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# Cat Hole Cave

## Highlights

This site has yielded a 'cold' Pleistocene mammal fauna and Upper Palaeolithic artefacts from periglacial climate screes. These have been assigned to the Devensian late-glacial, indicating the possibility that many such screes in Wales date from this final glacial phase.

## Introduction

Cat Hole Cave [SS 5553 8900] contains artefacts and fossils that can be dated towards the close of the Devensian Stage (Late Devensian late-glacial). Numerous flint artefacts of Creswellian type have been recovered in association with a 'cold' fauna including mammoth, woolly rhinoceros, horse, reindeer, arctic fox and arctic lemming taken to be typical of the Devensian Stage. The site was first excavated by Wood in 1864 and was mentioned by Vivian (1887), Roberts (1887–8), Morgan (1919), Garrod (1926) and Allen and Rutter (1948), but it was not re-excavated until the late fifties (McBurney 1959). Campbell (1977) provided a detailed description and interpretation of the site, supported by accounts of the pollen (Campbell 1977), the land snails (Evans 1977b) and the bird faunas (Bramwell 1977). The site has also been referred to by McBurney (1965), Houlder (1977) and Bowen (1974, 1980a).

## Description

Archaeologically Cat Hole is the most important of the inland caves of Gower. It is formed in a crag of Carboniferous Limestone at a level c. 10m above the floor of the dry valley of Parkmill at about 30m OD (Campbell 1977). It has two main entrances and chambers, the largest chamber reaching some 40 ft (12m) maximum width. The cave lies only about 250m from the megalithic tomb of Parc le Breos. The limestone platform outside the cave supports a sequence of terrestrial sediments that was excavated by McBurney (1959) and Campbell (1977) and that can be generalised as follows -

4 Modern soil

3 Weathered scree

2 Scree

1 Silt and sand

A more detailed sub-division of the sequence was provided by Campbell (1977). Substantial deposits remain *in situ*, both in the cave and on the platform outside.

## Interpretation

The first known excavations at Cat Hole were carried out mainly inside the cave and at the mouth to the larger entrance by Wood in 1864, but the results were not recorded in Falconer's (1860, 1868) work on the Gower caves. A brief mention of the remains was, however, made by Vivian (1887), and Wood's finds which were housed in the British Museum (Natural History), were itemised by Roberts (1887–8). These included — two human skulls, numerous flint cores and flakes, a stone hammer, a bronze celt, pottery, shells of limpet, oyster and whelk and remains of bear, fox, hyaena, wild cat, Irish deer, reindeer, red deer, horse, woolly rhinoceros, vole, mammoth, sheep or goat and pig (Roberts 1887–8). Two of Wood's other finds, a gnawed bone and a worked bone, were housed in the Museum of the Royal Institution of South Wales, Swansea (Morgan 1919). Although Wood did not record the stratigraphy, his collection of flint artefacts was assigned by Garrod (1926) to the Upper Palaeolithic, either to the Upper Aurignacian or Magdalenian, and a close resemblance was noted between these artefacts and those recovered from Paviland Cave in south Gower (Sollas 1913).

Wood's finds from Cat Hole were also discussed by Allen and Rutter (1948), who noted that although the faunal list contained some recent species, it was essentially a 'cold' Pleistocene assemblage. They observed that the human remains had been unearthed near the surface in the cave and were, therefore, not likely to be of an early date.

Further excavations at Cat Hole were conducted by McBurney in 1958 and 1959 (McBurney 1959). The results of the 1959 season have not been published, although Campbell (1977) refers to some of McBurney's unpublished data. McBurney excavated outside the larger cave entrance, recording details of stratigraphy and find locations. Most of the 280 flint artefacts, and many of the faunal remains were recovered by McBurney from the scree and weathered scree (beds 2 and 3). McBurney considered that most of the implements were of Creswellian-type culture and described several artefacts not previously recorded from Creswellian assemblages. A small, finely worked needle and bone awl were also recovered. Most of the flints were scattered vertically throughout the scree (bed 2) but were the result of a single occupation. McBurney accounted for the vertical scattering by solifluction or other natural re-sorting. In addition to many of the species recovered by Wood, he discovered the remains of aurochs *Bos*, arctic fox *Alopex lagopus* (L.), mountain hare *Lepus timidus* L., badger *Meles meles*, Norway lemming *Lemmus lemmus* (L.), and a number of unidentified rodents and birds. He considered the fauna to be typically Devensian late-glacial, although Campbell (1977) noted that the list was mixed, with species such as goat, sheep and aurochs more likely to be Holocene in age.

The third excavation was conducted by Campbell in 1968 (Campbell 1977). He excavated adjacent to McBurney's trenches and at the entrance to the smaller cave. The latter site proved unrewarding and was abandoned. Campbell recognised the same basic stratigraphy as McBurney, but he subdivided the sequence in greater detail, and discovered additional mammal, artefact, granulometric and pollen evidence. Land snails were analysed from the sequence (Evans *in* Campbell 1977), and a bird fauna was described (Bramwell *in* Campbell 1977).

