

ART. IV.—*The Dog Hole, Haverbrack*. By DON BENSON
and KEITH BLAND.

Read at Carlisle, April 1963.

THIS cave lies on the south-west slope of Haverbrack Bank at a height of 200 ft. above O.D. Map Ref.: SD(34)/803484. It was partially excavated in 1912 by Dr J. W. Jackson, F.G.S. (see CW2 xiv 262-271). At that time, the cave was known locally as the Fairy Hole; since then it has been exclusively referred to as the Dog Hole, probably as a result of Dr Jackson's finds.¹ In October 1956, a chance discovery by members of the First Milnthorpe Scout Group, made possible a breakthrough into a larger cavern below. Since that time, work has continued by kind permission of Brigadier Tryon-Wilson, and the excavation has now reached a depth of 30 ft.

Before 1912, the cave entrance, a vaguely oval opening, measuring at its maximum width 6 ft. by 4 ft., and set in an almost horizontal plane, was partially blocked by four rough limestone lintels. Two of these were removed in 1912 and shortly after work had begun in 1956 one more lintel was removed to facilitate excavation.

The original shaft dug out by Dr Jackson to a depth of 15 ft. was found to narrow to an opening of 3 ft. Beneath this opening, a lateral cavern extended in a south-south-westerly direction for a distance of 19 ft. The "floor" of this cavern was composed of clean, loose, limestone blocks sloping down at the angle of rest from the opening above. During the removal of this slope the cave was found to extend back in the opposite direction to the north-east and progress downwards almost vertically beneath the top shaft.

During the course of excavation, no clear stratifica-

¹ In addition to horse, pig, goat, and sheep, Dr Jackson recovered the remains of 50 dogs and what were considered to be 5 wolves.

tion, nor any trace of an occupation layer was found. However, three distinguishable zones were noticed. Zone C: on top of, and intermingled with the loose rock in the southern cavern were a large number of red deer antlers; of these the majority were cast. Some antlers showed signs of human activity. These antlers were in a saturated condition and crumbled on touch, making recovery difficult. Resting on the top of this surface were three well preserved dog skulls, of which two were adult. Zone B: beneath this level were smaller fragments of limestone and finer washed-down material containing the remains of dog, sheep and pig. Zone A: underlying this a marly limestone block mixture was encountered in which human and ox remains and to a lesser extent those of sheep, pig and horse were found.

Immediately below the top shaft, Zone C was absent, but Zones B and A were found, the dog remains of Zone B being very numerous. The majority of the human remains were recovered from this northerly section of the cave, 18 individuals as opposed to five in the southern part, but this is possibly due to a rock-fall which impeded further excavation in the latter section.

In December 1957 four bronze bracelets (described below (I)—(IV)) were found in the northern part of the cave, intermingled with both animal and human skeletal material. Also associated with these were a whetstone and a blue-glass bead. Sometime later, an iron penannular brooch and an iron axe-head were found similarly associated with the skeletal material. Both brooch and axe-head were heavily oxidised and rusted to the latter were a piece of charred bone, a fragment of limestone and part of the left metatarsal of a sheep or roe deer.

The wet, clayey and sticky conditions which now predominate, together with the immense practical difficulties of working due to the structure of the cave renders recognition of finds *in situ* virtually impossible. In consequence, many of the small finds have been discovered

while sorting material on the surface. Amongst these are a bronze finger-ring, part of a fifth bronze bracelet, several varieties of beads, iron studs, two sherds of medieval pottery and a further fragment of a solid penannular bracelet (see (IV) below).

The Finds.

A. Bronze.

(I) Bracelet (Fig. 1 (x 3/4)). 5-stranded, twisted wire. Maximum diameter 7.4 cms. Hook fasteners at each end. The wire itself stands half-oval in cross-section with base externally (width .15 cms.).

