefore, a number of subsidiary queries can be proposed:

- Did the primary access point to the summit change over time, and if so why?
- How can one differentiate between a gap/break in the perimeter and an access point or an entrance?
- Did a processional use of the summit mean that the entrances also acted as exits, and that movement across the summit varied according to some natural or religious cycle?
- Does the differing form of the perimeter provide evidence as to where an entrance may have been; for example, might that part of the interior of the summit that opens out beyond Swine Tail have acted as some kind of 'forecourt' to the higher central area with the circular structures?

Question 4: What is the Relationship of the Walls below the Summit to the Summit Structures?

6.31 Aside from the lack of any firm dating evidence, one of the main problems when considering Ingleborough's summit is that the wealth of evidence for occupation, activity and settlement that has been recorded in the surrounding landscape has almost no physical link to the summit itself. There are only two features which link the two; the various footpaths and trackways considered above, and a small number of surrounding walls.

6.32 These surrounding walls were first noted by King (1987), who depicted an 'outer breastwork' on the north flank of the summit, together with 'Enclosures presumed to be stock pounds' to the west, north of the Ingleton approach (see figure 10). In 1989, the walls were described by the RCHME as being a series of massive drystone walls, crudely constructed, surviving up to a maximum height of 1.40m. They were once 1.00m wide but had spread to up to 3.00m wide. It was suggested that their crude construction argued against their association with the 'carefully built rampart' (Bowden, Mackay & Blood 1989, 270). However, there are significant differences on their accompanying 1:2500 scale survey plan to the sketch made by King in 1987 (see figures 10 and 11). The RCHME show nothing on the line of King's 'outer breastwork' on the northern flank, but do depict a short section of wall at the east end of The Arks and a longer wall line at the west end (RCHME 'z'). The latter runs approximately north-south for c.200m on a roughly parallel alignment to the summit edge here and it maintains a roughly equal distance from it of 45m. The presumed enclosures noted by King would lie to the west of this wall but they were not marked by the RCHME. At its south end, there is an c.15m wide gap between the wall and a second length of wall on an east-west alignment. The east end of this wall did not run as far as the summit, while the west end is shown stopping at the western edge of the relatively level terrace here.

6.33 Survey work subsequently carried out by the Ingleborough Archaeology Group (Luke 2012d, 46-47) has described in detail what has been termed the '400m wall',

to the south-west of the summit, which runs from the edge of a limestone plateau north of Nook on a line towards the bottom of Falls Foot, although it stops well short of these landmarks, at Green Edge. It finishes rather abruptly part way across a plateau, and is built of limestone with orthostatic facing to both sides in places containing a rubble core. The best preserved parts stand to about 1.00m tall; it is not tall enough to contain sheep or horses, but might have contained cattle. The wall is of interest because it shares the same broad trajectory as the east-west wall line referred to above and recorded by the RCHME in 1988 just below the summit, although they are separated by a gap of 600m.

- 6.34 Although these walls lie outside the EDAS survey area, they were briefly inspected in the company of other interested parties. The lower part of the '400m wall' was visited with Robert White, Yvonne Luke and Al Oswald in August 2011. In its lower part, the wall is indeed a substantial feature, well over a metre wide at the base and with large orthostats sometimes visible to both faces. The orthostats are only a single course in height, and above and between them there is limestone rubble. In other places the wall has been reduced to a spread of angular limestone rubble, several metres wide but barely 0.50m high. The higher walls were inspected in the company of David Johnson at end of October 2011. It proved difficult to find any traces of the 'outer breastwork' on the north flank marked by King in 1987 and, as has been noted above, this was not recorded by the RCHME in 1988. It is difficult to image what purpose such a wall would serve here running across the contours on a very steep slope; the mere incline of the slope would seem to preclude any need for an 'outer breastwork'. The short section of wall by The Arks, recorded by the RCHME, was not visited in 2011 but was described by Luke (2003, 54-55). It stood up to 1.00m in height and c.1.00m wide, and was built of gritstone. After crossing into a scree slope, the character of the boundary changed, with very large stone slabs up-ended against piles of scree. Luke (2003, 55) also considered it unlikely that the wall had ever continued further to the west, as shown by King.
- 6.35 The east-west aligned wall line to the west of the summit marked by the RCHME in 1988 does however remain visible [7/644]. This wall is built of gritstone, the uppermost part running across a scree field. At the time of the EDAS site visit, the wall could not definitely be said to breast the summit; there are a series of large sub-triangular pieces of gritstone here on its approximate line [7/645], but there is no demonstrable relationship with the perimeter structure. If the wall had reached the summit, then it would have done so close to the hospice tower (EDAS 5), at a point where the perimeter structure is either only very faintly visible or absent. As it moves downslope to the west, the 'wall' becomes more substantial, although it still more closely resembles a spread bank of gritstone rubble, following a locally sinuous course, c.2.00m wide and set within a shallow gully; Luke (2003, 54) suggests that it may have fallen into an adjacent external ditch. Although the RCHME showed a gap of c.15m between this wall line and the one they recorded to the immediate north, the two are in fact joined, also noted previously by Luke (2003, 54). The wall to the north curves out of the north side of the main wall line, although like the latter, initially it would be more properly described as a rubble bank rather than a wall. Its line bulges to the west before it curves quite sharply back to the north-east, to assume the line shown by the RCHME in 1988. Here, the wall has a roughly laid gritstone rubble face standing up to 0.90m high [7/649]. This wall may be up to 0.70m wide but it does not appear to have a rear (east) face, rather a flattened area of ground to the immediate east, and so may have acted more like a revetment - it has been described as being more like 'a scree embankment than wall proper' (Luke 2003, 54). In contrast to the RCHME's depiction, at the time of the EDAS site visit, it could be definitely followed north for no more than c.100m; there is a line of rubble/scree on the alignment shown by the

RCHME beyond this point, but it may have accumulated due to natural movement down the slope above, rather than being an artificial feature.

