Fourth Report on Aveline's Hole.

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Notwithstanding the deplorable weather during the past season which has converted much of the deposit within this cave to a quag, work has gone forward rapidly and since last going to press fiftyone tons of material have been removed and sorted without,—the largest quantity since the inauguration of work in 1919. Though few typical stone implements have been brought to light important discoveries were made of human and animal remains and artifacts. The old spoil heap at the end of 'the entrance shaft has almost disappeared and considerable work done below its site. A little work was done in the vestibule. The results of these investigations will be enumerated under the headings of their several localities.

VESTIBULE.

The cave mouth opens directly on the main road from Bristol across the Mendips and consequently receives the attentions of many wayfarers, one result being that in Spring an attempt was made to purloin the gear whereby earth is taken from the Outer Chamber. In the course of many years the floor of the vestibule has been trodden into a hard compact pathway, exceedingly difficult to remove, but, after the upper humus had been scraped away, remarkably slight modern admixture was found in the deposit. Animal remains were scanty, with the exception of a large number of small fragments of shed reindeer antler. A few human teeth and a phalanx were taken



FIG. 1.

from against the wall. The artifacts include ten flint blades and a three-blow burin or graving tool. (Fig. I, No. 2.) The broken flake, whereon the blows were struck, is stout, extensively fire crackled and patinated a porcelaneous white. Two flints found in association were in the same condition. This is the second example of the burin from Aveline's Hole, a single blow burin on a broken blade having been discovered in 1920, a few feet beyond the vestibule.

OLD SPOIL HEAP.

Herein were found a quantity of small human bones and teeth, animal remains referred to species already reported on, split long bones, a few atypical flint blades and a pygmy knife (Fig. I, No. 4). THE SHAFT.

The area examined lies between 48 feet and 72 feet from datum and right across the cave. Within these limits the floor was undisturbed save that beyond 70 feet from the cave mouth the whole floor had sagged downwards. This is probably due to movement of the limestone blocks whereon the deposit rested or possibly the great weight of the spoil heap breaking the thin stalagmite pavement and forcing the floor into the hollows between the blocks. (See Fig. 2.)



Section across Cave at 70 ft. from datum. FIG. 2.

The upper floor levels were stripped off in 1922, and have been reported on. As elsewhere in the cave the floor was of an argillaceous red earth mingled with angular blocks of limestone. Throughout were found evidences of hearths, extending from wall to wall, but nowhere was the charcoal very abundant.

At 48 feet from datum, from one to three feet in depth, digging against the South wall brought to light a number of fragments of giant deer antler, remains of *Lepus anglicus*, lemmings, and other rodents, together with bones of giant deer and possibly horse, split longitudinally, and a flint blade.

Between 50 and 60 feet, amongst charcoal, was discovered a stout narrow flint knife (Fig. I, No. 1). The blade bore signs of use upon its edges. In addition, two blades of flint, a damaged maxilla and three crushed mandibles of giant deer with teeth, a magnificent mandibular ramus of the same animal with the ascending ramus intact, and all the teeth in place, humerus and metatarsal fragments, split ungulate long bones and ribs, and a canine, premolar and molar of brown bear were taken from this area, all somewhat scorched or fire blackened. They were associated with antler fragments of the deer, including one of a beam with frontal bone attached, a hare maxilla, teeth of a smaller deer, a carnassial of a large fox and a lemming jaw.

On removal of the spoil heap, at 60 to 65 feet from datum, from the north wall to five feet outwards traces of a hearth, fifteen cheek teeth of giant red deer, and some rodent jaws were found near the surface. At a depth of six inches fragmentary human bones were encountered, and, as far as possible, the soil removed. Here the soil was somewhat darker than elsewhere in the occupation layer, but undisturbed. Excavation demonstrated that the bones continued to occur to a depth of five feet. All the evidence tends to show that they belong to a double ceremonial inhumation extending to a layer of rounded gravel subjacent to the plastic cave earth.

Unfortunately the majority of the bones were badly crushed in the fall of a large block of limestone weighing about seven hundredweight (See Fig. 3). This block came from the roof, and had remained for a considerable time for some deposit had formed on it. About a third of the osseous remains and some flint blades were extracted from beneath this block. These were driven by the fall to the empty spaces below, and there may yet be others unrecovered for reasons which will be given below. Most of the remains were found within the space of one foot between the block and the north wall, though some were found on the south side.

