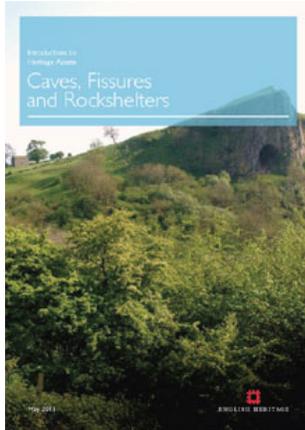




Historic England

Caves, Fissures and Rockshelters



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Although this document refers to English Heritage, it is still the Commission's current advice and guidance and will in due course be re-branded as Historic England.

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Introductions to
Heritage Assets

Caves, Fissures and Rockshelters

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ENGLISH HERITAGE



Fig. 1. A map showing the main areas of karst landscape, where most limestone caves are found (England only).

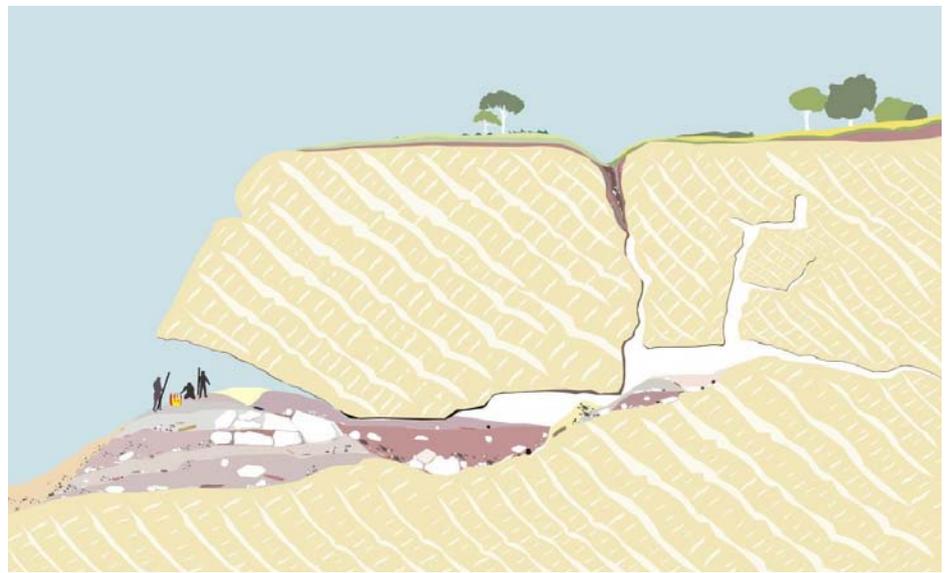


Fig. 2. A diagrammatic section through a limestone cave and fissure system, illustrating the build-up of deposits containing evidence for human occupation.

INTRODUCTION

The subterranean world can be as revealing about our past, and as much a part of our natural and cultural heritage as remains at the surface. Caves, fissures and rockshelters were amongst the first sites to be systematically explored in modern times, providing crucial evidence for the earliest prehistory of mankind. During the Ice Age (the Pleistocene: from about 2.5 million to 11,500 thousand years ago) they were the sites of natural deposition, of human occupation, burial, ritual and artistic activities. Since then, up to the present day, they have often continued to be used for a great variety of purposes, adding to the richness of the historical record. Caves are famous for their contribution to archaeology throughout much of the world, and in Britain, England is very fortunate in its share in this very important category of scientific and heritage asset. Of the hundreds of archaeological caves and rockshelters recorded in England, 50 are designated as Scheduled Monuments.

Scientific interest in such features began in the early 19th century when discoveries of bones of extinct animals were thought by some to come from an age before the Biblical flood. However, with the discovery of stone tools lying with them, and below stalagmite, in caves such as Kent's Cavern, and Brixham, both in Devon, it seemed clear that such bones and tools were both ancient and contemporary with each other.

These finds contributed to the debates that raged in the middle of the century about the antiquity of humans, stoked by similar finds from caves on mainland Europe and in French river valley gravels.

Once their great age became accepted, and terms such as the Palaeolithic Age first coined (1865), it was predominantly from European caves and rockshelters that a cultural sequence for the late Pleistocene was then developed.

Since the 1920s research in British caves and fissures, especially in Wales, Devon, Somerset Derbyshire, and the Yorkshire Dales has opened up the Pleistocene history of the island and has linked this with the rich continental record. The deposits in caves comprise rare time capsules of cultural and scientific information that have elsewhere been erased from the landscape by erosion and deposition, and more recently by agriculture and other destructive forces.