- 6.36 Returning to the line of the main east-west feature, as it continues west downslope, it does come to resemble a wall rather than a rubble spread [7/646, 7/647, 7/648]. The wall is c.1.00m wide at the base and stands up to 1.40m high, with a very shallowly tapering profile. It is built of gritstone rubble, the lower part being roughly laid to horizontal courses, whereas the upper part is less regularly built with thinner, angled pieces of stone. The 'possible enclosures' marked to the immediate north of this area by King in 1987 again appear to largely comprise rubble/scree which has accumulated due to natural movement down the slope above, rather than being artificial features. The wall can be followed out of the scree and across the level area of ground above Falls Foot, but is then less easy to trace. At the time of the EDAS visit (October 2011), it was thought that the line might be visible beyond the base of Falls Foot for a short distance as a very spread bank, c.2m-3m wide but only 0.30m high and possibly bifurcating at its eastern end. However, in March 2011, as a result of being sent photographs taken in conditions of light snow cover, Johnson was able to trace a very similar feature for over 300m to the west from near the base of Falls Foot. It was also noted that beyond this section, the projected alignment of the bank towards the east end of the '400m wall' was followed by a series of small shake holes, which could post-date the bank's/boundary's existence (David Johnson, *pers. comm.*).
- 6.37 This possible alignment is important, because it is one of the very few physical man-made features which link the summit to the surrounding landscape. Nevertheless, like the summit itself, as yet no firm date can be put on it. It has been suggested (Luke 2012d, 46-47) that, as the boundary fails to match what is known about medieval land ownership in the dale (for example, the boundaries of Furness Abbey's lands), perhaps it should be thought of in terms of a first millennium AD date or even earlier. However, the counter argument could be proposed - the boundary fails to match what is known about local medieval land ownership because it post-dates the middle ages, although it had ceased to be of importance by the mid 19th century when the 1st edition Ordnance Survey 6" map was published. If the various sections described above do represent a single boundary, then why should it be defined in such different ways? Does this reflect what was immediately available in the vicinity to construct a boundary, or does it denote that different parts served different functions? The boundary may have started life as something which separated two different landholdings territorially, rather than physically, and which only later and in part needed to be made more substantial to serve a purpose such as stock control. This would imply use over a longer rather than a shorter period, but would still not necessarily infer a pre-Dissolution date.
- 6.38 Within the broad parameters of Question 4 therefore, two subsidiary queries can be proposed:
- What date are these surrounding walls and how do they relate to the summit?
 - Why should an apparent single boundary be defined in different ways along its length?

Question 5: Views and Viewing - Looking Out from and Looking at the Summit?

- 6.39 Both Johnson (2008, 110) and Bonsall and Howard (2012, 40) emphasise quite correctly that Ingleborough is such a dominant feature in the landscape that it would have caught the eyes and the minds of all those who came within sight of it, and that it forms a natural focus for a wide area [e.g. 4/547, 4/551, 4/553; 6/713, 6/714, 6/777, 6/778, 6/781] (see plate 1). It is also well known that from the summit a very wide area of the surrounding landscape comes into view, including (when visibility is excellent) peaks on the Isle of Man some 80-90 miles (128km-144km) away [e.g. 1/370; 2/411, 2/418, 2/419; 3/665, 3/667; 6/742]. Some internet sources (e.g. <http://www.viewfinderpanoramas.org/panoramas/ENG/INGLEBOROUGH.GIF>) also state that peaks as far south as the Peak District (Shining Tor, 68 miles/109km away) and south-west as Snowdonia (Carnedd Llewelyn, 95 miles/153km away) are visible, although again this is presumably only under conditions of extreme clarity. Likewise, it is assumed that, with the same clarity, Ingleborough is visible from these peaks. Ingleborough is also sometimes unexpectedly visible from geographically quite distinct areas; for example, it can be glimpsed from the aptly named Mountain, near Queensbury, West Yorkshire, some 35 miles to the south-east, through a gap between the hills flanking the Ribble valley. However, when considering viewing and being viewed over such distances, it is dangerous to make assumptions. The comprehension of how even relatively close landscape features were viewed, regarded or noticed in the past is not straightforward at a distance of only 600 years (Richardson 2011), and therefore trying to understand such matters over a period of several thousand years over many tens of miles is even more difficult, and might be regarded as highly speculative. Therefore, in the following text, only the more immediate geographical area is considered.
- 6.40 As a result of recent fieldwork in the surrounding area (Luke 2011, 11-22; Luke 2012c, 30-31), it has been suggested that there are several Neolithic long cairns which have a long axis aligned on the summit of Ingleborough or which, when viewed across their short axes, appear to make visual reference to it. These alignments may be evidence that “the mountain played a crucial and highly significant role in the religion and beliefs of the Neolithic people in the area” (Luke 2012c, 30-31); if cairns were being deliberately aligned on the summit during the Neolithic period, then one might reasonably expect that the summit was being regularly visited during the same period, even if no actual structures were built there. The local visual prominence of Ingleborough is such that one could argue that there was no need to enhance the summit, but as this was evidently done at some point, did it influence how the summit was perceived when viewed from a distance?
- 6.41 The increasing prominence and structural complexity of the perimeter structure as it approaches Swine Tail has already been described, and it has been proposed that this prominence makes a statement about the importance of the summit, especially when approached from the Ribblehead direction (Johnson 2008, 110). Given the ruinous state of the perimeter structure and the uncertainty as to its original maximum height, it is now difficult to picture clearly just how visible it would have been when viewed from a distance. However, it is possible to make some approximate calculations using the mound which forms the remains of the hospice tower (EDAS 5). This mound is set c.12m back from the edge of the summit, and stands a maximum of 1.40m high. It is clearly visible as a small ‘bump’ on the summit from the west at a distance of 1-2 miles, and also further away, although beyond about 3 miles (c.5km) its location needs to be known before it can be

picked out. The perimeter structure around Swine Tail is generally set 4m-5m back from the edge of the summit, and therefore even if it was only 1.50m high in total, it should have been visible from Ribbleshead several miles away. However, the visibility would have been affected by natural lighting and also the position of the sun, as when behind Ingleborough, any perimeter structure would have merged with the mountain's silhouette. Could the appearance of the perimeter therefore have been enhanced in any way, to make it more visible? Johnson suggests that the exterior may have had some kind of lime-based covering (David Johnson, *pers. comm.*). One might also propose that some of the transverse drystone facing stones recorded within Section 2 to the south of Swine Tail could indicate that the top profile of the perimeter structure was not flat but articulated in some way, perhaps with lower and higher sections which would have made it more visible from a distance, including in silhouette. However, one must surely always return to the visual prominence of Ingleborough itself as the basis for how the mountain may have been regarded in the past, rather than whatever crowned the summit.