The finds include two platycnemic tibiæ and fragments, three humeri, two femurs, two scapulæ, two radii (one decidedly stouter than the other), fragments of mandible with teeth, skull fragments, pelvic fragments, vertebrae, phalanges and tarsal and carpal bones. The skull fragments are interesting since some have a dark olive green tint, shading into black, which contrasts with the yellow or cream coloration observed in other human skulls and fragments

from the cave. Moreover, many of the bones show on their surfaces traces of red pigment, which hitherto has not been found in Aveline's Hole. The bones were merely tinged with red in parts, not of the deep uniform colour so remarkable in the specimens from Paviland and Barma Grande. Neither was the earth around tinged. It is hard to say whether this scanty colouring from Aveline's Hole is due to the same custom. The cave is wet and it may be a deposit left by the constant trickle from above. Possibly these traces of red came from the garments of the individuals. We know that some primitive peoples employ ochre upon their persons as a vermicide in the same way that reddle is applied to sheep.

The remains were interred with more ceremony than was accorded most of the individuals who found a resting place herein. Drilled marine shells from other parts of the Outer Chamber have already been reported; from this burial a drilled tooth of giant red deer was taken (Plate VII, No. 6). The root was perforated, the boring being directed from both sides of the tooth and meeting in the middle, and each orifice appears to be countersunk. Furthermore, a damaged incisor of horse was discovered among the bones (Fig. I. No. 7). It had been drilled in a similar fashion to the deer tooth, and the root was engraved with at least two series of parallel marks by a burin or some allied instrument. Only a fragment remains. Probably the tooth was worn about the neck of the deceased as an amulet. Two upper canine teeth of female pig are interesting. (Plate VII, No. 6). They, also, had perforate roots, but the tips of the latter were broken away. A hollow has been pared in the crown of one specimen. The upper canines of female pig are still used as charms by the natives of Papua. Two further incisors of deer are shown in the plate; one has a shallow groove cut into the root : the root of the other is notched. Possibly some magical significance was attached to deer incisors, for eighteen specimens were extracted from amongst the bones, a number which exceeds the total from elsewhere in the cave. All were scorched by fire.

An interesting find made among the bones found against the cave wall was a fragment of the shaft of a deer tibia (Plate VII, No. 5), 12 cms. in length. This broken bone bears on its surface two series of six equidistant cuts. The marks were not made by a graver, but with a knife, the face of the bone being pared away.

The flint implements include the broken end of a retouched knife bearing the lightest patina yet observed in the cave (Fig. I, No. 3). Unlike the majority of implements bearing secondary chipping, the retouch is directed from each face. Altogether, twelve blades, most of them damaged, and two pygmies were discovered in the burial (Fig. I, Nos. 5 and 6). The former appears to be a typical Tardenoisian form, such as have been found in the Pennines and at Scunthorpe, but the range in time of pygmies in the north has yet to be worked out; moreover, this specimen may have filtered through from above.

Near the western extremity of the burial a nest of seven Ammonite body cases was brought to light (See Plate VII, No. 1). They lay near some fragments of skull and jaw, and it therefore seems not unreasonable to suppose that the head of at least one individual lay in this spot. Since Ammonites are foreign to the Carboniferous limestone of Burrington Combe they were submitted to Mr. J. W. Tutcher of this Society, who kindly prepared the following report :---

"The five fossils submitted to me consist of Ammonite body chambers from the Lower Lias. Two of the fragments belong to the genus Arnioceras, two to Coroniceras, and the other to Caloceras. They indicate deposits of Hettangian and Sinemurian Ages. Caloceras (Hettangian) occurs on the Mendips above Harptree, but the other two genera (Sinemurian) would not be found there. The condition of all the specimens suggests a locality further east,—Stone Easton or Radstock; or north of the Mendips, e.g., the flanks of Dundry Hill. These are the nearest probable sources, but they may have come from more distant areas."

The practice of collecting and carrying fossil shells was well nigh universal in late Palæolithic times. In the station of Kesserloch, and with the burial of heads at Ofnet, fossils were found which had been drilled for suspension as personal ornaments. No evidence of work can be observed on the Ammonites found here.

A rectangular slab of old red sandstone was discovered on the outer side of the fallen block. Its dimensions are 30 cms. by 26 cms., and the faces and edges are exceedingly smooth. There is reason to believe that this also was associated with the burial—possibly as a headstone—and the fact that this material is scarce in the cave lends additional support to the conjecture. Since 1920 but one block of old red sandstone of this magnitude has been found within ; most of the rare fragments were very small. Rutter, writing in 1828, states that tesseræ which may have been used in some game were discovered here, and goes on to relate that flat slabs were placed to bridge chasms between boulders ; he may have had in mind objects of this description.