Campbell observed that the artefacts from Cat Hole showed surprising typological variation and that they occurred at three of four separate levels, rather than scattered more or less randomly as McBurney (1959) had suggested. Although McBurney had interpreted the scattered artefacts as a result of natural re-sorting by, for example solifluction, Campbell suggested that their vertical distribution reflected a number of distinct occupations; two perhaps of later Upper Palaeolithic age and two of Mesolithic age.

From pollen analysis Campbell interpreted systematic changes in the flora which spanned the Devensian Stage and Holocene. He observed that Devensian late-glacial Pollen Zones I, II and III were well represented in the pollen spectra, but that the record of the remainder of the Devensian and the Holocene was compressed. This reflected that the greatest thickness of deposits at Cat Hole is of Devensian late-glacial age. In relating the archaeological evidence to the pollen record, he concluded that the later Palaeolithic artefacts belonged entirely to Devensian late-glacial Pollen Zone I, and that the Mesolithic artefacts were associated with the early part of the Holocene. The Creswellian artefacts described by McBurney were believed by Campbell to have originated from a horizon time-equivalent to Pollen Zone III (the Younger Dryas). Bowen (1980a) noted that some of the pollen in Campbell's reconstruction might be derived.

Campbell also presented detailed faunal analyses and plotted the vertical distribution of all undisturbed teeth, bones and bone fragments found during his excavations. He concluded that the fauna associated with the later Upper Palaeolithic artefacts of Devensian late-glacial/Pollen Zone I age, would probably have included red fox *Vulpes vulpes*, arctic fox *Alopex lagopus*, brown bear *Ursus arctos* L., woolly rhinoceros *Coelodonta antiquitatis*, horse *Equus przewalski*, red deer *Cervus elaphus*, giant deer *Megaceros giganteus* Blumenbach, reindeer *Rangifer tarandus* L. and mountain hare *Lepus timidus*. Smaller mammals, such as arctic lemming *Dicrostonyx torquatus* (Pallas), Norway lemming *Lemmus lemmus* and tundra vole *Microtus gregalis* were also associated with the Devensian late-glacial sediments at Cat Hole. Campbell demonstrated that faunal elements such as goat, sheep and aurochs were clearly associated with the Holocene sediments at the site, and were not part of a 'mixed' single fauna described by earlier workers. Small mammals such as the woodmouse, water vole and mole were also associated with more temperate conditions during the Holocene. Similarly, Campbell noted that Wood's record of mammoth *Mammuthus primigenius* may have been associated with Devensian sediments of pre-Devensian late-glacial age at the site. This general interpretation of deposits according to the included fauna was also supported by analysis of the bird faunas from Cat Hole (Bramwell 1977).

Detailed analysis of the land snail faunas by Evans (1977b) (*in* Campbell 1977) did not reveal a Late Pleistocene 'cold' fauna but rather one of Holocene age that occurred within the older Devensian late-glacial sediments as an intrusive element; the snails had exploited the cavities of the loose rock rubble which comprised the bulk of the deposits (Evans 1977b). This was particularly well shown by the fauna found in the scree (bed 2). The lithology, pollen, small and large mammal fauna of this complex layer all indicated a cold climate, an open-country landscape and a Devensian late-glacial age; only the molluscan fauna was unequivocally of a warm temperate Holocene character (Evans 1977b).

The deposits at Cat Hole therefore reveal a sequence of changes during cold climate open-country (tundra) conditions when frost-shattered scree accumulated together with a generally 'cold' fauna including, for example, reindeer, arctic fox, arctic and Norway lemming. The site is also notable for a record of mammoth. The deposits also contain pollen indicating a pattern of floral changes characteristic of the Devensian late-glacial. The presence of Upper Palaeolithic Man at this time is indicated by numerous artefacts believed to be of Creswellian-type, and the site shows that variants of this culture extended into Wales. Faunal and pollen analyses clearly reveal the change from the generally cold conditions of the Devensian late-glacial to the Holocene, the latter being characterised by more temperate conditions and the presence of Mesolithic Man. The relative dating of the screes at Cat Hole by faunal, archaeological and pollen analytical means, provides evidence to suggest that scree found at many coastal sections around south Gower, may also have accumulated, at least in part, during the Devensian late-glacial.

Mammal, tools, pollen and sedimentary evidence from Cat Hole Cave have allowed the reconstruction of a detailed sequence of Devensian late-glacial and Holocene conditions. A 'cold' mammal fauna, found in association with Creswellian 'type' culture artefacts, provides the principal basis for dating most of the sediment sequence to the Devensian late-glacial. Pollen evidence also strongly suggests that most of the deposits at Cat Hole date from this time.

## **Conclusions**

Cat Hole has yielded an exceptional combination of evidence for the fauna, flora and archaeology of the last 13,000 years, and is thus an important site for the period following the last major ice age.

## **[References](#)**