- 6.42 When considering the views from the summit, the original height of the perimeter structure again has an important role to play. A height of much over 1.50m would have obscured much of the surrounding view to someone standing close to the perimeter structure, although given that there is a c.12m fall from the highest point of the summit to Swine Tail, the perimeter can never have been tall enough to have hidden the surrounding landscape from there. Perhaps this was part of the 'experience' of ascending the summit and again might emphasise the former importance of Swine Tail; a person on foot entering the summit at Swine Tail may have temporarily lost the view of the surrounding landscape, and then regained it as they ascended to the higher parts.
- 6.43 Such changes may well be highly relevant to the points that have been made above in relation to the natural shape of the summit, the changes in the form of the perimeter structure, and the sub-divisions of the space within. It is important not to forget that the summit would originally have been experienced only from the eye level of those on foot, and additionally a possible sense of 'enclosure' deriving from the perimeter structure should not be underestimated. Even before it was partly enclosed, the summit may have seemed set apart or cut off from the surrounding landscape to early visitors, a characteristic that has been noted in relation to the setting of some probable Bronze Age cairns (Luke & Richardson 2010); such a feeling may have been enhanced by the construction of the perimeter and perhaps even the cloud which frequently hides the summit.
- 6.44 The gaps and breaks in the perimeter may have had a role to play in the experience of viewing from the summit too, as would surrounding contemporary landscapes; for example, Bonsall and Howard (2012, 36) note that when a viewer stands on Ingleborough summit looking towards Wharfedale, the cairnfield at Douk Cave Pasture lies directly below the line of sight and is likely to have been clearly visible. They also rightly emphasise the role that cave entrances may have played in relationship to the cairnfield, and if Ingleborough's summit was used wholly for religious, ritual or ceremonial purposes, then a more complete understanding of the relationship of the 'above ground' summit to the 'below ground' cave deposits would be needed to begin to unravel how any contemporary belief 'systems' may have functioned (see for example, Lewis-Williams 2002; Lewis-Williams & Pearce 2005).

6.45 Within the broad parameters of Question 5 therefore, two subsidiary queries can be proposed:

- How highly visible was the perimeter structure from varying points and distances in the immediate surrounding landscape?
- How was the summit experienced by the visitor in the prehistoric period, and how did the natural shape, the form of the perimeter structure and any subdivisions (physical or imagined) influence their experience?

7 CONCLUSIONS

- 7.1 It might be thought, with the continuing lack of any firm dating evidence for any of the remains on the summit of Ingleborough predating c.1800, that all discussion must necessarily remain highly speculative, but this is simply not the case. The work undertaken over the last ten years in particular had begun to provide a possible narrative of development and crucially a landscape context for the summit, even if firm dates are still lacking. Given that funding for any scientific dating of the summit remains appears unlikely to be forthcoming in the immediate future, the prime method for further understanding will remain debate driven by the consideration of Ingleborough's many contexts.
- 7.2 The EDAS survey has recorded part of the summit's perimeter structure in greater detail than ever attempted before, producing new evidence for its construction (and in some instances also its apparent destruction). This report has begun to consider how the new information can be related to previous interpretations, and summarises the most recent work.
- 7.3 Out of the processes of survey, consideration and summary, several underlying themes emerge. For example, how the pre-existing landform of Ingleborough may have influenced human activity needs further thought. The argument that activity on Ingleborough predates the Iron Age is persuasive, whether viewed through the possible development of the summit over an extended period or the relationship of pre-Iron Age monuments in the immediate landscape to the summit. However, on current evidence, it is considered that the suggestion that changes in the form of the existing perimeter structure relate to differing functions rather than chronological development is the most likely, i.e. those parts of the perimeter structure recorded by the EDAS survey may all be broadly of a single period.
- 7.4 The EDAS survey also supports previous proposals about the importance of the Swine Tail area, and has provided possible evidence that the perimeter structure might have crossed this area too. The Swine Tail area might have been the most emphasised area of the summit in terms of the perimeter, but this does not necessarily imply that it was the most important part of the summit. Nevertheless, some division of the summit's internal space based on how it was accessed and experienced by those visiting on foot also seems highly likely.
- 7.5 The importance of trying to understand what took place on the summit after it had ceased to fulfil its earlier purposes has also been stressed by recent work and by the EDAS survey. Recent work has emphasised possible changing attitudes towards the summit in the historic period, and has begun to place the summit, and indeed the whole massif, within its many landscape, historical and esoteric contexts. This could be enhanced by further study of local land ownership, for example, trying to establish when township boundaries were established and why they take the form that they do. The EDAS survey has shed further light on the activities of surveyors on the summit during the early 19th century, and this has been important in identifying features which might otherwise be interpreted as the remains of much earlier periods. Sadly, this is also relevant to the 21st century, and much of what still survives on the summit has to be viewed through the lens of sometimes catastrophic erosion.

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- 9.2 The archaeological survey was undertaken by Shaun Richardson and Benchmark Land Surveys of Leeds, and the subsequent hand enhancement of the EDM survey was by Shaun Richardson. Members of the Ingleborough Archaeology Group also provided valuable assistance during the survey and enhancement work. Especial thanks are due to David Johnson and Yvonne Luke for their considerable help with the project, in supplying documentary material, sharing their knowledge and experience of this and other related sites, and for contributing to the subsequent report.
- 9.3 Comments on the draft survey report were kindly provided by Robert White and Yvonne Luke, and the final report was produced by Ed Dennison, with whom the responsibility for any errors remains.

