EXCAVATIONS AT CHELM'S COMBE CHEDDAR

Conducted under the Excavations Committee of the Somerset Archæological and Natural History Society 1925—1926

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FOREWORD

by REV. PREB. PALMER

An acknowledgement is due to those who have made our work possible : in the first place to Miss Ford, of the Castle Farm, Cheddar, the owner of the site. From the commencement of our trial workings at Whitsuntide 1925, she has shown the greatest interest and generosity in granting us permission, and even reserving rights in her lease to the Company which began quarrying at the bottom of the Combe in the summer of 1925. From the beginning of their work, the quarry owners and workmen have been of the greatest help and have maintained an interest which they have carried most profitably into their own work. Without it we should have been deprived of the details of the rock tomb to which Mr. Balch calls attention. We are indebted deeply to Mr. W. E. Young to whose careful work much of our information is due. In looking for a competent excavator, his training in neolithic sites under Dr. Clay and his work at Windmill Hill commended him as an ideal worker for Cheddar : the Committee may well congratulate itself on being able to secure him from December 1st, 1925, until late in April of 1926 when the last work was done. His services cannot be sufficiently acknowledged and the Committee feels that whatever results have been obtained must stand to his credit.

Mr. Parry contributed a great deal of work in almost daily measurements taken and results tabulated. These are all brought together into the plan and section which are here reproduced.

The Excavation has been of great interest in that it was the first to be undertaken under the auspices of the Excavations Committee of the Somerset Archæological and Natural History Society. The results attained, we venture to say, fully justify the Council in having arranged such a method of conducting affairs at a distance from its headquarters in Taunton. The County is so large, that the only method possible seems to be that which we have endeavoured to work in Cheddar. It has been an interesting experiment in delegation of powers.

CHELM'S COMBE SHELTER

by H. E. BALCH, F.S.A.

Thirty years ago I came across this Cave Shelter and was struck by its possibilities.

Its position in the general series of Mendip Caves is not easy of definition. Situated, as it is, so close to the margin of the old Triassic sea, one has to look far back to find the Geographical conditions which made its existence possible. Like the bulk of the great cavities of Cheddar, it looks to the north and is formed down the dip of the Carboniferous Limestone rocks, and this results in the vertical form of the surrounding cliffs and bluffs, and the preservation of the overhanging arch of the cave.

That the filled-up ravine in which it is situated existed in Triassic times is obvious from the fact that Dolomitic Conglomerate comes into it at the quarry below the cave shelter. The depth of the limestone debris at present filling it is unknown but it must be very considerable, and has been increasing at a rate indicated by the submergence of the neolithic rock tomb below the cave shelter to the extent of 3 feet above its roof. It is unlikely that the people who made this tomb cut through the screes to any depth to make it, so that one is justified in concluding that the filling up of the ravine has progressed at the rate of less than a foot in a thousand years, which is a fairly rapid rate, for so steep an incline.

Chelm's Combe Shelter, as a cave, was probably formed when overlying secondary beds directed a flow of water into a joint or fissure, to escape far away, one hardly knows where, possibly miles distant. Such beds, upper Red Marl, Rhœtic or Lias, have been entirely removed, down to the level of the rich red soil showing on the cultivated lands below the cave, by the ordinary agencies of denudation, till not a trace is to be found, unless they are represented by the ferruginous sands which are seen here and there among the cliffs.

We have not yet reached in our 22 foot pit made in the material infilling the cave, the level of the great pachyderms of Wookey Hole and Aurignacian Man who was their contemporary.

Today, there is a great temptation to conclude that Magdalenian man was not so far removed from our time as for long we have thought, and that Neolithic man, in Europe, was his contemporary, or practically so.

Against assuming that the period of the Reindeer was a short episode at the close of the Pleistocene, Chelm's Combe is a distinct warning. The upper level of one foot takes us back to the Romano-British period, marked by a beautiful bronze fibula (see fig. xii), identified by Mr. Reginald Smith, F.S.A., as of 50 A.D., and at 2 to 3 feet we are definitely beyond Early Iron Age times, marked by pottery and a remarkable smelting furnace, which retains its slag and its blowhole for draught.

At the 4 foot level we find and leave behind us the deepest of Neolithic pottery.

At the 6 foot level we have reached the period of the Reindeer and it persists definitely to the 17th foot, and doubtfully to the depth of 22 feet.

