

VII.—EXCAVATION OF A CAVE AT BISHOP MIDDLEHAM, DURHAM.

By A. RAISTRICK, M.SC., PH.D., F.G.S.

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During the month of June, 1932, in the course of ordinary quarry operations, workmen cutting back the west face of a large quarry in magnesian limestone, near Bishop Middleham, broke into a cavity, largely filled with

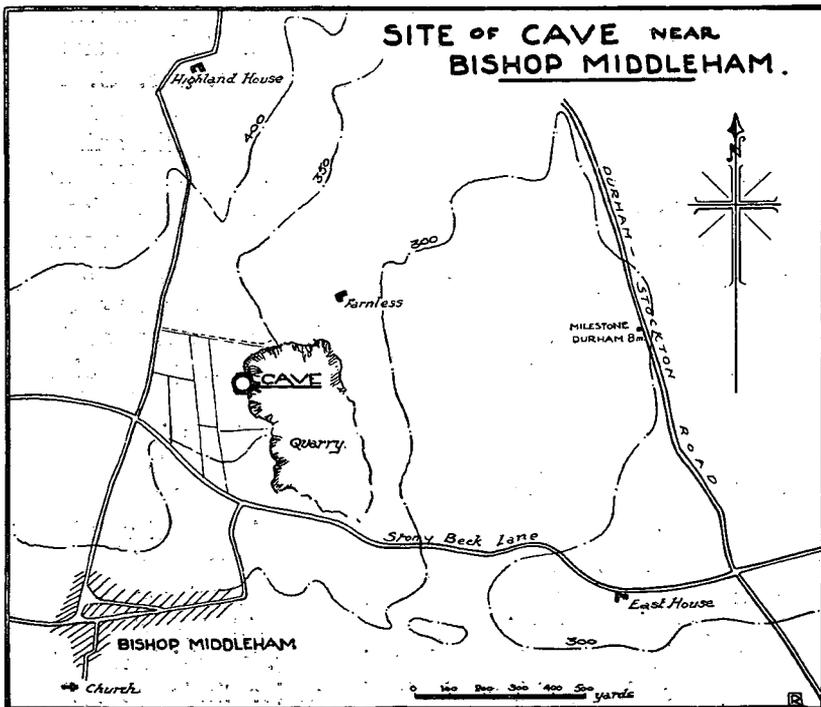
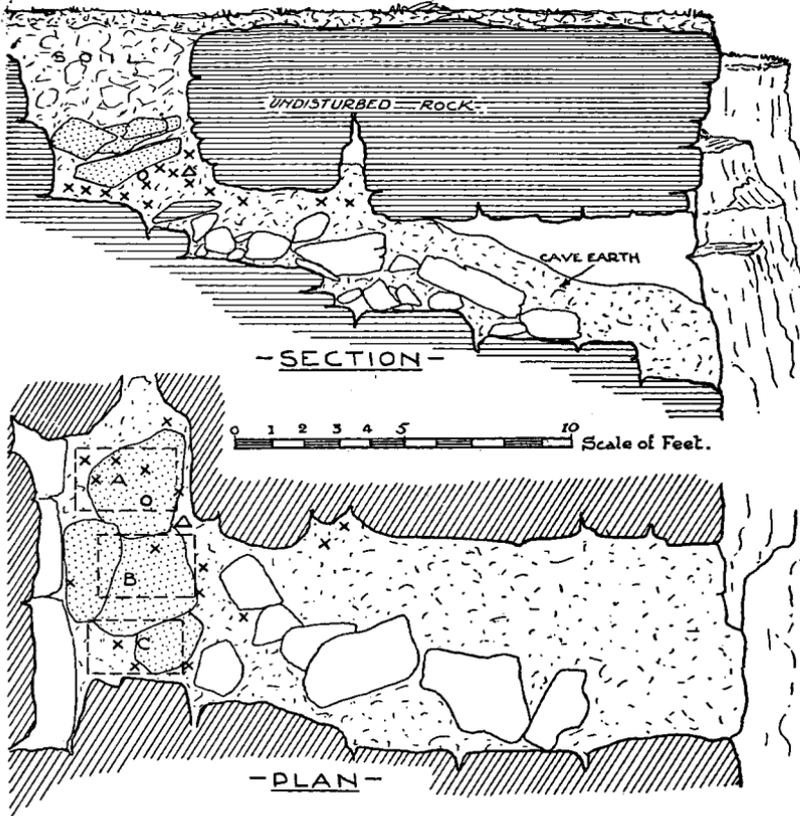