APPENDIX 1

INGLEBOROUGH HILLFORT PHOTOGRAPHIC CATALOGUE

Film 1: Digital colour prints taken 12th October 2010
 Film 2: Digital colour prints taken 18th October 2010
 Film 3: Digital colour prints taken 10th November 2010
 Film 4: Digital colour prints taken 2nd March 2011
 Film 5: Digital colour prints taken 7th March 2011
 Film 6: Digital colour prints taken 11th April 2011
 Film 7: Digital colour prints taken 28th October 2011

<i>Film</i>	<i>Frame</i>	<i>Subject</i>	<i>Scale</i>
1	361	General view of perimeter W of Swine Tail (Section 4), looking NE	-
1	365	General view of perimeter W of Swine Tail (Section 4), looking E	-
1	366	General view of perimeter W of Swine Tail (Section 4), looking E	-
1	367	General view of perimeter W of Swine Tail (Section 4), looking E	-
1	370	View from summit, looking NE	-
1	383	Perimeter: modern shelters (4/2 & 4/3) W of Swine Tail, with view to Whernside, looking NE	-
1	384	Perimeter S of Swine Tail (Section 2) with view to Pen-y-Ghent, looking E	-
1	385	Interior: 'Sue', near RCHME 17, looking W	1m
1	386	Interior: 'Sue', near RCHME 17, looking S	-
1	387	Perimeter Section 4 (4/11), looking NW	1m
1	388	Perimeter Section 4 (4/10 - W end), showing small and large rubble construction, looking E	1m
1	389	Perimeter Section 4 (4/8), showing small and large rubble construction, looking NW	1m
1	390	Perimeter Section 4 (4/7), looking E	1m
1	391	Perimeter Section 4 (4/7), fallen orthostat on S side marked with yellow dot, looking W	1m
1	392	Perimeter Section 4 (4/7), fallen orthostat on S side, looking N	1m
1	393	Perimeter Section 4, narrow gap (4/5) and bank to E (4/4), looking E	1m
1	394	Perimeter Section 4 (4/5), 'Farrer through' in external revetment wall, looking S	1m
1	395	Perimeter Section 4 (4/5), 'Farrer through' in external revetment wall, looking SW	1m
1	396	Perimeter Section 4 (4/4), large orthostats to inner bank, looking N	1m
1	397	Perimeter Section 4 (4/4), large orthostats to inner bank, looking E	1m
1	398	Perimeter Section 4, gap between 4/4 and 4/3, looking E	1m
1	399	Perimeter Section 4 (4/3), facing orthostat in W wall of modern shelter, looking E	1m
1	400	Perimeter Section 4 (4/2), modern shelter prior to demolition, looking E	1m
1	401	Perimeter Section 3 (3/4), orthostat ring, looking E	1m
1	402	Perimeter Section 3 (3/3), modern cairn with 'wall' footings, looking NW	1m
1	403	Perimeter Section 3 (3/3), modern cairn with 'wall' footings, looking NW	1m
1	404	Perimeter Section 3 (3/2), remains of modern cairn, looking E	1m
1	405	Perimeter Section 2 (2/11), orthostats at S end of inner face, E	1m
1	406	Perimeter Section 2 (2/9), modern shelter on external side, looking S	1m
1	407	Perimeter Section 2 (2/9), 'box frame' structure, looking E	1m
1	408	Perimeter Section 2 (2/8), orthostatic structure, looking SE	1m
1	409	Perimeter Section 2 (2/7), looking E	1m
1	410	Perimeter Section 2 (2/5), large orthostats on inner face revealed by demolition of modern structure, looking SE	1m
2	411	View to Morecombe Bay from terrace to S of summit, looking NW	-
2	418	Pen-y-Ghent from summit, looking NE	-
2	419	View to Whernside from summit, looking N	-
2	420	Interior: view across summit to Hospice Tower (5), looking W	-
2	423	Interior: view to Hospice Tower (5), looking W	-
2	425	Perimeter Section 2, view to 2/11-2/9, looking SE	1m
2	426	Perimeter Section 2 (2/11), external drystone wall, looking W	1m
2	427	Perimeter Section 2 (2/11), external drystone wall, looking NW	1m
2	429	Perimeter Section 2 (2/10), through stones in NE corner, looking S	1m
2	430	Perimeter Section 2 (2/11), orthostats at S end of inner face, looking E	1m