There is nothing in the surroundings of Chelm's Combe to indicate the possibility of more rapid accumulation of the screes which form 90 per cent. of the floor debris. So far even at 22 feet we have no trace of Cave Bear, Rhinoceros or Mammoth. The absence of the former in a most ideal situation is remarkable, and important.

I commend therefore for consideration by those capable of judging, the length of the Reindeer period as demonstrated at Chelm's Combe, and as a further indication bearing upon the same important matter, the level of the Reindeer deposit at the foot of the dunes banked against Brean Down, where Reindeer remains without the greater beasts of the Pleistocene occur in some numbers. They have been searched for by

Dr. Cooper of Winscombe, and his collection contains good specimens.

Remains there of Romano-British date are far above and separated by a vast deposit of stratified sand.

At the 6 foot level at Chelm's Combe we definitely arrive at the level of the smaller totally extinct animals, the Varying Hare, the Cave Pika, Hensels Banded Lemming, Abbott's Water Vole, and Microtus Anglicus (Hinton), whilst forms now extinct in England include the Arctic Fox, the Continental Field Vole, the Northern Vole, the Reindeer, and the Glutton (more doubtfully).

For the great labour upon these remains we are indebted to Mr. J. Wilfrid Jackson, M.Sc., F.G.S., of Manchester Museum and for a similar work upon the bird remains to Mr. E. T. Newton, F.R.S.

The latter remains include all the names with which we are familiar and others which came to us as a surprise.

The Little Auk occurs at a depth of 9 feet. The Ptarmigan and the Red Grouse, now confined to more Northern latitudes, the Eagle Owl and the Barnacle Goose, the Pheasant (?) and the Shoveller Duck, all occur to give us a graphic picture of the surroundings in those days of long ago.

The expert knowledge so put at our disposal is much appreciated and we are grateful to these ready helpers, whose aid is always at our disposal.

There is also a surprising and interesting series of the Non-Marine Mollusca, identified and named by Mr. Jackson. There are interesting additions and variations to be seen in his report upon these, the extent of which has justified both the labour of collecting them and his extensive work upon them.

The Human bones have been examined by Dr. Cooper and his report upon them finds its place along with Sir Arthur Keith's notes upon them and upon the contents of the Rock tomb just below the Cave.

Those from the Shelter belong to the end of the long period represented and it is obvious from Sir Arthur Keith's report that the man whose extraordinary looking frontal bone was discovered came to a violent end, the blood stain from a blow on his skull being still visible, preserved below the tufaceous covering.

The little Rock tomb below the cave is unique among Mendip tombs. It is obvious that in Neolithic times, these people requiring such a place laboriously enlarged one of the many small cavities in the limestone bluff and making it into a tomb, about a yard square and about the same in height, used it for four interments before finally closing it down.

Dr. Cooper's report upon these show that the female skull still retains marks of violence, and subsequent healing.

Dr. Clay whose recent work upon Neolithic sites qualifies him to deal with the matter with authority has kindly examined, reconstructed and reported upon the few important finds of pottery.

The reports of all these gentlemen I take in their entirety and submit to you as a valuable record of our first season's work in the fascinating shelter of Chelm's Combe.

I should add that we owe a debt of gratitude to those kind supporters who gave us financial aid in the carrying out of this considerable work and last but not least to the pains-taking and devoted spade work of Mr. W. Young, who, aided by willing helpers who gave their labours purely for love of the work and pride in their native place, carefully carved away foot by foot, and removed hundreds of tons of the material forming the floor of the shelter and its vicinity. Mr. Young's care, skill and patience are deserving of all praise.

HUMAN REMAINS

by Dr. N. C. COOPER

The Human remains from the Combe naturally divide themselves into two groups. The first includes those from the various layers of the cave itself and the second includes those found in the rock tomb lower down the Combe and the scree outside the rock tomb opening. It would appear that these latter finds were originally placed in the rock tomb but, owing to quarrying operations below and weathering of the face of the rock, they have become lodged in the scree.

A table showing the remains of crania from rock tomb and rock shelter is to be found below, as it is thought that it will give a quicker idea of the skulls when tabulated than in a series of manuscript.