(II) Bracelet (Fig. 2a and b (x 1/1)). Solid, penannular, incised. Maximum diameter 6.4 cms. Material of bracelet mainly oval in cross-section (max. diam. .3 cm.), but tending to be more circular towards terminals. Decorations simple, pattern ribbed and incised, "characteristic of toilet articles of the 2nd and 3rd centuries A.D."²

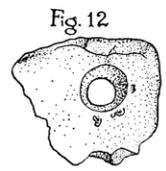
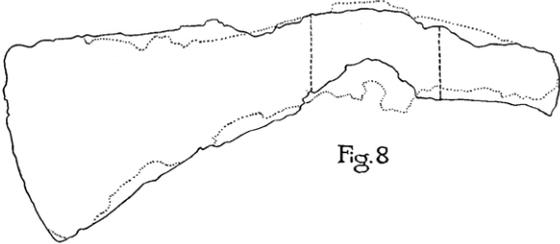
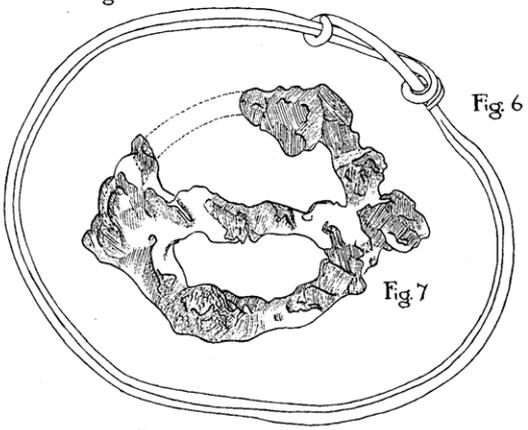
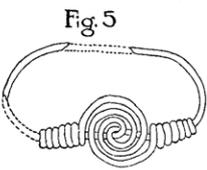
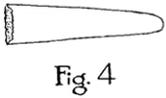
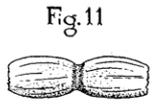
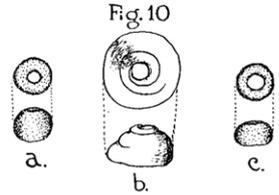
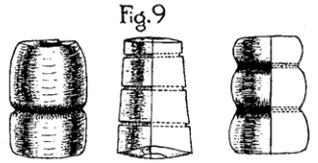
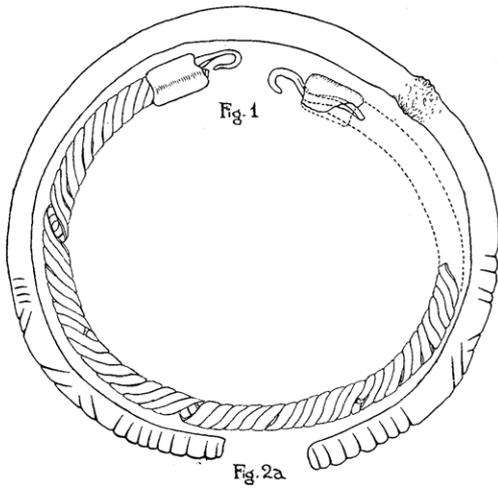
(III) Bracelet (Fig. 3 (x 1/1)). Solid penannular. Maximum diameter 5.7 cms. Slight and indistinct ribbing of terminals. Cross-section laterally flattened oval (max. diam. .25 cm.).

(IV) Armlet (Fig. 6 (x 2/3)). Penannular, undecorated. Maximum diameter 9.9 cms. Made from single piece of square bronze wire (? tinned surface) .2 x .2 cm. Ends overlapping and twisted round each other.

(V) Bracelet (not illustrated). Circular, 3 fragments. Diameter *c.* 10.5 cms. Made from a single strand of twisted wire. The cross-sectional dimensions of the bronze wire of this bracelet is identical with that of (IV) and both appear to contain a higher proportion of copper than bracelets (II) and (III), suggesting a common origin.

