Aveline's Hole, Burrington Coombe.

An Upper Palæolithic Station.

By I. A. DAVIES.

A. INTRODUCTION.

I -DISCOVERY

Aveline's Hole is a rift cavern opening into the cliffs of mountain limestone which forms the east wall of Burrington Combe near its lower end. (Frontispiece). It is 130 feet long, 12 feet wide and its average height is 10 feet. The cave has been written of as Burrington Cavern and The Cave, but all through the locality it is spoken of as Aveline's Hole, which name Sir Wm. Boyd Dawkins used in 1864.

The following is an extract from the notebook of Dr. Walley who lived at Mendip Lodge when the cave was discovered :--

¹" As two young men were chasing a rabbit in Burrington Combe, the little animal took refuge in the crevice of a rock, the lads, not willing to give up the object of their pursuit, procured a pickaxe with which they attempted to enlarge the entrance of the retreat, when a considerable portion of the stone gave way and discovered to their astonishment a cavern of considerable extent. As a very great collection of human bones were found in different parts of the Cave, it became a subject of curiosity and was visited for many months by persons of every description."

The date of discovery was January 9th, 1797,2 and according to original accounts, the mouth of the cave was nearly enclosed by stalagmite intermingled with bones of sheep and deer. Rutter,³ writing in 1829, said that nearly 50 skelctons were found lying with heads under the north side of the rock and feet extended toward the centre of the cave and surrounded by black mould. The Sporting Magazine however, describes the skeletons as lying

¹ This account was received through the courtesy of Mrs. Vernon Hill of Woodspring Priory in whose possession the book now is. 2"Sporting Magazine," February, 1797. 3 Rutter, "Delineations of N.W. Somerset," 1829, pp. 117, 118.

promiscuously, while another writer4 says that they lay at length down the cave, one after the other. All accounts agree that the bones were incrusted with stalagmite. Rutter further says that immense flat stones had been placed over a crack or fissure, and infers from this that the cave was used as a habitation. Stones and fissure are not now apparent.

II .- EARLY ARCHEOLOGICAL WORK.

The Cavern has two chambers, the outer chamber from the entrance to the constriction, and beyond the latter point, the inner chamber, which contains a shaft. Many geologists have dug in this cave, amongst them being Buckland, Beard, Williams and Boyd Dawkins. Buckland⁵ was the first to dig here. He removed many skeletons and a cast in stalagmite which showed venous impressions from the interior of a human skull. All the specimens had been hopelessly lost by 1864, and recent attempts originated by this Society have failed to find them.

The Rev. D. Williams of Bleadon was next on the scene, and by 1829 he had found a quantity of flint knives and some tesserve which he thought were probably used in a game, while Beard, of Banwell fame, is said to have found a large quantity of bones at the bottom of the incline. In Sanford's catalogue of the Pleistocene remains in the Taunton Museum, which was published in various proceedings of the Somerset Archaeological Society, a list is given of the collections of Beard and Williams which had been obtained by purchase. Practically the whole of Williams' and many of Beard's specimens were not labelled with the place of origin, and guesses were made from the nature of the earth still clinging to them. Burrington is not mentioned, though Sanford previously wrote that the cave had supplied bones of bear and fox only.

In 1860 Boyd Dawkins⁶ dug in the Inner Chamber, obtaining a sternal bone of wolf and a tooth of water rat. In 1864 he sunk a shaft of 38 feet into the slit at the end of the Inner Chamber. The only remains encountered were the skull of a sheep at 26 feet, and a boar's tooth at 36 feet. He concluded that the horizontality of the slit is due to its introduction by water, whilst the presence of the portion of sheep's skull was sufficient to prove that the

<sup>W. Tyte, "Memorials of Old Somerset," 1906, p. 22.
Buckland, "Reliquiz Diluvianz," p. 164.
Boyd Dawkins. Proc. Somer. Arch. Soc., 1864, vol. III., p. 167.</sup>

introduction took place during comparatively recent times. He also mentioned that the state of the floor had been complicated by a villager of Burrington who had dug in it after a supposed treasure.

III.—BRISTOL SPELÆOLOGICAL RESEARCH SOCIETY, 1914.7

The above Society carried out the next series of investigations in this cave. Their proceedings were never published, and exact descriptions of the positions of some of the finds have been lost. However, the position of the most important—the skulls—is well established by notes made on the spot by Dr. Palmer. The work done included the removal of stalagmite and cave earth from the floor of the Inner Chamber, near Boyd Dawkins' shaft, and in the lowest part of the Outer Chamber. The treasure-hunter's pit at the bottom of the Outer Chamber was also deepened, the object being to find a continuation of the cave.