Skull	Parts found	Where found	Sex	Length	Width	Index	Height	Supra-Orbital	Inter-Stephanic	Age
A.	Almost complete with lower jaw (A.1.)	Rock-Burial	M	183	148	79·5	120	107	120	40 yrs.
B.	Temporal and R malar, Superior maxilla and base missing	Rock-Burial	F	182	135	74	96 Frankfort =112	91	?112	6-7 yrs.
C.	Parts of R. and L. parietal and occipital only	Rock-Burial	F							
D.	Frontal bones with part of L. parietal and temporal. Lower jaw (D1.)	Scree outside rock-burial	?M							About 9 years
E.	Upper jaw, L. malar, parts L. temporal and parietal. Part of lower jaw (E.1.)	Rock shelter (Level 3B.)	F							
F.	Parts of R. parietal, R. temporal and basi-occipital	Rock shelter (Level 5B.)	?							
G.	Base of skull missing Lower jaw (G.1.)	Scree outside Rock-Burial	F	181	132	72·9			119	About 75 yrs.
H.	Frontal, portions of R. parietal and upper jaw Lower jaw (H.1.)	Rock shelter (Level 4.)	M		136			108		40 yrs.
I.	Part of L. superior maxilla	Rock shelter (Level 4.)	M							13 yrs.
K.	Part of R. temporal	Rock shelter (Level 3.)								
L.	Part of anterior angle of parietal	Rock shelter (Level 7B.)								

THE ROCK SHELTER

The remains here found are probably of four individuals. Two adults are represented by skulls E and H. All the remains were found between layers 2 and 10 inclusive and for the most part they are fragmentary. The only skull from which any definite data can be obtained was found in layer 4 (Skull H and lower jaw H 1). This was submitted to Sir Arthur Keith and the following is his report :—

The skull submitted is that of "a man—40 or more, and is represented by the lower jaw, half the upper jaw and the frontal—besides another fragment of the skull. The bone is marvellously preserved—so fresh when the crust is cleaned off. No doubt his skull was broken by a blow at or just after death ; you can still see the hæmoglobin stain on the underside of the fragment. The chalk or lime salt has sealed it down and preserved it. He is not older than late Celtic because (1) his teeth show much reduction—his lower wisdom was not formed on the right side and it is small on the left ; his canine teeth tend to be double-rooted, a retrograde change ; the left lower canine has come in irregularly ; the teeth are but slightly worn for a man of his age. The teeth in front meet in an overlap bite. The condition of the bone is all against a palæolithic date. (2) The forehead is long and sloping ; the skull was probably long and narrow, not wider than 136 m.m. The minimum width of the forehead is 101 m.m., the supraorbital width 108 m.m. The greatest frontal width 112 m.m.—all perfectly ordinary measurements. Bigonial width 108 m.m. One other modern mark of the man is his square shelf-like chin—a common feature of the British Celt."

It is to be noted however that the fragment from layer 7B is more of the "porcelain" texture of Palæolithic remains but it is too small to give any definite opinion regarding its horizon.

The lower jaw and skull (E and E1), shows similar characteristics to that of Skull H, and are remains of a

woman. The teeth are well worn and not decayed a character also marked and to be envied in the owner of the skull reported on above.

Layers 3, 3B and 4 contained the greatest number of remains and the rest of the bones were scattered throughout the remaining levels, some of which yielded only one bone. They are mostly very fragmentary and measurements are not possible.

Layer 6B yielded the upper ends of two femora. One of which is platymeric.

Layer 5B yielded a tibia which has a platycnemic index of 60.5 measured at the nutrient foramen. The head is also retroverted whilst the upper end of a large tibia from layer 3 has also a retroverted head.

THE ROCK TOMB AND SCREE

Portions of 5 individuals are here represented and most of the skulls are sufficiently represented to get an exact idea of the people to whom they belonged.

One male skull (A and A1) is practically complete. Its index is 79.5. The rest are typified by skulls B and G.G1. They are typical neolithic skulls; definitely long-headed. The skull B. was submitted to Sir Arthur Keith who reported that it was "the skull of a child about 6-7 years of age and more likely a girl than a boy. It has all the characteristics of the Long-Barrow people. Its maximum length is 182 m.m., the glabello-occipital length is less, 180 m.m., due to forward projection of the upper forehead—a character of childhood. The maximum width is 135 m.m., the cephalic index being thus 74. The height of the vault above the sub-cerebral plane is 96 m.m., which corresponds to a height of the roof above the auricular passages with the skull on the Frankfort plane, of about 112 m.m. The minimum width of the forehead is 89 m.m.; the maximum width of the frontal 114 m.m.

All these dimensions are in keeping with the racial diagnosis just given."

The other skeletal bones may be classified thus :—

Femur. Two (R. and L.) of an adult showing slight platymerism and a well defined linea aspera.
Portions of two young bones gnawed.

Tibia. Broken R. and L. of adult showing platycnemic flattening of shaft and retroversion of head.
Portions of two young bones (R. and L.)
Part of the head of a third.