(VI) Finger ring (Fig. 5 (x 2/1)). Diameter *c.* 2 cms. Made from a single piece of bronze wire. The bezel (max. diam. .8 cm.) is formed by the two free ends of the wire

² Mrs Elizabeth Fowler, M.A.



Metal and other objects from Haverbrack.

twisted together into two pairs of linked circles and then wound back on each other. "A sort of trick wire puzzle suggestive of a more elaborate form of manufacture to the armlets."³

(VII) Finger ring (not illustrated). Smaller, simpler. Diameter 1.4 cms. Made from a single piece of flattened bronze wire. (Max. width .1 cm.).

(VIII) Terminal of bronze bracelet (Fig. 4 (x 1/1)). Flattened, tongue-shaped.

B. Iron.

(IX) Axe-head (Fig. 8 (x 1/2)). Rectangular ended head, curved bit and flange. Maximum length 14.5 cms. Cutting edge 5.4 cms. Head-hole 2.5 x 3.25 cms. Hammer-head width 2.4 cms. Weight 10 ozs.

(X) Penannular brooch (Fig. 7 (x 1/1)). External diameter 3.3 cms. Humped cross-pin. Terminals indeterminate.

(XI) Miscellaneous iron studs. Large heads. Very corroded.

C. Glass.

(XII) Beads (Fig. 10b (x 2)). Opaque blue glass. Basal diameters range from .3 to .5 cms. Made by the core-wound process. 19 beads and 6 fragments found in all.

(XIII) Beads (Fig. 10a and c (x 2)). Small translucent blue-green glass, varying shades. Size varies from .15 to .25 cms. in depth. 10 and a half found in all.

(XIV) Bead (Fig. 11 (x 2)). Translucent yellow segmented glass. Length .9 cms. "Appears to have been coated with gold and to have had striations along its axis which may have been filled with a contrasting colour."⁴

³ Mrs Elizabeth Fowler, M.A.

⁴ Mrs Margaret Guido, F.S.A.

D. Jet.

(XV) Beads (Fig. 9 (x 2/1)). Presumably Whitby Jet. 8 and a half beads in all; 6 and a half have a simple deep division into two segments; one has three segments; one is divided into four segments by narrow, straight-sided, annular incisions.

E. Pottery.

(XVI) Fragment of hard, gritty, blue-grey fabric with shallow banded surface of light-grey grit, overlain by traces of a yellow-brown glaze.

(XVII) Fragments of soft, brown fabric, outer surface very much weathered.

(XVIII) Fragments of pinkish, plaster-like material (? pottery) with yellow-orange glaze.

F. Stone.

(XIX) Fragment of ? net-sinker (Fig. 12 (x 1/2)). Sandstone.

(XX) Fragment of Blue Coniston Slate, both sides of part of one edge worn smooth. ? Scraper.

(XXI) Whetstone. Elongate, trapezoidal, rounded extremities. Millstone grit. Maximum length 18 cms. Maximum width 5.3 cms. Cross-section roughly parallelogrammetrical.

(XXII) Whetstone. Oval cobble with flattened and smoothed side. Fine gritstone.

G. Shell.

(XXIII) Several fragments of cockle shell (*Cardium edule* L.).

H. Skeletal Material.

This material constitutes one of the largest single collections from any archaeological site in Cumberland, Westmorland and Lancashire North-of-the-Sands, and

in many ways its size and diversity are the most important and interesting features of this site.

I. *Human.*

The human skeletal material recovered represents a minimum of 23 individuals, whose ages, as determined by their dentition, are as follows:

Age range.	Minimum number.
6-7 years	3
12-25 years	11
25-50 years	4
Over 50 years	3+

On the whole the teeth are in excellent condition; few caries are evident in the whole group. Of those over 25 years of age the teeth are worn smooth presumably from eating gritty food.