2	431	Perimeter Section 2, structure on N side of 2/9, looking SE	1m
2	432	Perimeter Section 2 (2/9), drystone walling, looking S	1m
2	433	Perimeter Section 2 (2/9), modern shelter on external side, looking N	1m
2	434	Perimeter Section 2 (2/8), orthostatic structure, looking SE	1m
2	435	Perimeter Section 2 (2/8), orthostatic structure, looking E	1m
2	437	Perimeter Section 2 (2/7), looking SE	1m
2	438	Perimeter Section 2 (2/7), looking NE	1m
2	439	Perimeter Section 2 (2/5), large orthostats on inner face revealed by demolition of modern structure (2/6), looking SE	1m
2	440	Perimeter Section 2 (2/5), large orthostats on inner face revealed by demolition of modern structure (2/6), looking NE	1m
2	441	Perimeter Section 2 (2/5), looking S	1m
2	442	Perimeter Section 2 (2/5), looking NE	1m
2	444	Perimeter Section 2 (2/3), looking SE	1m
2	445	Perimeter Section 2 (2/3 - N end), looking NE	1m
2	446	Perimeter Section 2 (2/3 - S end), looking NE	1m
2	447	Perimeter Section 2 (2/3), looking N	1m
2	448	Perimeter Section 2 (2/2), external base stones, looking SW	1m
2	449	Perimeter Section 2 (2/2), looking NE	1m
2	450	Perimeter Section 2 (2/1), looking NE	1m
2	451	Perimeter Section 1 (1/18), modern cairn on Clapham approach, looking NE	1m
2	452	Perimeter Section 1 (1/17), modern cairn on Clapham approach, looking NW	1m
2	453	Perimeter Section 1 (1/16), edging stones to N end, looking SW	1m
2	455	Perimeter Section 1 (1/16), through stones, looking SE	1m
2	460	Perimeter Section 1 (1/15), modern shelter, looking SW	1m
2	461	Perimeter Section 1, view towards 1/13, looking W	1m
2	462	Perimeter Section 1 (1/13), modern cairn, looking E	1m
2	463	Perimeter Section 1, change of angle between 1/12 and 1/13, looking S	1m
2	464	Perimeter Section 1 (1/12), through stones, looking E	1m
2	465	Perimeter Section 1, general view with 1/12 in foreground, looking S	1m
2	466	Perimeter Section 1 (1/11), looking S	1m
2	467	Perimeter Section 1 (1/11), internal orthostats, looking SE	1m
2	468	Perimeter Section 1 (1/11), looking N	1m
2	469	Perimeter Section 1 (1/11), orthostats at SW corner, looking N	1m
2	470	Perimeter Section 1 (1/10), internal face, looking S	1m
2	471	Perimeter Section 1 (1/8), orthostats to inner face, looking N	1m
2	472	Perimeter Section 1 (1/8) orthostats to inner face, looking NE	1m
2	473	Perimeter Section 1 (1/7), showing gap and small stones, looking NE	1m
2	474	Perimeter Section 1 (1/7), inner quarry scoops, looking SW	1m
2	475	Perimeter Section 1 (1/6), orthostats to inner face, looking SW	1m
2	476	Perimeter Section 1 (1/6), orthostats to inner face, looking SE	1m
2	477	Perimeter Section 1 (1/6), orthostats to inner face, looking NE	1m
2	478	Perimeter Section 1 (1/3), orthostat to inner face of N end, looking E	1m
2	479	Perimeter Section 1 (1/3), tumbled rubble to outer face, looking SW	1m
2	481	Perimeter Section 1 (1/4), modern shelter, looking SW	1m
2	482	Perimeter Section 1 (1/1), orthostat and quarry scoops to inner face, looking SW	1m
2	483	Perimeter Section 1 (1/1), orthostat to inner face, looking S	1m
2	485	Perimeter Section 1 (1/1), transverse division, looking SW	1m
2	486	Perimeter Section 1 (1/1 - W end), looking W	1m
2	487	Perimeter Section 1 (1/1), bank and quarry scoops, looking E	1m
2	489	Perimeter Section 2, patterned ground W of 2/3 and 2/4, looking N	1m
3	642	Simon Fell, looking NE	-
3	643	Natural scarp defining NE edge of 'hut circle' area, looking E	-
3	645	Perimeter Section 4 (4/3), with view to Wherside, looking N	-
3	646	Swine Tail, looking NE	-
3	652	Interior: Hospice Tower (5), inscribed stone on SE part of plinth	0.50m
3	653	Interior: Hospice Tower (5), inscribed stone on SE part of plinth	0.50m
3	654	Interior: Hospice Tower (5), inscribed step on N side	0.50m
3	655	Interior: view to Hospice Tower (5), looking NW	1m
3	656	Interior: Hospice Tower (5), looking W	1m
3	657	Interior: Hospice Tower (5), looking W	1m
3	658	Interior: foundations to S of Hospice Tower (5), looking W	1m
3	659	Interior: Hospice Tower (5), typical coursing to base of tower, looking N	1m

3	660	Interior: Hospice Tower (5), typical edging stones to plinth, looking W	1m
3	661	Interior: Hospice Tower (5), step to N side, looking W	1m
3	662	Interior: Hospice Tower (5), looking N	1m
3	663	Interior: Hospice Tower (5), typical edging stones to tower, looking E	1m
3	664	Interior: Hospice Tower (5), typical edging stones to tower, looking E	1m
3	665	View to Whernside, looking NW	-
3	667	View to Whernside, looking NW	-
4	547	View to Ingleborough from Crina Bottom track, looking NE	-
4	550	View to Ingleborough from Crina Bottom track, looking NE	-
4	551	View to Ingleborough from Crina Bottom track, looking NE	-
4	553	View to Ingleborough from Crina Bottom track, looking NE	-
4	554	Perimeter Section 4, gap between 4/3 and 4/4 showing possible N edge in frost and sunlight, looking W	0.50m
4	555	Perimeter Section 4, gap between 4/3 and 4/4 showing possible N edge in frost and sunlight, looking W	0.50m
4	556	Perimeter Section 4 (4/1), remains of 'Farrer through' on external face, looking W	0.50m
4	557	Perimeter Section 4 (4/1), remains of 'Farrer through' on external face, looking W	0.50m
4	558	Perimeter Section 4 (4/1), remains of 'Farrer through' on external face, looking E	0.50m
4	559	Perimeter Section 4 (4/4), step to external face, looking SW	0.50m
4	560	Perimeter Section 4 (4/4), step to external face, looking SW	0.50m
4	562	Perimeter Section 4 (4/3), orthostat edging and destroyed shelter, looking E	0.50m
4	563	Perimeter Section 4 (4/3), orthostat edging and destroyed shelter, looking E	0.50m
4	564	Perimeter Section 3 (3/1), looking NE	0.50m
4	565	Perimeter Section 3 (3/3), cairn and wall base stones, looking NW	-
4	566	Perimeter Section 3, 'Pile of Stones', looking NW	0.50m
4	567	Perimeter Section 3 (3/1), looking SE	0.50m
4	570	Perimeter Section 3 (3/3), view to cairn and Whernside, looking N	-
4	571	Perimeter Section 2 (2/11), possible grooved stone on internal side	0.50m
4	572	Perimeter Section 2 (2/11), possible grooved stone on internal side	0.50m
4	573	Perimeter Section 2 (2/11), projecting base stones to external face, looking NE	0.50m
4	574	Perimeter Section 2 (2/12), possible old lettering to interior, looking N	0.50m
4	575	Perimeter Section 2 (2/12), possible old lettering to interior, looking W	0.50m
5	587	Perimeter Section 2 (2/2), external base stones, looking SW	0.50m
5	588	Perimeter Section 2 (2/2), external base stones, looking W	0.50m
5	589	Perimeter Section 2 (2/2), bank with external base stones, looking NW	0.50m
5	590	Perimeter Section 2 (2/2), bank with external base stones, looking NW	0.50m
5	596	Perimeter Section 1 (1/16), edging stones to NE end, looking SW	0.50m
5	597	Perimeter Section 1 (1/16), edging stones to NE end, looking NW	0.50m
5	598	Perimeter Section 1 (1/10), alternating rubble and grassed bands, looking S	-
5	600	Interior: possible circular structure (8), looking W	-
5	601	Interior: Circular feature (RCHME 13), looking NW	-
6	713	View of Ingleborough from watershed of Gayle to Kettlewell Road, looking NW	-
6	714	View of Ingleborough from watershed of Gayle to Kettlewell Road, looking NW	-
6	742	View of Pen-y-Ghent from summit, looking NE	-
6	743	Perimeter Section 3 (3/3), modern cairn, looking N	1m
6	744	Perimeter Section 2 (2/11), remains of former cairn perimeter, looking SE	1m
6	745	Perimeter Section 2 (2/6), remains of former shelter against inner face, looking NE	1m
6	746	Perimeter Section 2, stones spelling 'D r', W of 2/5, looking W	1m
6	747	Perimeter Section 1 (1/18), modern cairn, looking SE	1m
6	748	Perimeter Section 2/3, edge of summit footpath, looking N	1m
6	749	Perimeter Section 1 (1/17), modern cairn adjacent to Clapham approach, looking W	1m
6	750	Interior: modern cairn (9), on route between Clapham approach and shelter, looking W	1m
6	751	Interior: modern cairn to W of 9, on route between Clapham approach and shelter, looking W	1m