Fibula. Two (R. and L.) nearly complete.

Humerus. Two (R. and L.) of adult.
One (L.) young person.

Radius. Two (R. and L.) well marked interosseous crest.

Ulna. One (R.) ,, ,, ,, ,,
Other fragmentary portions.

Clavicle. Two (R. and L.) and two (R. and L.) young bones.

Scapula. R. and L. fragmentary.
Neck portion of (R.) young person.

Pelvis. Fragmentary portions.

Spine. Numerous vertebrae; many only fragmentary.

Ribs were represented by many fragments and there were also foot and hand bones.

Another notable feature is the presence of several foetal bones.

Altogether four or five individuals are represented. The skull and bones of G and G1 are interesting in that the lower jaw was entirely edentulous before death and the woman was a severe sufferer from arthritis which is especially well marked in the knee joints and vertebræ.

LIST OF HUMAN REMAINS FROM ROCK SHELTER WITH LEVELS

LAYER 2. Teeth R.U.4., R.L.1. Left calcaneum. Scaphoid. Ischium. Metatarsals 3R., 5R. Metacarpals 5R., 4R., 2L. Portion of dorsal vertebra and cervical vertebra. Fragment of lower jaw. Scaphoid and semilunar. Rib. Several phalanges.

LAYER 3. R. Astragalus, two L. 2 Cervical, 1 dorsal and parts of lumbar vertebrae. Metacarpals 2L., 3L. Metatarsals 2L, 2R, 3L, 3L, 3L, 3R, 3R. L. Tibia (lower end.) (upper end.) and R. Tubercle. R. Temporal bone. Foetal L. temporal. Lower end L. Radius; upper end R. Radius; Upper articular surface humerus; Several phalanges.

LAYER 3B. R. and L. Superior maxilla; L. malar; Lower jaw; Fragment L. ramus lower jaw; Portion L. parietal; occipital and temporal bones; Portions R. radius; Ribs; R. and L. fibula; R. and L. humerus; Foetal femora and ilium; 2 foetal humeri; Lumbar vertebrae (4); R. and L. pubis; Portion R. femur; R. and L. astragalus; 7 Dorsal vertebrae; R. and L. patella; 4 cervical vertebrae and axis; R. and L. clavicle; R. and L. scaphoid; Part L. Ulna; Phalanges; L. Ischium; R. Scapula and angle of L.; Metatarsals 2L., 2R., 4L., 5R.; Fragment R. tibia; Metacarpal 1R.; R. Int. cuneiform; Hyoid.

LAYER 3C. R. Astragalus.

LAYER 4. L. Os calcis; Lower end L. Femur, part of head of R. femur; L. patella; Lower end and part of upper end R. fibula; Lumbar vertebra; 2 dorsal vertebral centra; cervical vertebra and axis; upper end of sternum; Frontal, portions of R. parietal, R. malar, R. malar; portion of L. superior maxilla; upper and lower jaws. Head of L. radius and lower end; several phalanges. Metacarpals 2R; 3R. Metatarsals 1R. Teeth L.L.3, L.U.3, R.U.1, R.L.2, R.U.4, L.U.2, R.U.3, R.L.1, R.U.3, R.L.7, R.L.3.

LAYER 4B. Tooth R.L.2.

LAYER 5. Dorsal vertebra; Phalanges and tooth R.U.7.

LAYER 5B. Upper two-thirds R. tibia; R. calcaneum, 1st L. metatarsals, 2 phalanges. Portion R. temporal and R. parietal and basi occipital. Teeth R.U.5, R.L.8.

LAYER 6. Two phalanges.

LAYER 6B. Upper $\frac{1}{3}$ R. and middle $\frac{2}{3}$ L. femur.

LAYER 7. Fragmentary head of humerus.

LAYER 7B. Portion of frontal and parietal bones.

LAYER 8. 1st dorsal vertebra; 3L. metacarpal, lower anterior angle L. parietal; tooth R. L. 1.

LAYER 9. 5R. metatarsal.

REPORT ON THE POTTERY

by R. C. C. CLAY, M.R.C.S. L.R.C.P., F.S.A.

LAYER I.