Numerous animal remains were discovered among the human bones. They include molars of giant deer, and a smaller deer, teeth





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of brown bear, deer vertebræ and antler fragments, an astragalus of horse, small rodent jaws with lemming, a metacarpal of bustard, a metatarsal of peregrine falcon, bones of ptarmigan, black grouse, wild duck and passerine forms; and split long bones. The burial appears to have been made in the hearth (See Fig. 3), and hence the animal remains may have been introduced without intention.



A series of accidents protracted the removal of the burial and there may yet be bones in the recesses below. In order to facilitate operations, a small block of limestone resting alongside the remains was extracted, whereupon the whole floor collapsed, sinking about four feet. Subsequent examination showed that at this point the floor consisted of two feet of red earth and stones above a layer of sub-angular gravel and stones, the whole resting upon a bridge of large limestone blocks, which had manifestly fallen from the roof. They were keyed loosely together with hollows below and between them, and there is some indication that the cave extends for some considerable depth. At 64 feet from datum material has been removed to a depth of ten feet below the original floor level, and though the rift has narrowed somewhat, there is yet no sign of rock floor at this point (See Fig. 3). At 30 feet from datum rock bottom has been discovered seven feet from the original floor level. The seven feet of earth and stones extended to 60 feet when the rock floor suddenly descended. Five feet of this vertical step is now exposed.

From the vestibule to this point the floor is invariably heavy and sodden, especially on the damper south side, though a dry pocket was discovered on the north side, 20—30 feet from datum, and herein the harpoon and half the stone artifacts were brought to light. After the descent of the floor the surface is drier, and above the burial the soil was so dry that during the past winter it was powdery, notwithstanding a heavy drip or trickle down the south wall opposite that still carries red earth from the limestone masses above the roof. The desiccation of this region may be accounted for by the drainage of the water entering through the cave-mouth down this step, thus leaving the surface beyond dry.

Thus, recent excavation in the shaft has revealed the history of a typical derelict cave in the early stages of inaction. The slope of the shaft sweeps beyond the cave mouth uniformly until the roadway is reached. This glacis without is the ancient vestibule floor, but the limestone walls of the Combe-at present very much weathered and rotten-have receded, leaving it exposed to the weather. Before the roadway was made the slope ended four or five feet above the combe bottom, and thus escaped the water which drained down the Combe. Prior to Magdalenian times, the period wherein the red earth of the occupation layer was laid down-and probably in Mid-Pleistocene times-the Combe floor was at a higher level, and some of the water from the stream which eroded the Combe entered the cave. At the close of this period, when the head of water entering was insufficient to flush the hinder passages of the cave the Inner Chamber became silted up with yellow loam, and we know from the results of Sir William Boyd Dawkins' excavations within, in 1864, that this deposit reaches a depth of over thirty feet. The loam is not argillaceous, is finely stratified, and has every appearance of precipitation from stagnant or slowly moving water.

With further deepening of the Combe the cave entered on a third phase—it was no longer a swallet. Such water as entered washed in gravel and humus, but probably most of the new floor came by way of the drip from the roof, as the red insoluble residue of the limestone. Moreover, frost and other agencies continually brought blocks down from the roof until, when the Magdalenian harpoon was dropped within, the deposit had attained a thickness of six feet. With lofty overhanging cliffs it was inevitable that the cave mouth should get blocked by a fall of rock, and this occurred in very late Palæolithic times, for no artifacts or faunal remains of a more recent period have been found within.

Sealed against the weather and its effects, Aveline's Hole ceased to function as an engine of denudation, and stalagmite grew apace. Before excavation the apparently firm floor at the end of the shaft was resting on a bridge of great blocks, keyed loosely together, wanting but the least effort to upset equilibrium. The gravel below the red earth had been washed free of soil by the constant infiltration of water, and the whole arch was too feeble to withstand a stream of any magnitude.

Had the cave remained unsealed the drip would have eventually dissolved some part of the blocks until the balance was disturbed and water from the rocks had done that which excavation has accomplished. After the settling of the floor the great stalagmite bosses and shelves with their contents of human bones, flints and animal remains would hang high above the new floor level. By some such process did the *Machairodus* teeth remain suspended, as it were, above the middle Pleistocene of Kent's Cavern, and the teeth of the great cave bear rest high above the Roman coins and pottery in Uphill Cave. Had the stone plug in the mouth of Aveline's Hole been removed by some cataclysm a great mass of detritus would have filled the space within by imperceptible degrees, with a consequent settling of the Pleistocene deposit, leaving the mural stalagmite

111/11 50 0 Floor Rock

Section down Shaft, 40 to 70 ft. from datum.