FIG. 1.

loamy clay, and containing a number of bones, some human. The foreman of the quarry at once communicated with the owners of the quarry, Messrs. Pease and Partners, Darlington, and Mr. Cyril Pease kindly invited Mr. R. C. Bosanquet, Professor Hickling, and the writer, to visit and examine the site. Miss Bate, of the British Museum of Natural History, also visited the site at the same time. Among the bones obtained by the workmen were some fragments of human skulls, and it was hoped that the cave on excavation might prove to be an early habitation site, possibly of latest palæolithic or early neolithic date, but this hope was not realized. Through the kindness of Mr. Pease and the quarry manager, ordinary quarry work was suspended for a week, along that face of the quarry, and the cave was completely excavated. The digging was considerably helped by the frequent loan of the services of two quarry hands to deal with the larger blocks of stone encountered, and by the energetic help of Mr. C. E. Marshall of Armstrong College. Miss Bate kindly gave two days to the site, examining and classifying the animal bones as they were obtained, and Professor Hickling shared and continued the work throughout the excavations.

The quarry in which the cave is situated is approximately a quarter of a mile north-east of Bishop Middleham village and eight miles south of Durham, along the Stockton road (fig. 1). The cave is in the west face of the quarry, and first appeared as a cavity about 4 feet high and 5 feet wide, about 10 feet below the surface level of the ground. The opening was nearly filled with brown loamy clay, but in the small spaces between the top of this clay and the cave roof, a number of loose bones were found and collected by the workmen, and a small number of bones obtained from the uppermost part of the cave earth. As no purpose can be served by detailing all the incidents of excavation, an account will be given in explanation of the plan and section, fig. 2, which records accurately the position of all the major finds, and the general aspect of the cave.

**BONE CAVE AT BISHOP MIDDLEHAM
Co. DURHAM - Excavated 1932.**



- A, B, C, ... SITES OF PRINCIPAL BURIALS, SUGGESTED
 'COVER-STONES' ARE STIPPLED.
 x POSITIONS OF HUMAN REMAINS.
 o POSITION OF BRONZE OBJECT.
 Δ POSITION OF WORKED BONE.

A.R. 32.

FIG. 2.

It will be seen from fig. 2 that the cave really consists of two parts, a true "cave" first exposed in the quarry face, and behind this a fissure opening to the surface of the rock, running at right angles to the cave and intersecting it at the back. The first excavation was made from the front of the cave on the quarry face, and continued backwards until the edge of the fissure was revealed, where the roof of the cave rose vertically. This point was laid out on the ground above, and the soil stripped in a direction continuing that of the cave, until the other side of the fissure was found. The fissure was then excavated from the surface and its connection with the cave finally proved.

The material filling the front part of the cave contained abundant minute bones, mostly those of frogs, present in thousands, and a few bones and skulls of very small rodents. These bones in a matrix of brown loamy clay make up the "cave earth" indicated on fig. 2. In this cave earth, shells of mollusca were present in small quantity, and they have been examined by Mr. A. S. Kennard of the British Museum, who reports the following species present:

Goniodiscus rotundatus (Mull)
Helicella cellaria (Mull)
Ananta arbustorum (Linn)
Cepaea nemoralis (Linn)
Cepaea hortensis (Mull)
Marpessa laminata (Mont)

He adds the following note:

"This faunule denotes damp, woodland conditions. It is certainly Holocene and not Pleistocene, and judging from the development of *Cepaea nemoralis* the shells are probably early Holocene."