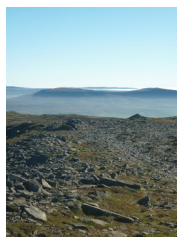
6	752	Interior: modern cairn to W of 9, on route between Clapham approach and shelter, looking W	1m
6	753	Perimeter Section 1 (1/13), modern cairn, looking S	1m
6	754	Interior: possible circular structure (8), looking NE	1m
6	755	Interior: Hospice Tower, ex situ stone now to N of shelter (7), looking SW	1m
6	756	Interior: modern cairn to N of shelter (7), looking NW	1m
6	757	Interior: modern shelter on side of cairn (6), looking SW	1m
6	758	Interior: modern shelter on side of cairn (6), looking SE	1m
6	759	Interior: modern cairns to N of shelter (7), looking NW	1m
6	760	Interior: modern cairn, N of trig point, looking S	1m
6	761	Interior: modern cairns, NW of Hospice Tower (5), looking N	1m
6	762	Interior: modern shelters, SW of Hospice Tower (5), looking E	1m
6	763	Interior: modern shelters, SW of Hospice Tower (5), looking SE	1m
6	764	Interior: modern shelters, SW of Hospice Tower (5), looking W	1m
6	765	Interior: cairn (6), S of shelter, looking N	1m
6	766	Perimeter Section 1 (1/11 - SW end), possible grooved orthostat, looking SE	1m
6	767	Perimeter Section 1 (1/11 - SW end), possible grooved orthostat, looking E	1m
6	768	Perimeter Section 1, typical view, looking S from 1/12	1m
6	769	Perimeter Section 1 (1/15), modern shelter, looking SW	1m
6	770	Perimeter Section 1 (1/15), modern shelter, looking SW	1m
6	771	Perimeter Section 1 (1/4), modern shelter, looking W	1m
6	774	Interior: general view of summit structures, looking NE	-
6	776	View of summit from second uppermost terrace on W side, looking NE	-
6	777	View of Ingleborough from Crina Bottom, looking NE	-
6	778	View of Ingleborough from Crina Bottom, looking NE	-
6	781	View of Ingleborough from near Ingleton, looking NE	-
7	632	Interior: modern cairn to W of 9 and line of stones, on route between Clapham approach and shelter, looking E	-
7	633	Interior: modern cairn to W of 9 and line of stones, on route between Clapham approach and shelter, looking E	-
7	634	Interior: mountain bike tracks, running NW from W of Clapham approach towards shelter (7), looking W	-
7	635	Interior: mountain bike tracks, running NW from W of Clapham approach towards shelter (7), looking W	-
7	636	Interior: mountain bike tracks, running NW from W of Clapham approach towards shelter (7), looking W	-
7	637	Perimeter Section 4 (4/2), earlier drystone face to former modern shelter, looking W	1m
7	638	Perimeter Section 4 (4/2), earlier drystone face to former modern shelter, looking W	1m
7	639	Perimeter Section 4 (4/10), damage to orthostats on inner face, looking N	0.50m
7	643	Possible stone from Hospice Tower, on NW flanks to N of Ingleton approach	1m
7	644	Wall line, running from NW flank down towards Fall's Foot, looking SW	-
7	645	Possible wall line, running from NW flank across scree towards summit, looking NE	-
7	646	Wall line, running from NW flank down towards Fall's Foot, looking NE	1m
7	647	Wall line, running from NW flank down towards Fall's Foot, looking N	1m
7	648	Wall line, running from NW flank down towards Fall's Foot, looking N	0.50m
7	649	RCHME wall line running NW from wall above, looking NE	1m