FIG. 4.

high and dry above its contemporary red earth, and the bones therein as a pretty problem in chronology for the archæologist.

While clearing away the second foot of floor at 70 feet from datum and against the south wall a second find of broken human bones was made (See Fig. 4). Falls of rock and earth in the region were so extensive that it was judged best to leave this burial until a wide area of floor surrounding it had been removed, and this work is now well advanced.

As far as could be ascertained this was not a ceremonial burial, but investigation may show otherwise. The associated finds were six flint blades, several tarsal bones of horse, numerous teeth of giant red deer, a tooth of very young brown bear, split deer long bones, and some bird remains. The human bones include a platycnemic tibia, calcaneum, femur, humerus, ulna, vertebræ, tarsal and carpal bones, phalanges and teeth. The thin sagging stalagmite floor was uncovered a few inches above. Against the south wall, and so close to the bones as to be regarded in association with them, lay the beams of three giant deer antlers with the frontal bones attached, and several broken tines and incisors of the same beast.

NOTE ON MIGRATORY EVIDENCE.

M. le comte de Saint-Périer in the *Revue anthropologique*, May —June, 1920, describes a method whereby evidence of the migrations of the Magdalenians of Lespugne was obtained from the antlers of reindeer and red deer found amongst the cultural relics and hearths left by those people. These methods may be applied to the material from Aveline's Hole.

Up to the present, remains of at least thirty giant red deer the *Strongyloceros spelaea* of Owen—have been found in the cave. This includes a quantity of antler, which, with the exception of one tine, which had been shed, came from living specimens that presumably were killed for food. Several beams have been discovered, and all have the frontal bones attached. On the other hand a considerable quantity of reindeer antler has been found, and all is shed.

The antlers of the stag appear first in April; in July the burr appears, cutting off the blood supply, and marking the full developement of the organs. The process is complete in early August. The antlers are shed in February or March.

The reindeer enjoys the distinction of being the only species of doer of which both sexes bear antlers. The male antlers are out of velvet by the end of August, to be lost in November, while the

females or young males lose theirs in May or early June. Thus it appears that formerly reindeer dwelt in Mendip in spring or early summer, for the shed antler from Aveline's Hole belonged to females or very young males. The fragments are all small and some appear to be broken into short lengths as if for easier transportation. Moreover, they are slender and smooth, lacking the deep grooves and ridges found on those of the adult male. The migratory habits of the reindeer are so variable that we are unable to tell how long these animals remained in the district after the young had been born in Spring.

Hitherto no bones or teeth of this animal have been found in the cave, and from this negative evidence we may infer that men and reindeer did not range in the district at the same season; for red deer remains are abundant, yet bones of the reindeer, which was at least as easy to kill and more desirable for food, in addition to being the raw material of fabrication, is absent. Unlike the late Palæolithic inhabitants of southern France, the hunters of England did not follow the migrations of the deer.

In the Pyrenees and elsewhere we learn that the remains of reindeer greatly outnumber those of the stag. The reverse is the case in Aveline's Hole. Possibly this indicates that the reindeer was getting scarce, probably through the damp climate of the period; a conclusion drawn from the molluscan remains found here.¹ There is no evidence that the climate was more severe. The discovery of the banded lemming in the island of Unalaska, the northern vole in Holland and Germany, and *Microtus nivalis* in the Rhone delta, discount all conclusions, drawn from a fauna of this nature, that the conditions were frigid.

The hunters decapitated the red-deer and brought the heads into the cave, and from this fact we learn that, while in spring they followed the chase elsewhere, they dwelt therein some time between the end of July, and the end of February, in which period they killed the stags. In Aveline's Hole the hearths are thin and finds of artifacts scanty, and from this we may infer that their periods of stay were of short duration. The distribution of game may have forced them to rove incessantly, unlike the denizens of Lespugne, who were troglodytes from November to April. The specimen of *Pseudomelania heddingtonsensis* found last year shows that their wanderings had led them into Dorset.²

> 1 Vol. II, No. I, p. 33. 2 *Ibid*, p. 10.

In conclusion I wish to thank Mr. E. T. Newton, F.R.S., for a further report on Avian remains. Amongst the bones found in the stalagmite shelf he has identified Ptarmigan and Snow Bunting. The quantity of ptarmigan bones found in the cave is interesting, in view of the abundance of that bird's remains at Chudleigh and Merlin's Cave, Symond's Yat. I have also to thank Miss D. A. E. Garrod and Messrs. M. A. C. Hinton and J. W. Tutcher for help received in the past year.

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