Although best known for their contribution to Ice Age archaeology and palaeo-environmental studies, such sites can also contain a legacy of evidence from later prehistory up to modern times, and are today also highly prized for their scenic value, and for sporting and recreational caving.



Fig. 3. Archaeological excavation being undertaken at the entrance to Church Hole Cave, Creswell Crags, on the border between Nottinghamshire and Derbyshire, 2006.



Fig. 4. A prominent landscape feature: Thor's Cave, Manifold valley, Staffordshire. Finds from early excavations here and in the nearby fissure include human remains, and artefacts dating from the late Palaeolithic to at least the Romano-British period.

DESCRIPTION

Caves are defined here as naturally created subterranean voids, which have been used or adapted by humans, or natural trapping places for evidence for human activity. They may be empty, or partially or wholly infilled by sediment, rock debris and/or water. Vertical fissures are usually integral to cave systems, but can occur as unrelated features. A rockshelter is the area beneath a natural overhang or rock-face used by humans, but open to the elements and daylight. Platforms outside caves and rockshelters, as well as the areas of talus or scree and tipped material from previous excavations, can all be archaeologically significant.

Most caves in England occur in areas of limestone (or karst) geology (Figure 1), particularly the Carboniferous limestone of the Mendips, the White Peak, and north Pennines, but also in Devonian limestone (such as Kent's Cavern) and Permian Magnesian limestone (for instance, the caves of the Creswell area of Derbyshire). Most were created in the geologically distant past by a prolonged process of dissolution and enlargement of joints and fractures within the bedrock by the percolation of mildly acidic rainwater. Today caves can take a wide variety of forms, from modest cavities to ramifying and complex subterranean systems of passages, fissures and caverns. Many caves are contiguous with mines. Below ground the seepage of saturated ground water results in the formation of structures such as stalagmites and stalactites as well as layers of 'flowstone' which protect (and obscure) other deposits and features, as well as providing vital stratigraphic and chronological information.

Some types of fissure, not associated with caves, are caused by the vertical fracture of rock layers as they adjust to mechanical weakness or mass movement in underlying or adjacent rocks, becoming further enlarged and eventually infilled by sediments that potentially contain faunal remains and evidence for human activity.

In the past, caves and rockshelters may have been used for activities such as domestic occupation, burial, storage, refuse disposal, refuge, ritual or concealment, the traces of which may be found in the accumulated sediments. Together with

fissures they may also have been the sites of less deliberately accumulated remains – where skeletal or artefactual material has been deposited by natural earth processes, water movement, or by animal activity (Figure 2).

The use of caves and rockshelters, especially their roomier and better illuminated parts, is attested by the presence of artefacts, accumulations of food debris, hearth material, and even very rare traces of rock art. Some larger caves may have served as semi-permanent occupation sites, whilst others were used more opportunistically, on hunting trips for instance. From the Mesolithic to the Iron Age they seem to have been intermittently attractive as the sites of human burials. Later in time their use is not very well understood but finds of Roman and medieval date suggest episodic use for shelter, refuge, storage, workshops, hiding places, hermitages, and perhaps shrines. With a history passing back into obscurity, and being openings into a dark and mysterious subterranean otherworld, caves and fissures are also liminal places where the natural and supernatural worlds mingle, imbuing such sites with greater mystery, expressed outwardly in a rich corpus of legend and folklore.

CHRONOLOGY

Subterranean features have provided some of the earliest evidence for the human occupation of Britain: cut-marks on red deer bone from an infilled cave exposed in a quarry at Westbury-sub-Mendip (Somerset), and possible stone tools, indicate a human presence there during a warm interval, about 500,000 years ago; such finds are broadly contemporary with the better known 'open site' at Boxgrove (West Sussex) and in East Anglia. Lower Palaeolithic stone tools have also been found in Kent's Cavern, Devon, and indicate activity in or near that cave at least 350,000 years ago.

Stone artefacts indicative of a Neanderthal presence (and dating approximately 40,000 – 50,000 years ago), are known from caves such as Hyaena Den (Cheddar, Somerset), several caves in the Creswell gorge (Derbyshire; Figure 3), and at the rockshelter site of Oldbury (Kent).



Fig. 5. Victoria Cave, near Settle, Ribblesdale, North Yorkshire. Discovered in 1837, excavations here found many bones of extinct animals (hippos, rhino, elephant and hyena), a late Palaeolithic antler harpoon point, as well as later prehistoric, Roman and medieval artefacts. During the Romano-British period the cave may have been used by craft workers, or possibly as a shrine.

