



Plate 1. Sandstone outcrop and entrances to Beech Cave workings.

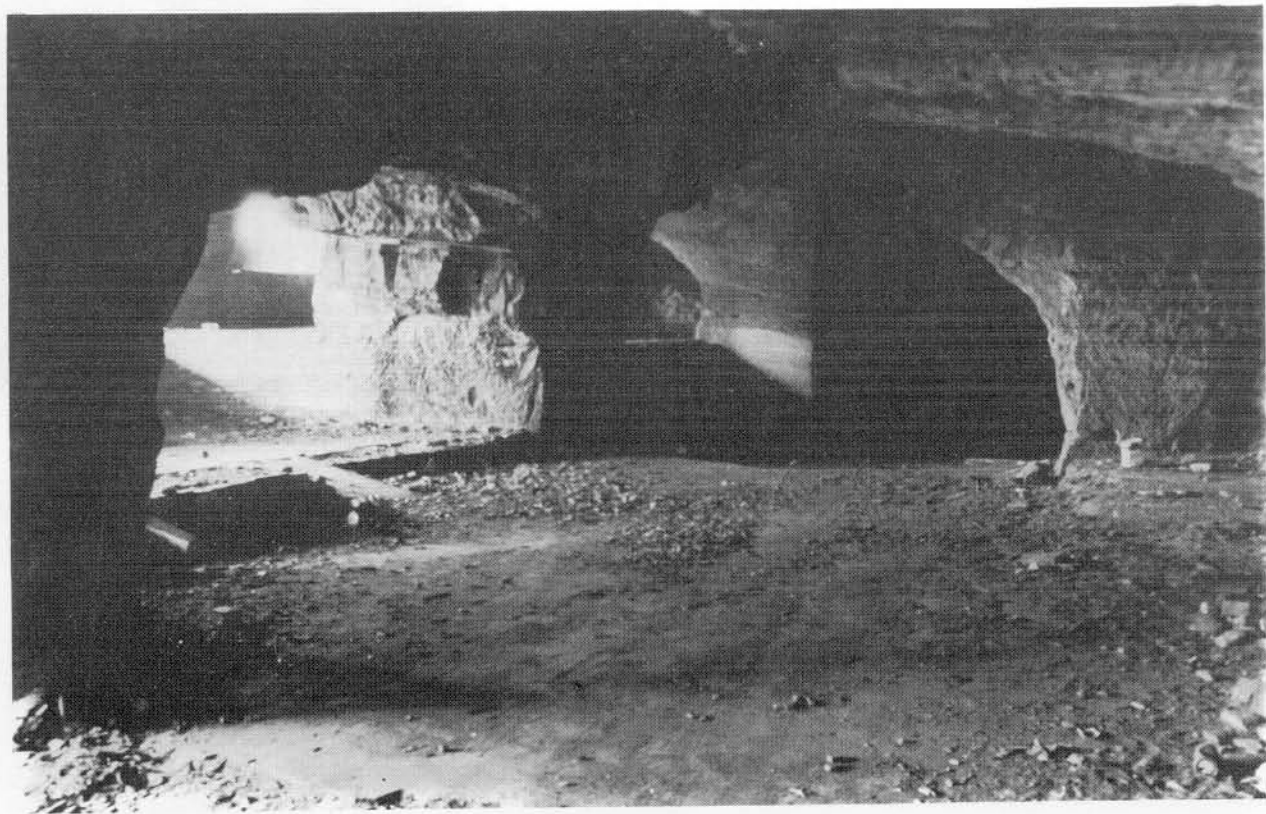
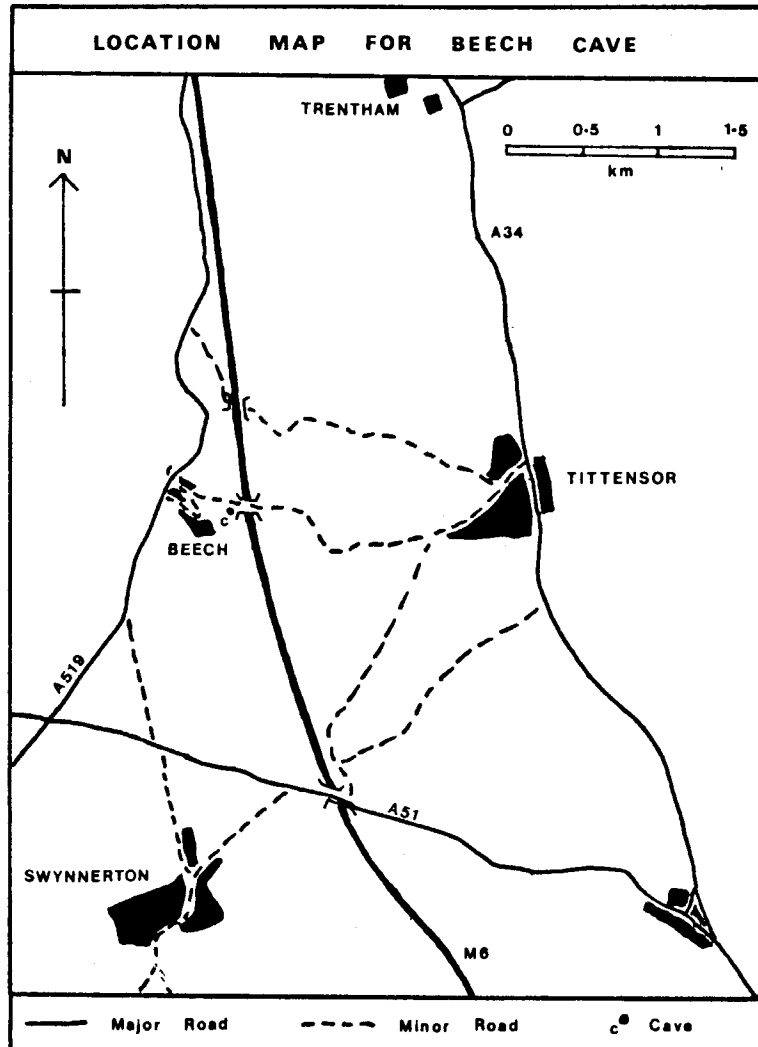