The skulls were found 75 feet from the mouth. One skull was embedded in the stalagmite floor, $3\frac{1}{2}$ inches below the surface and with $4\frac{1}{2}$ inches of stalagmite below its base. A certain amount of earth was mixed with the stalagmite and formed a layer between this and the skull. Large portions of other skulls were found near by. They have been reported on by Professor Fawcett. In a hole 4 feet 10 inches vertically below the skulls a human humerus was discovered. Altogether, fragments of at least eleven human skulls, along with a human radius, and a fragment of humerus which was either gnawed or diseased, were obtained from the caveearth and stalagmite.

Numerous remains of a gigantic form of *Cervus* of the Red Deer type were associated with the human remains, together with bones of *Bos longifrons* and the skull of a very large wild cat. These remains were all highly mineralised and adhere firmly to the tongue.

Two flint implements (Fig. 11-1 and 2) were found with the bones.

B.-WORK BY THIS SOCIETY.

Work was commenced in June 1919, and has continued regularly ever since. About 38 tons of material have been removed during excavation. All of this was sorted on the spot and then re-sorted outside the cave.

7 Proc., 1919, pp. 5-8.

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I.-METHOD OF EXCAVATION.

The floor was everywhere covered by a dark coloured humus which varied in thickness from half an inch to one foot. This was formed of decaying leaves and material washed in from the road. On the left or North side of the cave were some bosses of stalagmite. Underneath the stalagmite and humus was a layer of red caveearth always at least 3 feet deep. Below this, in one place only, a layer of different soil was encountered, which was similar to the non-plastic finely stratified deposit of silt in the Inner Chamber.

When working, the humus was first taken off. The stalagmite was then moved and the fragments carefully examined. After this, the red earth was taken out in layers of one foot, the finds of each layer and each part of the cave being kept separate. Large boulders were continually uncovered and had to be quarried before removal. The red earth had been disturbed in some places and roughly sorted, but the excavation had never been carried out to a greater depth than 12 inches, except at the bottom of the incline. II.—ANIMAL REMAINS.

A Summary of the Animal remains is given in the following table :

			Stallag-	1	FEET.	3
1.	Turdus viscivorus	Missel Thrush	×			×
2.	Cygnus olor	Swan	×	×		
3.	Phasianus colchicus	Pheasant			×	×
4.	Perdix cinerea	Partridge		1	×	×
5.	Columba livia ?	Pigeon		×		
6.	Pica rustica	Magpie		×	×	
7.	Corvus monedula?	Jackdaw ?				×
8.	Hirundo rustica	Swallow				×
9.	Myotis bechstini	Bechstein's Bat		×	-	×
10.	Myotis mystacinus	Whiskered Bat			×	
11.	Sorex araneus	Common Shrew		×		
12.	†Lepus anglicus	English Varying Hare	x	x	x	×

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2		Stalag- mite.	1	EET. 2	3
13. †Ochotona spelæa	Cave Pika		×	51	
14. † Dicrostonyx henseli?	Hensel's Banded Lemming	×	×	×	
15. *Lemmus lemmus	Common Lemming	1	×	×	×
16. Evotomys glareolus	Bank Vole		×	×	×
17. *Microtus avvalus	Continental Field Vole		×		×
18. †Microtus corneri	and and and and they			×	×
19, †Microtus anglicus				×	×
20. *Microtus ratticeps	Northern Vole			×	
21. †Arvicola abbotti			×	×	×
22. Apodemus sylvaticus	Long-tailed Field Mouse			×	
23. Apodemus flavicollis			×1		
24. Cervus elaphus	Red Deer	×	×	×	
25. †Cervus sp	Giant Deer	x	x	х	х
26. * Rangifer tarandus	Reindeer		×	х	
27. Bos longifrons	Shorthorn		×		×
28. Quis sp	Sheep		$\times 1$		
29. Equus caballus	Horse		×	×	
30. Sus scrofa	Wild Pig		×	1	
31. *Felis lynx	Lynx		1	×	
32. * Felis cattus	Wild Cat	×		1 1	
33. Mustela putorius	Polecat	1	×		
34. Meles taxus	Badger		x	x	×
35. *Ursus arctos	Brown Bear		×	х	×
36. *Canis lupus	Wolf	-	×		-
37. Canis familiaris	Dog	1		×	1
38. Canis vulpes	Fox		x	x	x

* Extinct locally.