In addition to the frogs and rodents, occasional mammalian bones occurred in the cave earth, but entirely as isolated bones or fragments; these include sheep, goat, cattle, and possibly wolf, and a few teeth and isolated bones of the badger. As mentioned before, at the top of

this deposit a few isolated human bones were found. On the complete removal of the cave earth, abundant evidence of water action was clear on the floor and sides of the cave. The joints in the limestone were rounded and opened, fragments of stalagmite were present, and the lower layers of the cave earth included frequent lenticles and patches of sharp sand and fine gravel. The evidence was definite that this cave earth was largely water deposited and was in no sense the normal "earth" of an occupied cave. On the floor and walls in many places, staining by manganese dioxide was abundant, a feature frequently associated with movement of underground percolating waters, and this led later to the circulation by unauthorized persons of a report of fire and smoke blackening of the walls. From this report a rank crop of unfounded stories of the occupation of the cave as a place of residence sprung up, and caused much confusion in the press reports of the finds. On the floor of the cave at the base of the cave earth were many blocks of limestone, fallen at some time from the roof prior to the infilling. In practically all cases the fallen blocks rested directly on the rock floor, and the cave earth was washed around and between them. The blocks are shown in fig. 2, the size and position being in all cases accurately measured.

When the small fissure in the roof was reached the top of the cave earth became much more sandy, and human fragments along with a few shards of pottery occurred, mostly at one side of the cave and all in this upper sandy clay. The bones of frog were absent from the material in which the human bones were found. The bones found were at the points marked with a \times on fig. 2, and were the lower jaw and part of the skull bones of a child, a second lower jaw, portions of a scapular, and a few smaller limb bones. These were all mixed and are fragments of several individuals, not parts of a single skeleton. At the base of the large fissure at the end of the cave human remains were very abundant, above the cave earth, in the sandy layer, but they were still entirely unconnected fragments. A

very fine skull (plate x) was found here on top of the deposits, wedged against a rise of the cave roof.

At this point the attack was changed to excavation from the surface, as the cave had become merely a low slit, less than 2 feet high.

The large fissure was filled with soil and rock rubble nearly to the depth of the cave roof, the rubble including much sandstone, a rock not occurring in the immediate neighbourhood. The material showed every sign of being "made" ground, though very little fine material was present, and there were many cavities between the larger stones. At a depth from 4 feet to 6 feet, several large slabs of stone floored the fissure, and a great deal of difficulty was experienced in removing these in such a way as not to disturb anything beneath them. Their size and arrangement are shown in fig. 2. Under the northerly stone (A on fig. 2) a disarticulated skeleton was found, set on one side in the familiar "crouched" position, but not possessing a full complement of bones, the ribs and vertebræ in particular being very scant. This lack of a complete skeleton is very typical of practically all prehistoric burials of late Bronze and Iron age. Near the position of the head the fragments of skull and jaw were found, though displaced from their proper position some two feet, in a patch of the characteristic sand and fine gravel, just under the lip of the cave roof. Several fragments of pottery were associated with this group of bones, and at the position marked in fig. 2 a small bronze object was found. There could be no doubt whatever that here a true burial was being uncovered. Under the other slabs, at positions B and C, other similar groups of bones, with limbs and vertebræ in the crouched position, were found. In all cases the head had been towards the cave, *i.e.* to the east, and the skull, and in some cases the scapulæ and cervical vertebræ, had been displaced, occurring a short distance into the cave, in a sand or fine gravel patch, on top of the cave earth. These burials were made on top of the clay with frog bones, and at a later date, as in no case

does the cave earth occur either upon or among the burials. Between the burial places A and B, a bone point (fig. 3) was found, again on top of the clay and associated with the human bones. In addition to the human remains in the fissure, a few bones of sheep, goat and cattle occurred, though the majority were in the upper layer of the cave earth inside the cave.