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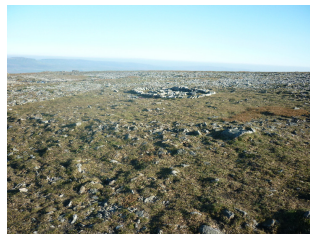
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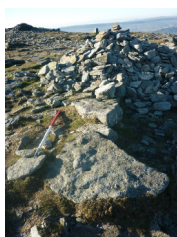
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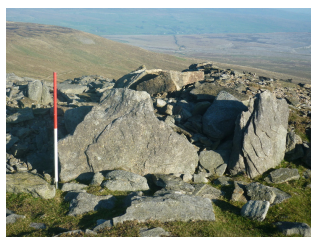
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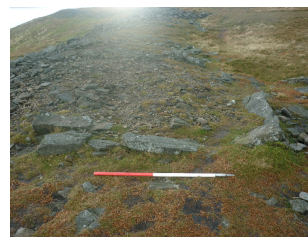
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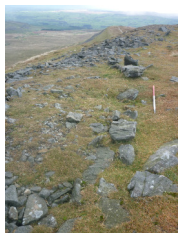
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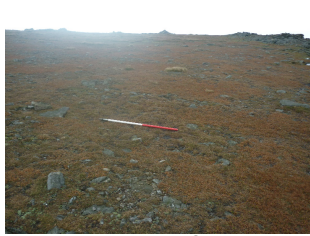
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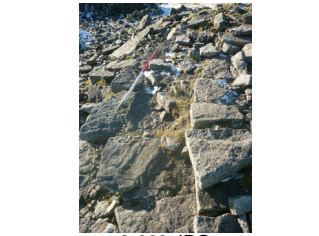
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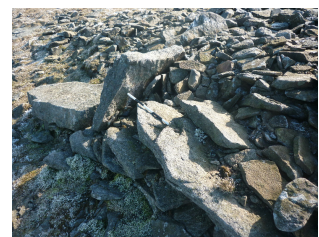
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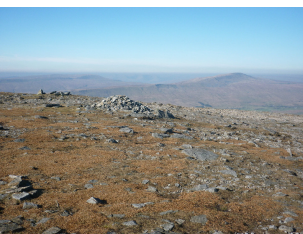
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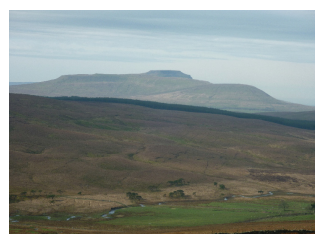
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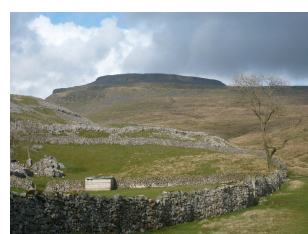
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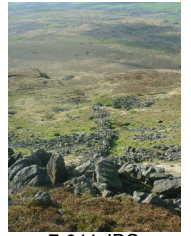
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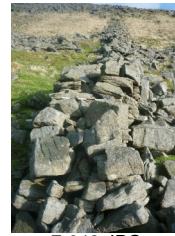
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APPENDIX 2

PROPOSED SURVEY WORK AT INGLEBOROUGH EDAS METHODS STATEMENT

Introduction

The prime reason driving any survey work is the ongoing cairn building on the summit by visitors, and the catastrophic deterioration of the stone built ramparts to the southern and eastern parts of the summit as a result the same activities.

Three elements of work are proposed.

- A condition survey of the summit, principally a gazetteer of modern cairns and other structures, undertaken at a scale of 1:500 so as to be comparable with the previous RCHME summit survey.
- A detailed measured survey of those parts of the ramparts which are being most badly damaged by visitors, undertaken at a scale of 1:200, plus detailed survey at a larger scale of other individual features. Although this element of the work will primarily form a detailed record of these parts of the ramparts as they exist at the time of survey (and if damage continues at the same rate, it may well also be the last chance to record them in sufficient detail to allow future interpretation), it will also be suitable to use as a baseline record against which to assess future damage / changes to these parts of the ramparts, should this be desired.
- Earthwork survey training for Ingleborough Archaeology Group

It should be noted that the timings and costings given below have been calculated on the assumption that on each of the machine survey days, a lift up and down in a 4 x 4 vehicle will be available to within a reasonable walking distance of the summit on the Clapham side, for example, onto Little Ingleborough. The machine survey work will therefore require careful liaison with the provider of the 4 x 4 vehicle, and will also to a large extent be weather dependent. It is believed that the Yorkshire Dales National Park Authority (YDNPA) will be carrying out maintenance work on and around Ingleborough during August and September 2010 which will require the use of a 4 x 4 vehicle, and this may therefore provide a window of opportunity for the machine survey to take place. There will be no need for a lift up or down from the summit during the hand-enhancement of the machine survey.

Methodology

It is proposed that the machine survey will take place over 3 days, in the following sequence:

Day 1 - An EDM total station survey team will be used to establish survey stations on the summit of Ingleborough and the detailed survey of the ramparts will commence.

Day 2 - The EDM total station survey team will be accompanied by GPS equipment and an operator. The GPS will be used to locate the survey stations, and to map modern cairns and other structures. The EDM total station survey team will continue with the detailed / condition survey work.

Day 3 - The EDM total survey team will finish off the detailed survey work / condition survey work.

GPS Element

It is proposed that the survey stations would be positioned to National Grid coordinates would using LeicaGPS equipment. This would also be used to record more general survey detail. The proposed equipment to be used would be Leica GPS 1200 kit. Survey stations would be occupied with the Real Time Kinetic Kit and 500 plus readings would be taken with corrections received from the Leica Smart NetGPS correction service. A mean of the 500 readings will be produced. The accuracy of the readings is generally dependant on the number of satellites visible to the receiver which will be at a maximum in this location. Horizontal accuracy is generally in the region of +/- 30mm although this depends on the number of readings taken/number of satellites visible. All coordinates produced

would relate to the OSGB36 Coordinate System and scale factor. Vertical Datum would be computed using the OSTN (02) Geoid Model.

Total Station Element

The bulk of the detailed survey would be carried out using a Trimble 5600 robotic Total Station, from the survey stations to be positioned using the GPS kit. The survey would be carried out in autolock mode whereby the total station is constantly aimed at the target on the detail pole (i.e. it follows the target without the need for the operator to point it). Typical accuracy values for measurements taken with this equipment are +/- 5mm + 2 parts per million per distance. The completed survey information would be reduced in Civilcad software using the GPS station values, combined with the GPS survey information and outputted in CAD as DWG / DXF files plus film copies for hand enhancement.