The pottery found in Layer I, that is to say above the black line marked b on the plan, is of a heterogeneous nature, consisting of about 50 fragments belonging to several different periods. Some show patches of greenish glaze and are certainly mediæval in date, as are probably some pieces of brown ware with hard gritty surface and composed of firm well-baked clay. With these were fragments of a wheel-turned pot of dark grey well-baked paste assignable to the Romano-British period. In this area was found the bronze fibula, and close to it at a depth of 2 ft. below the ground level and under the "hump," portions of a dish of dark grey, unpolished, wheel-turned ware, $1\frac{7}{8}$ ins. high and $7\frac{1}{8}$ ins. in diameter at the lip (Fig. i). This also is Romano-British in date.

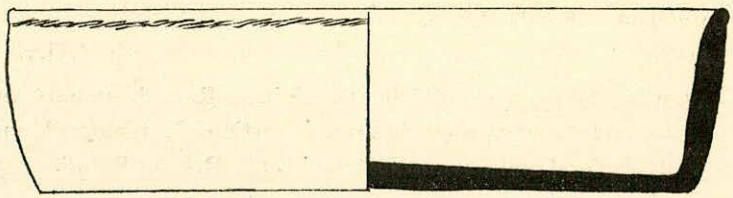

Fig. i. $\frac{1}{2}$

LAYER II.

A few fragments of Early Iron Age pottery were found in this layer (Fig. ii). They are handmade with roughly tooled reddish-brown surface, black on the inner face and composed of gritty, sandy paste.

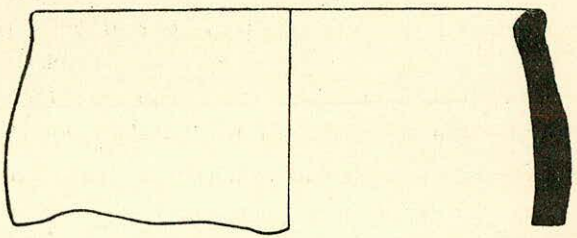

Fig. ii. ½

From inside the furnace and evidently contemporary with it, came 4 fragments of pottery, two of which fitted together (Fig. iii). The vessel of which they formed part was handmade, black on the inside, and dark-brown to black outside, with a smooth well-tooled surface, rounded rim, narrow but pronounced neck and high rounded shoulder below which the walls appear to curve inwards. It belongs to the Early Iron Age and has affinities to a vessel from Swallowcliffe Down.[1] The dark brown paste of which it is composed is well-baked and contains small fragments of grit.

Fig. iii. ½

LAYER III.

Fragments of pottery found in this layer belong to a vessel with finger-tip ornamentation (Fig. iv). They lay below the black line on which the furnace stood and undoubtedly above the trodden floor on which lay pieces of a pot with cord-chevron design to be described later.

The rim is frayed and its exact shape cannot be determined. Diameter at lip approximately 9¼ ins., diameter

1. Wilts N. H. & Arch. Mag. XLIII. Pl. VI., fig. 3., p. 72.

at shoulder 12¾ ins. Beneath the rim there is a somewhat hollowed neck that slopes outwards to reach a high rounded shoulder, below which is a row of finger-tip impressions. These impressions represent the whole of the pad of an index finger, the mark left by the thumb being faintly seen on the inside. In this respect it differs from the usual types of finger-tip ornamentation. The best preserved fragments are smooth on the outside and vary from light to dark brown in colour and possess a core containing large particles of grit. They are hard and well-baked. The thickness of the walls is ⅛ in. below the rim, and ⅜ in. just above the shoulder.

The floor of this layer was trodden flat; on it was found some very interesting pottery. The fragments were embedded in this floor, were on the same level and close together, and there can be no doubt that they were contemporary.

Many pieces of the vessel depicted in Fig. v were discovered, but owing to the abraided condition of the old breaks it has been impossible to restore it or even to estimate its height with any exactitude. Diameter at lip 9 ins., diameter of base 5¾ ins. Rim plain and rounded on the inside. Thickness of rim 5/16 in. Below this the sides curve gently outwards to the middle after which they slope inwards to their junction with the flat base. The walls average ⅜ in. in thickness. In colour it varies from reddish brown to blue grey. It is well-baked, but the reddish core shows a blue line in the centre. There are only a few grit particles in the paste. The upper part of the vessel is ornamented with three rows of chevrons formed by the impressions of two stout pieces of cord twisted together. A similar design was found on a fragment of dark coloured pottery associated with the Mortlake bowl[2] and containing also designs of finger-nail impressions and parallel corded lines on the top and inside of the rim. On the same site and under the same calcareous deposit in the bed of the Thames were two beakers.