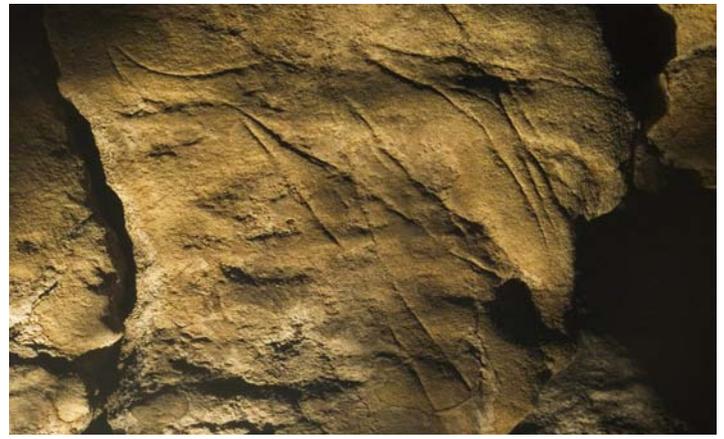
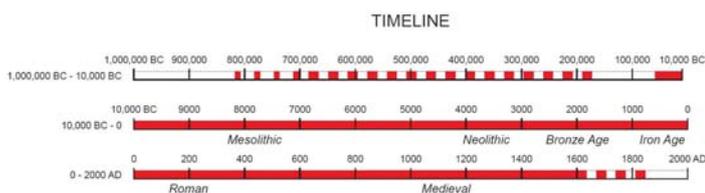


Fig. 6. Engravings on the cave wall within Church Hole Cave, Creswell Crags, identified in 2003; these are interpreted as either representing birds, or perhaps schematic human females. Uranium-series dating of flowstone overlying the figures suggests an age in excess of 12,800 years ago.

From 30,000 years ago, in the Upper Palaeolithic, evidence of modern humans is more common especially from cave deposits later in this period (15,000 – 10,000 years ago). With the subsequent waning of the ice and return of a warmer climate, activity in the succeeding Mesolithic is not well defined, although human remains of this period seem to be nearly exclusively found in fissures and caves with, for example, unique evidence for a cemetery at Aveline's Hole in Mendip (Somerset).

The mortuary use of caves and fissures becomes more marked from about 6,000 years ago, though activity is concentrated in certain periods, especially the Early Neolithic and Late Bronze Age. It seems quite possible that their use throughout later prehistory was predominantly for burial ritual, perhaps included within a wider ceremonial use of landscapes and constructed monuments. Caves and rockshelters continued to be used in the Roman and medieval periods but seemingly for a much more diverse range of activities, some of which continued well into the post-medieval period. For instance, a hermit is recorded living in a rockshelter at Carden Park, Cheshire, in 1809, and census returns show that domestic uses of shelters and caves continued into the 20th century. Indeed, there is increasing evidence that cave use in the post-Roman period has been under-estimated; and in areas of softer sandstone, modified or wholly artificial caves of medieval and post-medieval date may be found, most notably in Nottingham.



DEVELOPMENT OF THE ASSET TYPE AS REVEALED BY INVESTIGATION

As pre-existing natural features, caves, fissures and rockshelters do not show 'development' in the sense that a deliberately constructed earthwork or building might (although they may occasionally have been modified). Most development is the consequence of natural processes (for example, roof collapse, scree development, lowering of the water table, fissure migration, etc), whilst human and animal occupants will have introduced bones, artefacts and domestic debris. In mineral-rich areas caves are often also linked with mining working and prospecting, and can contain mine debris.

Victorian 'antiquarian' investigation of such complex sites, whilst conducted within the spirit and intellectual climate of the time, was nonetheless hugely destructive of deposits that - were they available to modern science now - would be rated of the highest value and significance (Figures 4 and 5). The explorations that followed in the earlier part of the 20th century were much more measured and formalised although still on a scale and to standards that would not be acceptable today.

Excavations in more recent decades have been very much more restrained, and acknowledge the rarity of the surviving resource, and are driven by more focused objectives, answerable by rigorous recording linked with multidisciplinary scientific analysis. Such research includes the intensive re-examination of archive material from earlier work to realise its latent potential for scientific dating, and other biological and chemical analyses. On site, it has also been recognised, despite the losses from earlier excavations, that even well known and previously 'dug out' caves can nevertheless retain overlooked pockets of undisturbed sediments and artefacts, as was found to be the case, for instance, at Gough's Cave in Cheddar Gorge in the 1990s, and at Kent's Cavern, Devon, in 2009; the investigation of antiquarian spoil heaps may also be instructive.



Fig. 7. Excavation in progress of a 'gull' or fissure in Lower Greensand rocks (Hythe and Folkestone Beds) at Beedings, West Sussex, infilled by Holocene and Pleistocene sediments. The latter were shown to contain very rare Early Upper Palaeolithic and Middle Palaeolithic flint artefacts.