The detailed surveys will subsequently be hand enhanced, and will be supported by a digital photographic record.

Condition Survey of the Summit

A condition survey of the summit will be undertaken, which will take the principal form of a gazetteer of all modern cairns and other structures which have appeared since the 1988 RCHME survey. Each cairn / structure will be identified with a unique identifier letter / number code, and a digital photograph and short description made. The purpose of the gazetteer will be to allow the YDNPA to make recommendations as to which cairns / structures should be dismantled or relocated. It is not the purpose of this work to produce a completely new topographic survey of the summit, although sufficient information will be gathered to allow the survey to be compared with the existing RCHME 1988 survey. Areas of erosion and other damage will be identified using vertical photography, LIDAR imagery (if available) and combined with the information from the condition survey. The new survey will be undertaken at 1:500 scale so that it matches the RCHME survey. The machine plots will be enhanced by hand, and results digitised back into electronic survey data.

Detailed survey of the remains of the stone built rampart and other features

The stone built rampart structures to the west and south of the north-east corner 'gap' of the summit at Swine Tail have suffered catastrophic damage. There now appears to be more internal detail visible in the section to the west of Swine Tail than was shown by the RCHME in 1988, whereas in the section to the south there may now well be significantly less. Following discussion with the NYDPA Senior Conservation Archaeologist, it is proposed that the following parts of the ramparts are recorded in detail; c.100m to the west of the Swine Tail Gap; the 35m wide 'gap' itself (there appear to be structural stones in the base of the gap); c.70m south of the gap as far as the approach from Clapham; c.150m south-west from the Clapham approach. This makes a total of some 350m.

The survey will be carried out at a scale of 1:200. Previous survey work by EDAS has demonstrated that individual structural stones of the size of those incorporated into the rampart can be shown clearly at this scale; in addition, at 1:200, by dividing the rampart into areas north and south of the Clapham approach, then the sections surveyed should fit onto two A1 sized sheets. The survey will show *in situ* structural stones, possible or displaced structural stones, and other relevant features, and will be hand-enhanced using conventions analogous with those used by the RCHME on their 1988 1:100 detailed survey of a rampart section. The 1:200 survey will be accompanied by a number of profiles at a larger scale (probably 1:50, the final number to be identified in the field but likely to be c.5) both across the sections of rampart being surveyed and also other surviving sections for comparison.

The NYDPA Senior Conservation Archaeologist has also proposed a further area of detailed survey on a single individual feature. The base of the Hospice Tower, towards the western end of the summit, is to be recorded in advance of possible consolidation work. The remains of the tower comprise a spread of rubble c.10m in diameter, within which the base of the circular tower is visible. The base of the tower and surrounding rubble spread will be surveyed at a scale of 1:50.

Earthwork survey training for Ingleborough Archaeology Group (IAG)

It is proposed that the survey training work will comprise several different strands, and will involve both machine and hand measurement.

Machine survey summit work. Given the difficult nature of the machine survey work on the summit, and the necessity of utilising limited time there efficiently, it is not thought suitable for intensive hands-on training in machine survey techniques. However, in order that the IAG can be closely involved in each stage of the survey, it is proposed that on the first day that the EDM total station survey team are present, the IAG are invited up onto the summit to observe how the survey takes place. It is envisaged that the observation should be interactive, not static, and will take the form of demonstration and assistance. The EDM survey team will explain the techniques of machine survey as they are progressing, and will invite questions from the IAG. When the detailed rampart work is being undertaken, the IAG members will be given the opportunity to assist in the recording, using the EDM staff to record individual stones. The IAG will be invited up onto the summit again at a subsequent date to observe and assist in hand-enhancement of the EDM plots.

Hand measured earthwork survey. It is proposed that the IAG are instructed in traditional hand measured earthwork survey, using an optical square, tapes etc, on an area of landscape around Scar Close, just to the south of the B6255 near Chapel le Dale. The proposed survey area is formed by a piece of rough pasture c.100m long by 50m wide, relatively flat, containing a long cairn with stratigraphic relations to other earthworks, enclosures and other features. It has easy access from a public road, is directly relevant to the work that the IAG are already undertaking in the area, contact has already been made with the farmer and there is already a management agreement in place with Natural England. A 1:500 plan would be produced of all earthworks within the survey area, together with a 1:50 plan of the cairn and associated features. It is envisaged that the IAG could then produce a report on the survey.

Evening Lecture: When the survey work is completed, it is proposed that the results are discussed in the form of an evening lecture to the IAG. This could be done in conjunction with other interested parties, such as for example, David Johnson and Yvonne Luke. For example, the evening could be split into different parts. Shaun Richardson could explain how the recording was undertaken, and then discuss the results i.e. the physical nature and form of the structures that had been recorded. Other interested parties could then offer their interpretation of the results, resulting in a group discussion giving all members of the IAG who were present the opportunity to contribute.

Reporting

It is envisaged that the finished report will take the form of an illustrated text. It will firstly describe what has been recorded, and then, where relevant, will make comparisons with the 1988 RCHME survey. This comparison will include a review of photographs of the summit taken between c.1987 and 2010, illustrating issues such as how a sample of the visitor-built features have developed / changed over time, and if the distribution of such features is subject to changing patterns. Earlier material relevant to this review will also be used where it is easily accessible. No new research is required as part of the survey work, although consultation will be carried out with interested parties such as Yvonne Luke and David Johnson. The report will be illustrated by wet-ink plots based upon the field drawings.

The combination of the proposed survey work on the summit of Ingleborough, the consultation with the IAG and ongoing work by other interested parties is likely to produce a substantial body of new information. The information will be significant on a national as well as a regional basis, and may inform the interpretation of other similar monuments, such as Mam Tor, Derbyshire, for example. It is therefore considered important that publication is sought in a suitable journal with a national readership, in order that the information is widely disseminated, thus hopefully provoking further informed discussion of the results. The previous 1988 survey was published in the *Proceedings of the Prehistoric Society*, but other journals such as *Antiquity* or *The Archaeological Journal* could also be considered.