Human skull measurements in mm.:—

	1	2	3	4	5	6
A ..	186.0	—	—	—	—	—
B ..	145.0	140.5	138.5	—	—	—
C ..	105.0	101.0	106.5	—	—	—
D ..	99.0	95.0	96.0	—	—	—
E ..	—	—	—	97.5	—	—
F ..	—	—	—	20.5	—	—
G ..	—	—	—	35.5	34.5	39.5
J ..	—	—	—	39.5	45.0	31.5
K ..	—	—	—	22.0	25.0	22.5
L ..	—	—	—	32.0	—	—
M ..	—	—	—	13.0	14.0	14.0

- A. Glabella-opistocranium length.
- B. Maximum width of parietal region.
- C. Maximum width of anterior part of frontal bone at external orbital process.
- D. Minimum width of anterior part of frontal bone at external orbital process.
- E. Maximum facial breadth at malo-maxillary junction.
- F. Maximum breadth of nasal aperture.

- G. Palate length from most anterior mid-point of alveolar margin to most posterior mid-point of palato-maxillary suture.
- H. Palate width, adjacent to end of maxilla, from lingual margin of M^2 to lingual margin of M^2 .
- J. Palate width from lingual mid-point of canine alveolus to lingual mid-point of canine alveolus.
- K. Length of upper cheek teeth (molars and premolars) measured in a straight line from anterior mid-point of crown of P^1 to posterior mid-point of crown of M^3 .
- L. Length of upper premolars measured from anterior mid-point of crown of P^1 to posterior mid-point of crown of P^2 .

Human lower jaw measurements in mm.:

Age Group	I	2	3	4 ⁵
	12-25	12-25	12-25	12-25
M ..	—	—	99.5	89.0
N ..	28.0	28.0	31.0	28.0
O ..	—	—	—	58.0
P ..	35.0	—	32.0	29.0
Q ..	34.0	32.0	36.0	—
R ..	25.5	23.0	25.0	21.5
S ..	45.0	42.5	46.0	43.5
T ..	14.0	14.0	14.0	12.5

- M. Breadth of mandible at gonion.
- N. Minimum height of body of mandible behind M_1 .
- O. Gonion to Coronion.
- P. Minimum antero-posterior breadth of ascending ramus.
- Q. Subsymphyseale (or Gnathion) to Infradentale.
- R. Mid-point of crown of C_1 to mid-point of crown C_1 .
- S. Length of lower cheek teeth (premolars and molars) measured in straight line from mid-point of anterior edge of crown of P_1 to posterior edge of crown of M_3 .

⁵ All incisors absent as if knocked out; bone healed over but large cavity still remains in anterior surface of jaw bone.

HUMAN LONG BONES IN M.M.

		<i>Fibula</i>		<i>Tibia</i>		<i>Humerus</i>				<i>Radius</i>		
		R	L	L	R ⁶	L	L	L	L	L	R	R
a	..	347.5	350.0	363.0	307.0	296.0	286.0	287.0	240.0	271.0	221.0	248.0
b	..	23.5	24.5	71.5	—	43.0	—	46.0	21.0	21.0	20.0	22.0
c	..	26.0	25.5	48.0	42.0	—	57.0	—	37.5	—	31.0	—
d	..	8.0	8.0	19.0	15.5	15.0	15.0	14.5	11.0	13.0	10.0	11.0

Ulna

		L	L	R	R
a	..	278.0	261.0	252.0	289.0
b	..	25.0	18.0	31.0	22.0
c	..	22.0	22.0	19.5	21.5
d	..	12.5	11.0	10.5	10.0

R & L Denote right and left limb.

a Maximum length.

b Maximum width of proximal end.

c Maximum width of distal end.

d Minimum width of shaft.

⁶ Bronze stain at distal end.

- T. Length of lower premolars measured in straight line from mid-point of anterior edge of crown of P_1 to mid-point of posterior edge of crown of P_2 .

Throughout the period of accumulation of rock and boulder débris in the cave, few of the human long bones have remained intact. In the preceding table therefore (p. 69), only the measurements of complete bones are given.

Using these measurements, on the basis of Dupertuis and Hadden's reconstruction formulae, the height of the individuals represented would range from 4 ft. 8 in. to 5 ft. 5 in., with a mean height of 5 ft. 1 in.