Plate 2. Interior of Beech Cave, Staffordshire.

A SURVEY OF BEECH CAVE, STAFFORDSHIRE

Terry Middleton

The entrance to Beech Cave is situated in deciduous woodland adjacent to the M6 motorway approximately midway between Stone and Newcastle-under-Lyme, O.S. sheet 127, at National Grid Reference SJ 8547 3817. A location map for the cave is included below.

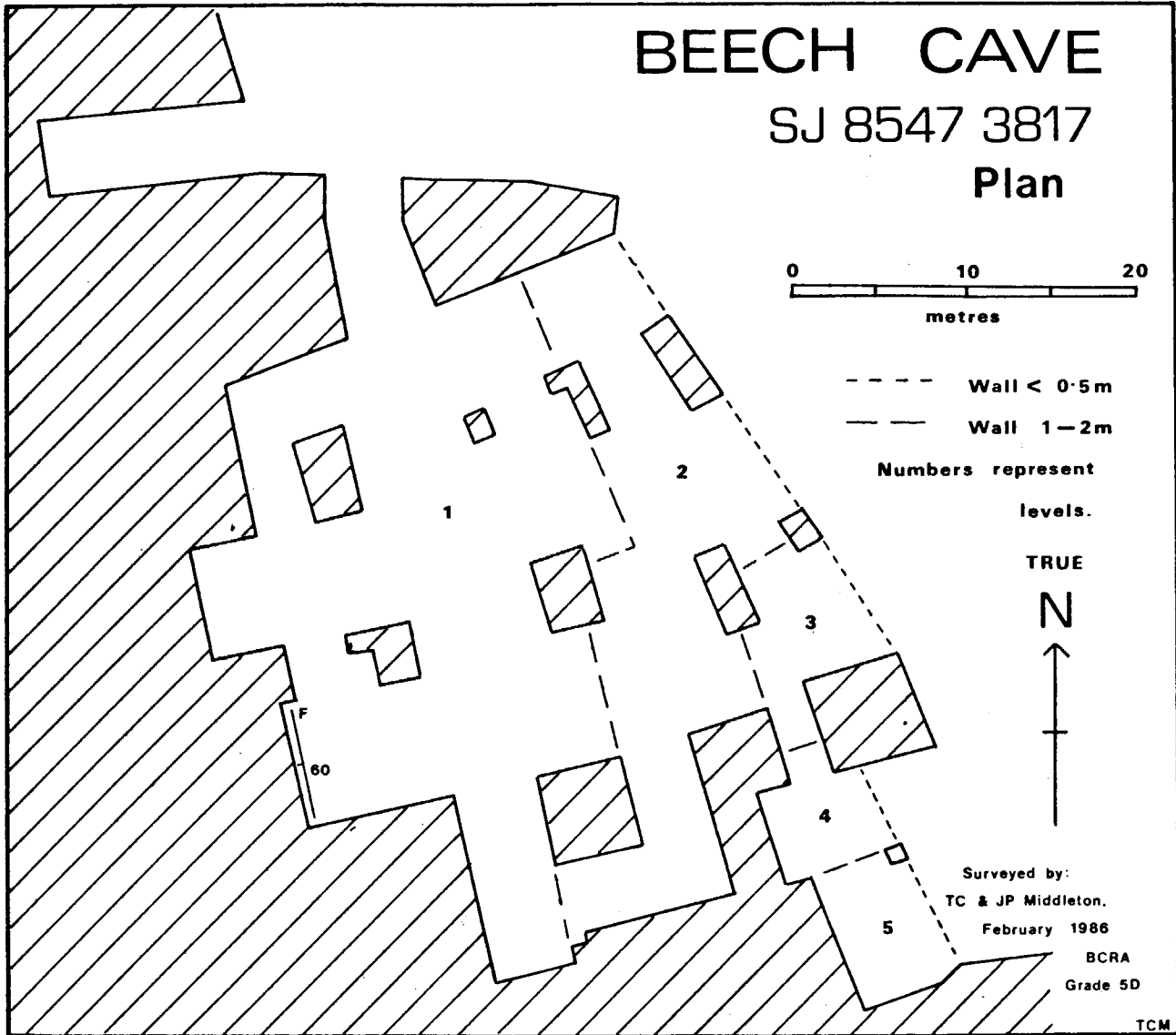


The cave is not natural: it takes the form of a series of pillar and stall workings (Plate 1) whose history appears to be somewhat of an enigma. The earliest references to the area appear in the Trentham Building Accounts for 1633. On August 31st of that year the accounts state:-

"paid to Roger Low for carrying 130 foot of stone from Beech at 22 pence per score as appears per bill."

There were also a number of other similar entries mad during that year and it would appear that the stone was used for building the "New" Trentham Hall. There is also another reference to the quarrying of building stone from the area during the 1680's. There is, however, no mention of the quarry or cave on William Yate's map of 1775 or the 1850 Tithe Map for he Township of

Beech. The Tithe map shows the area to be woodland belonging to Thomas Fitzherbert. The first Ordnance Survey map of the area (1:2,500 1885) marks an "Old Quarry" on both sides of the road. This is also shown on the 1901 edition. The 1924 map names "Beech Caves" and sites them just south of the minor road as they are today. The cave is also marked on the 1:50,000 Landranger Series of 1979.



Locals in the area remember the caves being "out of bounds" during the Second World War and believe that they were used as a magazine for military purposes. However, the local knowledge is conflicting in that some believe that the magazine was used by the Swynnerton Ordnance Factory whilst others believed that it was used by the American base at Trentham. There appears to be no written records of this in either the Keele or Stafford archives and to date (26/3/86) neither the Ministry of Defence nor the Imperial War Museum have been able to shed any light on the topic. Thus it can be seen that it is difficult to date the underground workings.

The rock of the area is a red Keuper Sandstone of Triassic age. The beds dip WSW a 10-15°, i.e. into the mine. The roofs of the chambers tend to follow the bedding planes whilst the floors are horizontal and tiered at five different altitudes: Level 1 is lowest and 5 highest. Each Level is bounded by a wall which supports the next Level up. The total extent of workings is about 1400m². The galleries are mostly 3 to 4m high but vary from 0.5 to 6m. The sandstone units are