† Totally extinct.

1 Probably recently introduced.

The heavy crosses denote frequent occurrence.

The microtine fauna is described in detail by Mr. Hinton. Below are brief accounts of the other remains :

STALAGMITE.

RED DEER, C. elaphus.

Of normal size and similar to existing Scottish Red Deer. Fragments of antler, a mandible of an old individual, and many bones were found intermingled with human remains, from the surface to 2 feet.

GIANT DEER, C. Sp.

Probably the remains of this species represent more individuals than any other kind found in the cave with the exception of Lepus anglicus, the teeth of which were exceptionally numerous. The bones are very much more massive than those of red deer, and the antlers are flatter in section. The remains are quite as common just below the surface as in the 3rd foot, and were found with the human skulls and many other human bones.

WILD CAT, Felis cattus.

Part of the skull of one individual was found in the stalagmite. It was very much larger than the existing domestic cat.

INSECT WINGS.

Impressions of insect wings were found in the stalagmite from the Outer Chamber.

These proved to belong to an existing species of Caddis fly—*Stenophylax permistus*, Mc Lachlan. Living insects of the same species were afterwards found at some depth in the floors of this cave and Rowberrow Cavern.

IST FOOT.

REINDEER, Rangifer tarandus.

Represented almost entirely by fragments of antler which were flat in section, and of compact fine-grained tissue right through, unlike the horn of the other species of deer found in the cave. Most of the remains occurred in the second foot.

SHEEP, Ovis sp.

These remains which consist almost entirely of teeth, occurred in the first foot only, and may be of modern intro-

duction, though some teeth had the same appearance as the extinct animal remains.

HORSE, Equus caballus.

Teeth, a splint bone, and a navicular bone were found in the top layer, all in a highly mineralised condition. Horse bones were also found, split longitudinally in the characteristic Palæolithic manner, in the second foot along with split limb bones of Giant and Red Deer.

PIG, Sus scrofa.

A large, very worn, highly mineralised incisor.

Fox, Canis vulpes.

Teeth were very common. A few other bones, usually gnawed, were found.

WOLF, Canis lupus.

A few highly mineralised teeth of large individuals.

BADGER, Meles taxus.

Teeth and other bones were common throughout the caveearth. An abnormally large canine was found along with Lemming and human remains, a foot below the surface.

BROWN BEAR, Ursus Arctos.

Represented by two half mandibles of young individuals, one found very close to the harpoon, also by part of a maxilla and by numerous teeth. Found throughout the cave-earth.

POLECAT, Mustela putorius.

Three canine teeth of one individual from the first foot. 2ND FOOT.

LYNX, Felis lynx.

A mandibular ramus and part of a maxilla with one tooth, found 18 inches below the surface along with a fragment of human mandible with teeth, and many other human bones.

Dog, Canis familiaris.

Fragments of maxilla with nearly all the teeth, found a few inches below the harpoon, also some miscellaneous canine teeth. The remains are too large for fox. From the condition of the animal bones found in the cave, dogs were certainly not kept as domestic animals by the people who once lived there. The extremities of bones are quite as common as the shafts and only a few small bones show signs of gnawing. The third foot has not been excavated so extensively as the layers above, and this would account for some of the apparent poverty of species. Only six species came from the stalagmite, but this is probably due to its small area.

There is no room for doubt that the fauna of all four layers belongs to one period, when remains of animals such as Lemming, Lepus anglicus, Red Deer, and Giant Deer are found in every layer. From the frequency with which red deer bones occur, the northern type of microtine fauna, and the complete absence of traces of the pachyderms which disappeared in middle or late Magdalenian times, the period is undoubtedly the close of the Pleistocene.

III .- POSITION OF THE HUMAN BONES.

These were extremely numerous and occurred without any relation to the position of bones in the human body. No large bones were found except when greatly damaged by direct breaking or rolling, but this is due to the efforts of previous investigators. Almost all the remains were found intermingled with flint implements, shell-beads, and the bones of those animals noted above, in the stalagmite or the first and second feet. A few small tarsal and carpal bones and a number of teeth were found in the third foot; they had probably fallen from above. The bones belong to one horizon and were probably deposited at the same time. A few stratigraphic details will make this clearer.

Wild cat and giant deer were found associated with the skulls (found in 1914).