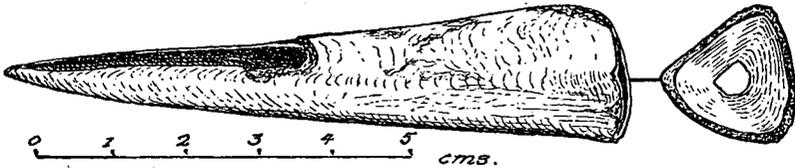


FIG. 3.

The excavation was completed in five days, so that every particle of filling of both cave and fissure was handled and sifted; during the later part of the work debris from the fissure was filled into the previously cleaned out cave. We can therefore be certain that every bone originally present in the deposit, other than the innumerable minute bones of frogs, was seen and collected.

The sequence of events in the filling of the cave is therefore perfectly clear, both from the stratigraphy of the deposits and their contents. The cave is a water-worn hollow in the magnesian limestone, possibly of late glacial or early post glacial date, as no glacial material was found in it at all. During a long period after its formation, water from an adjacent land surface had drained through the main fissure and so through the cave, carrying with it silt, loam, and countless remains of frogs, mollusca, etc., washed from the ground surface. The mollusca indicate damp woodland conditions, and the frogs certainly support this conclusion. This drainage and deposition continued until the cave was almost full, and the silt reached and filled the bottom of the fissure. Along with this debris, a few mammalian bones, mostly small, were washed into the cave. At a subsequent period the fissure was dis-

covered and cleaned out by human beings for use as a burial place, and a large series of burials were made at the rear of the cave. It is certain that the existence of the cave could not be suspected by these people, as the hole between fissure and cave was entirely silt filled. The burials were covered with the large slabs of stone as in fig. 2, and the fissure above them filled with stone and rubble. After the burials had been completed (and they may have extended over a long period), the fissure again became a line of drainage, and water "seeping" through the fissure removed much of the loose and finer filling from beneath and around the cover stones, and washed some of the lighter bones, particularly those about the heads, not fully covered, on top of the cave earth and just into the end of the cave. Such pottery as was associated with the burials was crushed by the settling of the material, and some of this was also washed into the cave. Directly beneath the collapsed cover stones the remains were in ordered arrangement, but all outside them had been moved by the water which brought in the sand and fine gravel.

It is clear from the above that the rôle of the "cave" is purely incidental and accidental, and that the archaeological interest lies in the fissure and its grouped burials. The outstanding problem, of course, is to date as closely as possible the various events and objects here encountered. For this purpose we shall have to consider the fragments of pottery, the bone and bronze articles, the human and animal remains, aided by a critical examination of other similar remains in the north of England. Mr. Reginald Smith of the British Museum has reported on the pottery, etc., as follows:

"The relics submitted to the British Museum are probably not of one date, as the thick coarse pottery fragment resembles the ware of late Bronze age cinerary urns. The interior seems to retain some charcoal, which may be due to domestic cooking or to cremation of the dead. On its own merits this would date 1000-700 B.C., but the two smooth fragments are early Iron age, probably La Tene II (second century B.C.). The larger bone specimen resembles a netting-shuttle as used in modern times, but