massively bedded making for good building stone. However, they become more broken and flaggy towards the top of the quarry. Some conglomeratic bands are present and these contain red marl pebbles cemented in a sandy matrix. There are also some thin red marl bands and these have been eroded at the surface leaving various crevices and recesses which are used by climbers as handholds. The roofs of the workings often follow the top of the more incompetent beds.

One main fault can be found underground and this has been marked on the survey. The fault plane dips steeply at 60° in a westerly direction. The only water in the system is associated with this fault zone. It is rich in calcium carbonate and is actively depositing a white calcite flowstone - the only such formation in the cave. The source of the lime-rich water could be either from the overlying marls (these can be seen in the roof adjacent to the fault) or possible from the lime applied by the farmer as this part of the system lies beneath pasture land.

There is little evidence of the use of explosives, presumably because these would shatter the building stone. It also seems surprising that the stone was worked by pillar and stall and not opencast methods. There are, however, other examples of pillar and stall methods being used for building material in the County. At Kent Hills Quarry near Audley (SJ 789509) similar techniques were used for working the Bunter Pebble Beds. No published description of these has been found. As the beds at Beech dip into the hillside and also deteriorate towards the top, opencast extraction methods would have involved removing increasing amounts of overburden so that pillar and stall techniques may have been better.

A number of small hollows have been cut into the pillars in places, some of which could have supported beams or doorways. A line of cut holes leads up the pillar between levels 3 and 4 to a short 1 metre high passage and a 'window' (half bricked up) which appears 6 metres up the western cliff.

In conclusion, Beech Cave provides an interesting and very accessible example of pillar and stall workings and a number of its historical secrets have yet to be unravelled.

ACKNOWLEDGEMENTS

Many thanks to members of the County Records Office in Stafford for help in deciphering some of the 17th century manuscripts, to Bob Meason of the Conservation Section of the Planning and Development for information on Kent Hills Quarry and to a number of the people in the area for their help.

REFERENCES

Victoria History of the County of Stafford. Volume 2. Edited by M. Greenslade and J. Jenkins.

Trentham and Barlaston Building Accounts for Trentham House 1633-39.