Perhaps most notably, the recent careful scrutiny of the walls of caves at Creswell (Derbyshire) has revealed evidence for Britain's oldest art (about 15,000-14,000 years ago): whilst two engravings on bone are known from Robin Hood Cave (a horse head) and Pin Hole (a disputed human figure), the discovery of animal figures and abstract forms in nearby Church Hole in 2003-4 was an important new finding (Figure 6).

Such discoveries emphasise that radical advances can still be made even in well-known localities. There is potential for the discovery of undisturbed deposits and chambers associated with known caves, as well as wholly new sites, especially by cavers, but also in quarries and as a result of other forms of development. All these activities can also threaten the resource and this can only be overcome through the establishment of codes of working practice and good relationships between archaeologists and recreational caving groups, natural environment agencies, developers and farmers.

ASSOCIATIONS

Caves, fissures and rockshelters condense and protect evidence for the environment and for cultural activities within the surrounding landscape.

Their associations with contemporary activities elsewhere in the landscape can be difficult to judge given that direct physical connections do not usually exist, and the likelihood that caves may at times, especially in later periods, have been outside the norm of broader landscape use.

For the Pleistocene, however, they are unique repositories of information on contemporary climatic conditions and fauna. The type of animals represented can be used as signatures of the ecological conditions then prevailing. In the Late Pleistocene, for instance, analysis of bones from caves has helped define a succession of mammalian assemblages considered typical of

each phase of cooling and warming – thereby providing a basis for the dating of similar assemblages at other sites, and helping determine the economic basis for contemporary human activity.

Any direct association between human activity and bone debris can only be certain when such material has been modified artificially – as at Pin Hole Cave, Creswell, for example, where cutmarks on bones of arctic hare suggest the selective exploitation of this species, perhaps for its pelts, about 15,000 years ago. At Gough's Cave, Cheddar, a possible association with cannibalism has been raised by the identification of deliberate cutmarks on human cranial material and other parts of the body.

Finds of worked stone, bone, antler and ivory tools help define and at the same time provide associations for material culture from other locations, often demonstrating links over vast geographical distances. Flint blade points and other tools from a fissure at Beedings (West Sussex) are very rare evidence for hunters who ranged far and wide over a tundra steppe which stretched across the dry North Sea to present day Poland and beyond (Figure 7). Later, sea shells and amber from Gough's Cave indicate links between the Mendip area (Somerset) and distant coasts exposed by lowered sea level.

Deliberate deposition of Neolithic and Bronze human remains and artefacts in caves, and especially fissures (such as the Mendip swallets, or the North Yorkshire Windypits) perhaps mirror depositions in artificial pits and monuments elsewhere in the landscape. Later still, other associations include use of caves mainly as places of shelter, as in the Roman period, although they were also occasionally the sites of hoarding, workshops and craft activities. The increasing evidence for post-Roman activity, which may exceed that from prehistory in many instances – remains difficult to assess because of the incomplete or confused archaeological record.

FURTHER READING

The literature on caves, in particular, is immense, with no single generalised overview. Most of it leans towards descriptions of the evidence for Ice Age occupation, a subject of quite intensive recent research, the results of which are mostly confined to journal articles. However, an excellent and up-to-date summary of early prehistoric Britain, where the evidence from caves, rockshelters and fissures is prominent, is provided in *Ice Age Britain* by Nick Barton (2005). An indispensable companion is *Homo Britannicus* by Chris Stringer (2006) which summarises the work of the Ancient Human Occupation of Britain project (AHOB).

The recent discoveries of Upper Palaeolithic rock art are comprehensively described in *Britain's Oldest Art*, by Paul Bahn and Paul Pettit (2009), and *Creswell Crags: A Guide to the Caves and Ice Age Remains* (Creswell Heritage Trust 2007) provides a valuable summary of this important grouping of sites.

A survey of the evidence for cave use in the Roman period is *Romano-British Cavemen: Cave Use in Roman Britain* by Keith Branigan and Martin Dearne (1992).

A Gazetteer of English Caves, Fissures and Rockshelters Containing Human Remains (2001) can be found on the Cave Archaeology and Palaeontology Research Archive (CAPRA) website: <http://capra.group.shef.ac.uk/1/caves.html>, as can the results of the English Heritage-funded Conservation Audit of Archaeological Cave Resources in the Peak District and Yorkshire Dales: http://capra.group.shef.ac.uk/7/cave_audit.html. There is also a newly founded multi-disciplinary Upland Caves Network (<http://www.uplandcavesnetwork.org>). A further website with substantial content and links is hosted by the British Cave Research Association: <http://bcra.org.uk/>.

CREDITS

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