ancient parallels are hard to find. On the other hand there is now little doubt that the pointed bone is the head of an arrow or lance of early Iron age date. One with a hole for a pin to fix it to the shaft is figured in *British Museum Early Iron Age Guide*, 2nd edition, fig. 122, from a warrior's grave at Grimthorpe, E.R. Yorkshire; and others, pierced or unpierced, are published by Mortimer, *Forty Years Researches*, fig. 493; Hoare, *Ancient Wilts.*, I, plate vii; *Archæologia*, XLIII, plate 435, and LXI, plate LIX, 2, see p. 444; *Wilts. Archæological Magazine*, XL, 35; Cunningham, *All Cannings Cross*, plate 8; *Devizes Museum Catalogue*, plate xx, nos. 1, 2; *Reliquary*, 1895, p. 92. There are no doubt others, but the Grimthorpe find is the most decisive of all. Further excavation on or near the new site should bring to light other relics of the Brigantes, and any Bronze ornaments would be an interesting addition to the list of early British works of art, such as were found in quantity at Stanwick, near the Tees, about seven miles north of Richmond."

The pottery submitted to Mr. Smith, and that obtained later in the excavations, is almost identical with that obtained in quantity in the early Iron age camps and cave shelters in West Yorkshire, and dated by numerous other finds as about La Tene II. (See Raistrick, *Antiquity*, III, 1929, pp. 165-181, and collections in Craven Museum, Skipton, Yorks.) In West Yorkshire, bone objects are very commonly associated with this pottery, and a few points comparable with that from the cave have been found.

Sir Arthur Keith has reported on the human remains found during the earlier part of the excavation, before the nature of the burials had been proved, hence the reference in the report to "cave-dwellers." The report follows.

"The bones found in this cave represent at least six individuals—perhaps more. To explain their presence in the cave one must suppose it was used as a burial place at one time—where young children and men and women were interred. From the evidence supplied by Mr. Reginald Smith it is likely that the date of the burials was somewhat anterior to the coming of the Romans. If this view holds, then these cave-dwellers would be contemporaries of the people buried in the Danes graves of Yorkshire, and may represent Brigantes or an allied tribe. The state of preservation of the bones makes a pre-Roman date probable. The cave-dwellers; like the so-called 'Danes,' were a long-headed race and not tall or particularly long-limbed as the true Saxons and Danes often were.

“ There is only one complete skull—that of an aged edentulous woman—who depended on her gums doing duty for her teeth. (Plate x.) She suffered from extreme rheumatism of the mandibular joints. She had a narrow head of medium length: length, 183 mm.; width, 132 mm.; cephalic index, 72; the vault was low, its height above the ear passages, 111 mm.; basi-bregmatic height, 134 mm. Her upper forehead was prominent; her supra-orbital ridges strong for a woman, with outwardly jutting ends; above the supra-orbital ridges the forehead was crossed by a groove. Minimum width of forehead, 89 mm.; supra-orbital width, 104 mm.; maximum frontal width, 113 mm. Cheek-bones prominent, the zygomatic width being 123 mm.; bi-maxillary width, 91 mm. The face was very short in relationship to length, and the loss of the teeth accentuated this feature. Length of upper face only 53.5 mm. (68-72 mm. are ordinary measurements). Nose fairly prominent, only 45 mm. long by 24 mm. wide. It is possible the following bones were part of her skeleton: a right thigh bone, which is 450 mm. long, indicating a stature of about 5 feet 5 inches; a tibia, certainly hers, 339 mm. long—very short in comparison with the above femur.

“ There is a fair degree of flattening of the upper shaft of the femur from front to back (platymeria), and of the middle shaft of femur and of the whole shaft of the tibia from side to side. The squatting facet at the ankle is well marked. Also the lower end of the femur and upper end of the tibia are bent backwards more than is now found amongst English people. The ulna, too, shows bending. Her collar bone was delicate, but 141 mm. long. The radius was 333 mm. long.

“ The second individual to be described is represented by a few parts. The limb bones—right and left thigh bones, left tibia, shoulder blade and part of humerus—all bear the marks of immaturity—all belonging to a man about nineteen years of age. The limb bones show no feature which calls for special description, save the extreme development of the squatting facet at the ankle. The length of the thigh bone is 453 mm., giving a stature of about 5 feet 5½ inches. The length of the tibia is 392 mm. There is the greater part of a vault of a skull which may be of this man; the sutures are open, betokening youth. The width of the skull is only 132 mm.; its length is estimated to have been about 185 mm., showing the same narrow head of medium length as in the old woman.