Bronze stains appear on a few human bones and on some animal bones. The following table summarises these:

<i>Species</i>	<i>Bone</i>	<i>Location of Stain</i>	<i>Suggested Origin of Stain</i>
Human	Tibia	Mid-shaft	Leg bangle
Human	R. calcaneum	Inner side of tuberculus	Anklet
Human	Fibula	Mid-shaft	Leg bangle
Human	Pelvis	Ilium	Wrist bracelet
Human	Phalange of hand	Whole	Finger ring
Human	Skull	Occipital region	?
Ox	Cannon bone	Outer distal edge	} Closely associated with human remains
Dog	Femur	Mid-shaft	
Dog	Tibia	Mid-shaft	

II. Animal.

The vast accumulation of animal bones from this site renders the publication of detailed lists and measurements impracticable in this report. However, anyone particularly interested may obtain such lists on application to the authors, who are undertaking a more comprehensive study, which, it is hoped, will provide the subject of a separate paper. The following table, there-

fore, represents only the minimum number of each species:

Sheep	Ox	Dog	Pig	Wolf	Horse
20	18	17	8	3	2
Red Deer	Fox	Badger	Cat	Rabbit	Mouse
2	1	1	2	1	5
Roe Deer	Bat	Vole	Mole		
2	1	9	2		

Many of the animal bones associated with the human remains display cut-marks and old breakages.

OX	— Humerus (R)	Broken shaft + part of trochlea sliced off.
OX	— Humerus (R)	Broken shaft + part of trochlea sliced off.
OX	— Tibia (L)	Hack-break on half-shaft from distal end.
OX	— Pelvis	Sloping cut-break to ventral, just dorsal to acetabulum.
SHEEP	— Ulna	Long cut-break through proximal head.
SHEEP	— Vertebrae (thoracic)	Neural spine cut perpendicularly.
OX	— Vertebrae (thoracic)	Neural spine cut perpendicularly.
OX	— Vertebrae (cervical)	Dorsal median cut-break sloping anteriorly.
OX	— As above,	but cut not as distinct.

This information seems to suggest that of the species represented, Ox and Sheep were the most used for food. In addition, at least 35 Ox and Sheep bones show old breaks. The location of the cut-breaks may indicate a systematic carving up of a carcass. The cutting off of the head and limb extremities (indicated by the cuts of the cervical vertebrae, humerus, ulna and tibia) would leave the most valuable part of the carcass intact. This then may have been divided into two (by a medial transverse cut across the thoracic vertebrae) and further re-

duced by the removal of the hind shoulders (by a cut through the pelvis at the acetabulum region).

Antlers. A few Red Deer antlers were found with the human bones. These were uncast and accompanied by the skeletal remains of at least two Red Deer. Similarly associated were the antlers of two Roe Deer, one of which had a fine pair with four points. The majority of the antlers were found in the surface layer. Of these, eleven were cast, two uncast with portions of skull attached, and one further hacked off at the antler base. These antlers may represent two different varieties of Red Deer; one type of antler is relatively small, and corresponds in size and in possession of brow tines to the British Insular Race of Red Deer (*C. elephas scotium*); the other is much larger, up to 3 ft. 6 in. in length, of much sturdier build, and in having both brow and bez tines is more comparable to those of the Continental species. At least two antlers have had all their tines sawn off.⁷ The purpose of this is uncertain; none of the sawn-off tines have been discovered. In the case of at least one antler, tines have been hacked off.

Conclusion.

This cave is by no means fully excavated. There is known to remain a depth of at least 9 ft. of undisturbed rubble containing archaeological material below the level reached by the present excavations. It is uncertain how much deeper than that the cave extends and conclusions must therefore be tentative.