Lynx, badger, and English varying hare were found almost touching a fragment of human mandible; in the earth round these remains were bones of both common and banded lemmings.

Flattened tibia and femur fragments were cut from a boss of stalagmite, and a maxilla of L. anglicus and a humerus of very large swan came from the same place.

Many instances of this type occurred during the diggging. The Chemical Condition of Human Bones found in the Cave.

A small piece of human skull found under the stalagmite in the Outer Chamber was decalcified. A little nitrogenous matter remained. This is not surprising when it is remembered that bones found below the stalagmite of Keltic Cavern where they had lain undisturbed for over 2,000 years, yielded fat when digested with ether. IV.—ARTIFACTS.

STALAGMITE.—A small bone implement which may be an awl, a flint implement with a serrated edge, (Fig. 11—3) and two other small worked flints, and two or three drilled shells, were the only finds from the stalagmite.

1sr Foor.—The most notable find in the first foot was a double-rowed, six barbed harpoon (fig. 10, 1) which the Abbé Breuil has pronounced to be Magdalenian 6 b. It was found eight inches below the surface just above some jaws of Brown Bear and Dog. It is made of staghorn, and the curved surface is polished and decorated with a conventional design made by incised lines, as shewn in the diagram. A similar design is cut in the under surface. The point is rounded and the butt is notched, as if for the attachment of a line. The texture of the cancellous tissue shewn in the harpoon is like that of the giant Cervus antler, and the weapon is very similar to one found in Kent's Cavern, Staghorn harpoons of this type are characteristic of very late Magdalenian times.⁸

The stone implements from this foot are numerous and typical. Fig. 10-4 and 6 are single blow burins, the latter on a broken blade. Fig. 10-5 is a very beautiful gravette point and Fig. 10-10 and Fig. 12-9 are small chatelperron points.

Fig. 10—3, 7, 11, and 17, are knives with typical perpendicular secondary chipping along their backs and the first three are pointed. Fig. 10—8, is an awl with a cutting edge which has been serrated by regular flaking. Fig. 10—9 and 12, are small and extremely thin sharp blades. Fig. 10—13, is a small blade with no trace of a patina though all other flints from this foot have one which is dense and white. Fig. 10—14 and 18, are small points, and Fig. 10—15 and 16, are larger blades of coarser workmanship.

Drilled shells of *Neritoides obtusatus*, Linn, (Fig. 10 – 2), occurred throughout the layer. The holes were all bored in the same manner, possibly with one of the flint awls. The hole was in the same position with regard to the whorl in every bead found. These shells recall similar finds made in many Upper Palæolithic burials, such as the famous Cro Magnon burial, the "gorget and crown" found with the male skeleton in the Grottes de Grimaldi, the ring of shells, perforated and coloured red, found round the head of the "Man of Mentone," and at Ofnet. Ornaments of this kind

8 Burkitt, " Prehistory," p. 140.

are unusual in Neolithic or Bronze Age burials, only one mention of shells, (two cowries), being made by Greenwell.

2ND FOOT.—There was a larger number of unretouched blades in the second foot. They are represented by Fig. 11—1, 5, 9, 11, 12, 13, and 15. Fig. 11—5, and 13, shew signs of wear at their pointed ends and may have been used as awls. Fig. 11—2, 4, 8, and 14, are knives with retouched backs similar to specimens found in the first floor. Fig. 11—10 is a larger Chatelperron point, and Fig. 11—6 and 7, minute points. Many shell beads were found in this layer.

 3_{RD} Foot.—The third foot has not been worked so extensively as the upper two, and therefore a smaller number of typical tools have been found. Fig. 12—1, is a pointed scraper; Fig. 12—2, 3, 4, 5, 8, 10; 11, 12, 13, and 16, are blades, usually with signs of wear near their ends, several bear the retouch found in flints from the upper feet. Fig. 12—6 and 7, are awls, 14 and 15, are rough scrapers showing numerous signs of use along their edges. Two or three shell beads were found. They had probably rolled from above. Some of the flints had a white patina, while others presented a blue or grey appearance. In general, those flints with the densest patina are found in the upper layers and flints from some depth are blue or grey through a superficial layer of chemically altered stone.

The stone industry of the three feet undoubtedly belongs to one horizon. Burins, and Gravette and Chatelperron points are found in two stages of the late Palœolithic culture, —Aurignacian and Tardenoisian. Now all the flints are small, none being longer than three inches, so that it is unlikely that they are Aurignacian, also, the Gravette point has been made into a knife, which is often the case in Early Tardenoisian levels. There are practically none of the geometrical microlithic forms which are usually found in the later Azilio-Tardenoisian levels, so the industry must belong to a very early phase of the latter culture.