“ A third individual is represented by the hinder part of the vault of a skull. In this case the width is greater, namely 142 mm., but the occiput is cap-shaped, as in long-headed or dolichocephalic folk. No trace has been found in this cave of the flattened occiput of the beaker (Bronze age) folk.

“ There are five individuals represented by lower jaws. One of these may be that of the young man just described. The lower jaws are (1) of a child about 1½ years; (2) a young woman in whom the dentition has just been completed—all save her third molar (wisdom) teeth; (3) a woman in whom all the molar teeth had been lost from disease; (4) right half of a young man's

mandible—possibly that of the young man; (5) lower jaw apparently of a woman; the teeth are very slightly worn. The third molar teeth are completely lacking, having apparently never been developed. One notices in this mandible a tendency to crowding of the teeth. These jaws do not indicate a strong development of chewing muscles. The chin (symphyseal) region is not deep, the depth not exceeding 32 mm. in any of the specimens found. The chin itself forms a wide prominent shelf.

“From these facts one attributes the remains to the long-headed Celtic-speaking people who came into England some centuries before the arrival of the Romans. One has to keep in mind, however, their close resemblance to the Scandinavians of the early Iron age.”

During the excavation of the fissure behind the cave, the fragments of five more individuals were obtained, mostly limb bones, lower jaws, and a few fragments of the skulls. All agree with those submitted to Sir Arthur Keith in showing long-headed characteristics. Several more fragments of the smooth Iron age pottery were found, and a few of the coarse pottery, though these can be matched from several early Iron age sites in the Pennines. The bronze object is unfortunately very indeterminate, being a small rectangular article consisting of two thin plates of bronze, fixed about quarter of an inch apart by three slender rivets. The whole body of evidence, however, is definite in assigning an early Iron age date to the burials, probably La Tene II, about the second century B.C. It is probable that many of the larger animal bones of cattle, sheep, etc., were associated with the burial rites, and in no sense represent either animals that used the cave as a den or the food of “cave-dwellers.”

The evidence of wet conditions and water action at different times in the cave's history are in agreement with what is known of the prehistoric climates from other sources.¹ The immediately post-glacial Arctic period was followed by the Boreal period of dry, warm climate, during which the Mesolithic people entered the north of England. The succeeding Neolithic age was a period of wet and

¹ Raistrick, A., and Blackburn, K. B. The late glacial and post-glacial period in the North Pennines. Part III. The post-glacial peats. *Trans. Northern Nats. Union*, vol. I, pt. 2, pp. 79-103. 1933.

cold (the Atlantic period) with abundant development of alder-hazel scrub over the northern counties. It was probably during this period that the cave was infilled with the loamy clay with remains of frog. An examination of some of this loam reveals abundant pollen of alder and hazel, and supports the picture of alder-hazel woodlands in wet conditions, suggested by the report on the mollusca. The next period, the sub-Boreal, includes the whole of the Bronze age and the early Iron age, and has a warm, dry climate, followed in late Iron age and subsequent time by the sub-Atlantic with warm, wet climate again. The burials of the early Iron age would therefore be made at a time when the climate was dry and the fissure free from percolating water. The succeeding wet period of the sub-Atlantic being the time when the burials were disturbed by a renewal of the underground drainage through the cave and fissure.

The remains described, along with all the other material, will be deposited in the Hancock Museum, Newcastle upon Tyne, by the kindness of Lord Gainford and Messrs. Pease and Partners, to whom again I wish to express thanks for making the excavations possible. I wish also to thank Miss Bate of the British Museum of Natural History for help on the site and in securing the co-operation of the museum staff in determinations and reports on the various finds.



SKULL FROM CAVE AT BISHOP MIDDLEHAM.