Of the material recovered from the cave, the metal finds and the beads provide some indication of date. Mrs Elizabeth Fowler, who kindly examined the fibulae, reports, "My own feelings about the finds are that they indicate a considerable range of time. The penannular brooch could be anything from the 1st century B.C. to the 2nd century A.D., and the bracelets, I would like

⁷ See diagram.

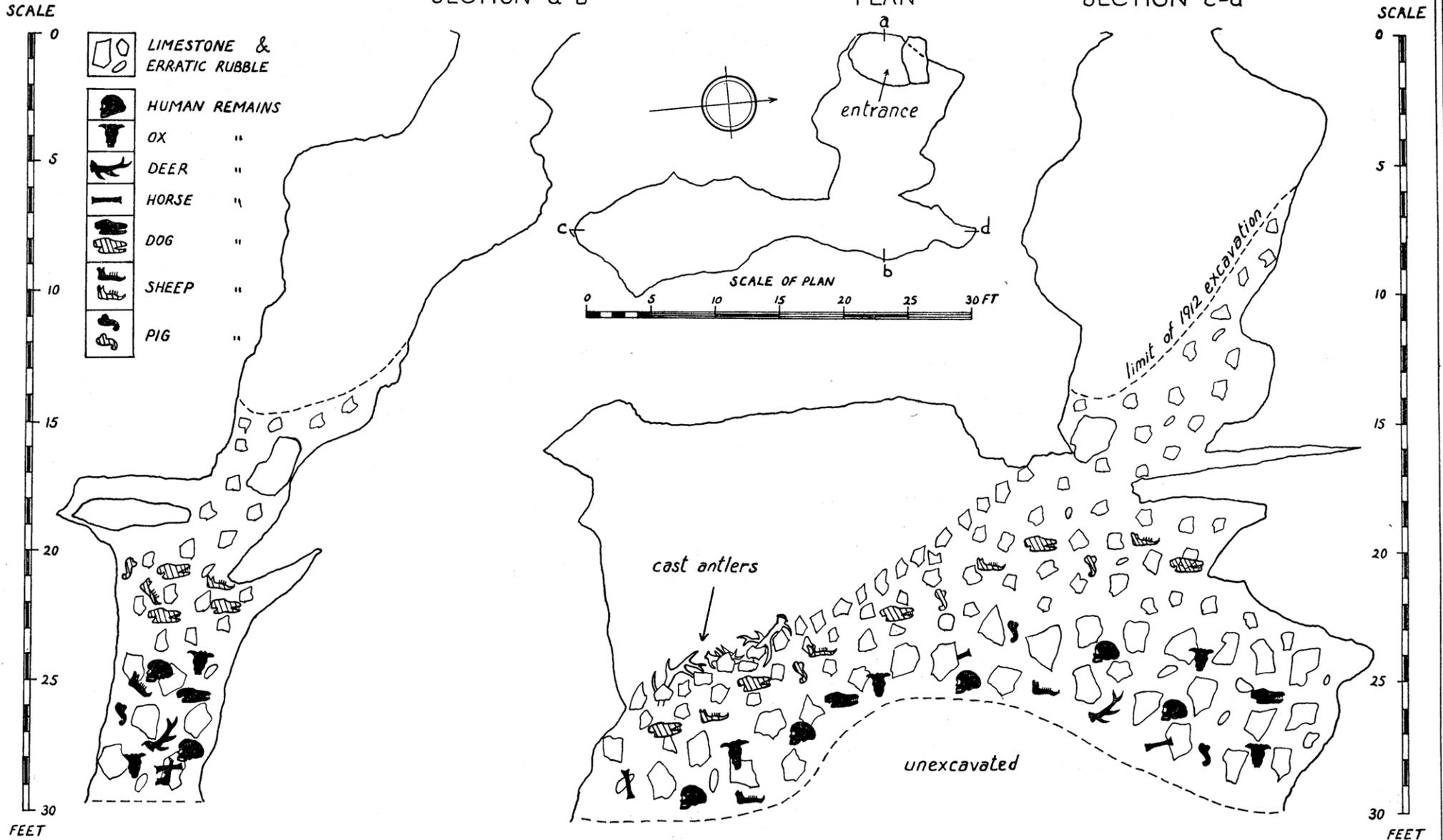
THE DOG HOLE

HAVERBRACK

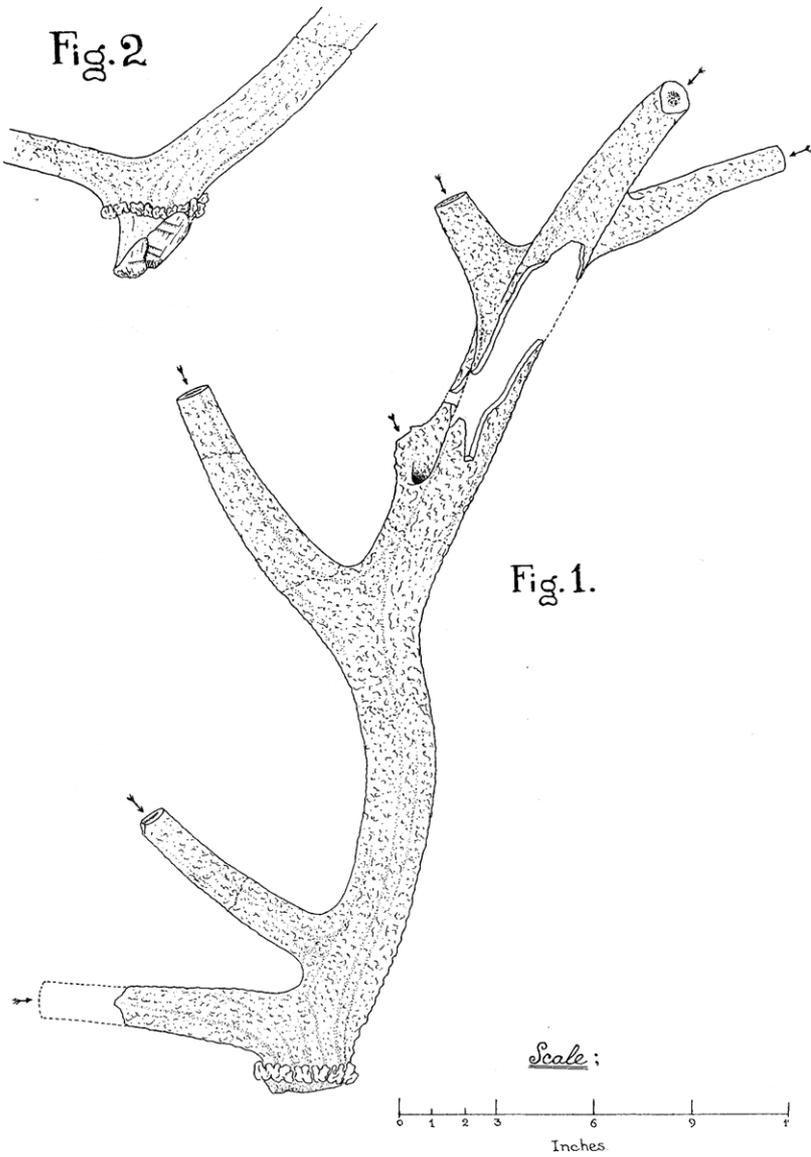
SECTION a-b

PLAN

SECTION c-d



DB.1962.



Worked antlers, Haverbrack.

W.B.
1902

to think, are 2nd or 3rd century A.D." The general assemblage seems to be of a Romano-British character. This is substantiated by the iron axe-head, which is of Roman type and the jet beads, which also have Roman parallels.⁸ The glass beads, however, Mrs Margaret Guido, F.S.A., dates to the period 5th to 9th centuries A.D.

If the dating of the glass beads can be accepted it would appear that human remains were deposited over a period of seven or eight centuries. The infilling of the cave above Zone C seems to have been completed by the 16th century, since Dr Jackson found a sherd of Tudor pottery near the surface. Thus the following chronology may be postulated.