The harpoon with its trapezoidal barbs and decorative incised lines is undoubtedly Magdalenian, 6 b, and has been identified as such by the Abbé Breuil. However, it is probably a case of culture-drift, since no Magdalenian forms are to be found among the flints, and also the weapon is made from the outer part of a coarse stag-horn, although reindeer antler fragments are found fairly abundantly at the same level in the cave. I feel convinced that the weapon came from the south where the reindeer had become scarce or extinct, for no craftsman would use stag-horn if it were possible to obtain reindeer antler.

Some light may be thrown on the presence of Tardenoisian tools two feet below the Magdalenian harpoon when a somewhat analagous case is mentioned. It has been shown that an Azilian culture existed at Mentone, (Grotte des Enfants), at the maximum range of the reindeer, *i.e.*, in Magdalenian times. These horizons occurred directly above an Aurignacian layer, and their industry may be considered to have evolved from that found in the latter. This sequence of cultures is found throughout the Mediterranean basin, the Magdalenian culture being absent. There are indications that the same state of affairs existed in England. Magdalenian artifacts have been found at Cheddar, and some Magdalenian finds appear to have been made in Kent's Cavern, but this evidence is too meagre to establish the existence of the Magdalenian peoples in England.

The flints from Aveline's Hole are different in workmanship, and very much smaller than those from Cheddar, but very similar to many flints from Kent's Cavern and Robin Hood's Cave.

C .- SUMMARY,

The fauna is characteristic of the late Pleistocene, and is the same throughout that part of the floor which has been explored. The artifacts are early Tardenoisian or late Magdalenian, agreeing with the determination of the fauna. The human remains which were everywhere associated with the fauna undoubtedly belong to the same horizon, since no trace of polished stone, or metal weapons, or of any culture other than late Palæolithic can be found in the cave. From the state of the block in the entrance, and the position of the remains when the cave was discovered, it seems probable that it was closed very shortly after the bodies were deposited in the cave.

The non-plastic, finely stratified earth which Boyd Dawkins thought was modern, cannot be other than Pleistocene, since earth of a different texture with giant *Cervus* remains was found on part of its surface.

D.-CONCLUSION.

From the evidence obtained both during our work in the last two years, and that given in rather scanty accounts which have appeared in several works and proceedings, the presence of the bodies may be accounted for by anything rather than ceremonial burial; probably by some catastrophe. The block at the cave mouth may have been placed in position by survivors; but it was probably due to a fall of rock from natural causes.

Old Red Sandstone pebbles were common in the floor of the cave. At present, the nearest sandstone is to be found some hundreds of yards away. Even if they originated in the Dolomitic Conglomerate which comes to the surface at the summit of the opposite bank of Burrington Combe, the floor must have been deposited quickly. This occurred after a very moist period which could be synchronised with one of the short periods in which the snow line descended at the very close of the Pleistocene epoch.

We may conclude that the people whose remains were found in the cave were contemporaries with the late Magdalenians of S. France and possessed a culture which was Tardenoisian; possibly a transitional stage between Aurignacian and that culture. This industrial evolution may have taken place in England.

It is to be regretted that so many investigators dug in the cave at the early part of last century, and in such an unsystematic manner, but Human Palæontology was an unknown science at that time. The complete absence of the specimens found by the early excavators is a great loss, but luckily, enough human bones have been recovered recently to show the racial type of the people who lived in this part of Britain at the end of Palæolithic times, with the reindeer, giant deer, and lemming.

Quite a small part of the floor has been explored up to the present (Frontispiece). The excavation of the right-hand side of the cave should bring to light many more remains. The work is slow, three fragments of flint are found to a ton of earth on the average.

I am indebted to Mr. Miles C. Burkitt, M. l'Abbé Breuil, Dr. Marett, Mr. Reginald Smith and Professor Sollas for the practical interest they took in the work in the cave, and for the identification of the artifacts, to Dr. Andrews and Mr. Martin A. C. Hinton of the South Kensington Museum for the determination of species of almost all the mammal remains, and to Mr. E. T. Newton, F.R.S., for the identification of the bird remains. The excellent photographs shown in the frontispiece were taken by Mr. J. H. Savory.

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FIG. 11.