Zone A. Accumulation over a period 2nd to 9th century A.D., of the limestone blocks and erratic boulders, containing the remains of humans, ox, and to a lesser extent those of pig, sheep and horse. There is no evidence for use of the cave for habitation. No habitation layer has been found of any description and the structure of the cave itself virtually precludes this possibility. It is quite unlike any of the caves in the neighbourhood known to have been inhabited — Dog Holes, Badger Hole, Fairy Hole, all on Warton Crag, Merlewood Cave at Grange, Urswick Crack and Helsfell Cave near Kendal. On the other hand, the quantity of animal remains found in association with the human material do not seem to indicate any normal burial, although the use of the cave as a ritual pit cannot be entirely discounted. However, the cave is situated at the focal point of a local catchment area extending over approximately 4.7 acres. Most of this area is bare limestone; where there is soil its average depth is only one foot. Times of heavy rain and flooding would sweep down large amounts of erratic boulder and

⁸ For axe-head, no exact parallels but cf. "Roman fort at Manchester", Bruton, Plate 42 + "Birrenswark", *Soc. Antiq. (Scot.)*, 1898, p. 248, fig. 6. For jet beads cf. "Report Res. Comm. Soc. Antiq., Ospringe, Kent, Plate LX. Grave Groups, xcix (CH), 1925, xxiii + Arch. Cant., Vol. xxxvi, p. 80, Plate LV.

limestone block débris. The quantity of the latter cannot be accounted for by falling roof blocks alone. It is therefore suggested that the human and animal remains may have been deposited in conjunction with this rock débris, washed in from shallow graves and settlement sites in the vicinity.⁹ This suggestion also presupposes a higher water table than at present.

Zone B. At a subsequent period, possibly shortly after the 5th century or as late as the 9th century, the cave, judging by the predominant dog remains, in association with those of young pig and sheep, became a dog's den. A period of some stability at this point is indicated by traces of a spread of deposited calcium carbonate from the cave sides over rubble and bones.

Zone C. After a comparatively short period, this habitation terminated and numerous deer antlers were deposited. The majority of these were cast, and can only represent a deliberate amassing. The purpose of this is uncertain, but because the tines of two antlers had been removed, perhaps the cave at this time served as a store containing a readily available supply of tines.¹⁰

Some time later, the cave must have been sealed off to human access by the continuing accumulation of débris, and in particular, by an especially large fallen roof block. More wash-down débris and displaced roof fragments would rapidly bring the level of the rubble up to the limit reached by Dr Jackson. Unfortunately, the

⁹ Although the nearest known burial of R-B date is on Heaves Fell (CW2 xii 397-402), it is probable that the low limestone escarpments of the area supported a larger R-B population than at present known, e.g. unrecorded "settlements" in Levens Park, and Brow Foot Farm, Yealand, + small fort on top of Dallam Park, some three-quarters of a mile away from the Dog Hole recorded in these *Transactions* only on R. G. Collingwood's distribution map (CW2 xxxiii, facing p. 186).

¹⁰ Dr J. W. Jackson's excavations at Warton Dog Holes produced a single sawn-off antler tine, which he thought may have been used for piercing skins preparatory to sewing. (*Trans. Lancs. and Chesh. Antiq. Soc.*, Vol. xxviii, pp. 9-17 + Pl. II, fig. 2.) Antler tines have been used as cheek-pieces for horse-trappings; latest British example Late Iron Age B Glastonbury Lake village, but used in Germany in the 11th century, and in remoter parts of Sweden up to the early 19th century. (See *Antiq. Journ.*, 40 (1960) 68.) It is also possible that the tines may have been used for knife-handles.

medieval pottery is unstratified, but the upper part of the cave must represent at the earliest, post 13th century accumulation to within three feet of the surface, with a period of use as a wolves den prior to the 16th century. The date of the placing of the lintels over the entrance is unknown.

Acknowledgements.

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