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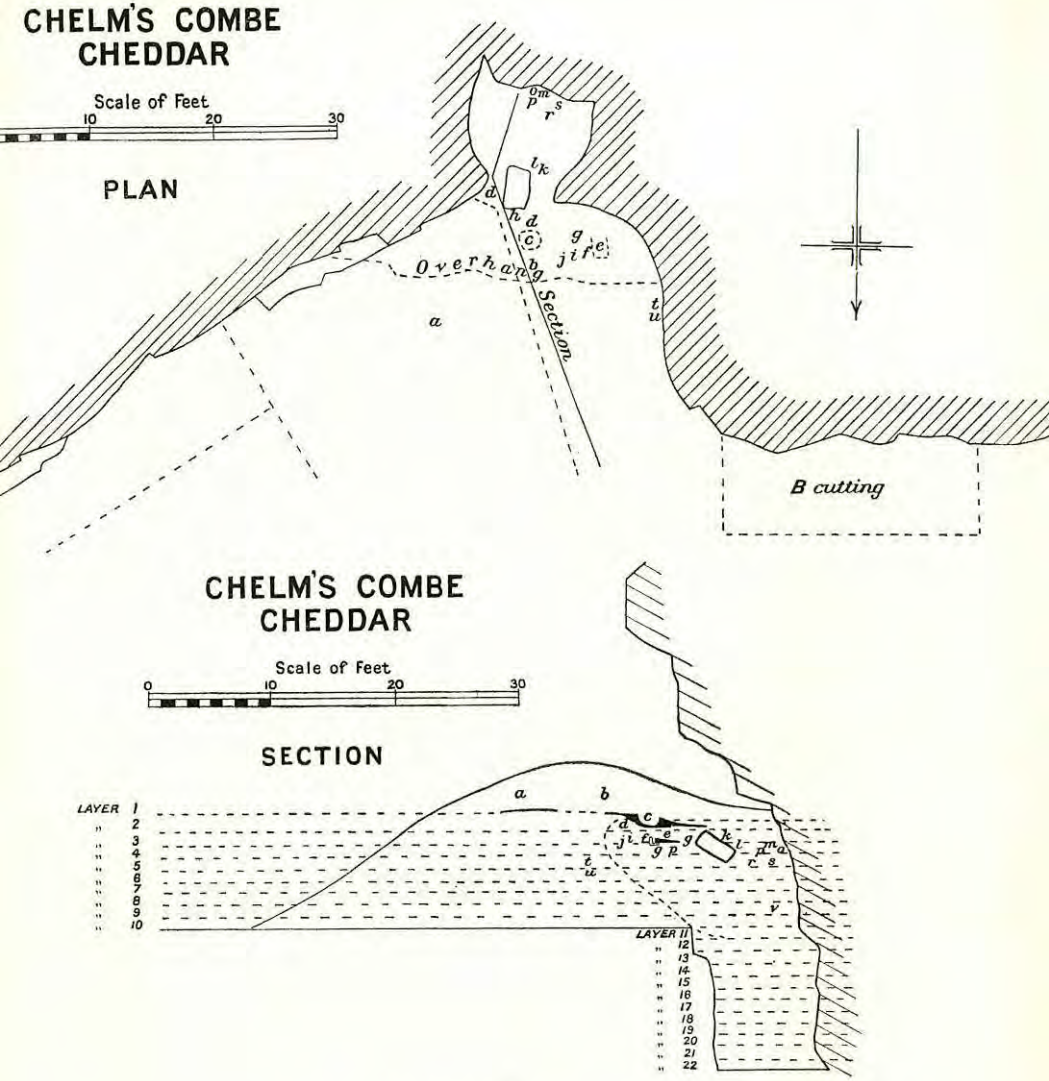
2. Archæologia LXII, p. 340.



REFERENCE.

- *a.* Bronze fibula.
- *b.* Pottery (wheel turned).
- *c.* Furnace and Pottery.
- *d.* Pottery (Finger tipped).
- *e.* Hearth.
- *f.* Hammer Stone.
- *g.* Pottery (bevelled rim).
- *h.* Upper half of human jaw.
- *i.* Pottery (Beaker).
- *j.* Pottery (cord chevron).
- *k.* Top of Human Skull.
- *l.* Half of Human jaw.
- *m.* Lower jaw.
- *o.* Two Bone Gouges.
- *p.* Bowl and Pottery.
- *r.* Flint pot boiler and flake.
- *s.* Pottery.
- *t.* 8 Flint Scrapers.
- *u.* 8 Flint flakes.
- *v.* Flint flake.

NOTE.—The dotted line crossing layers 2 to 10 indicate the limits of a white tufaceous deposit formed by the drip from above.

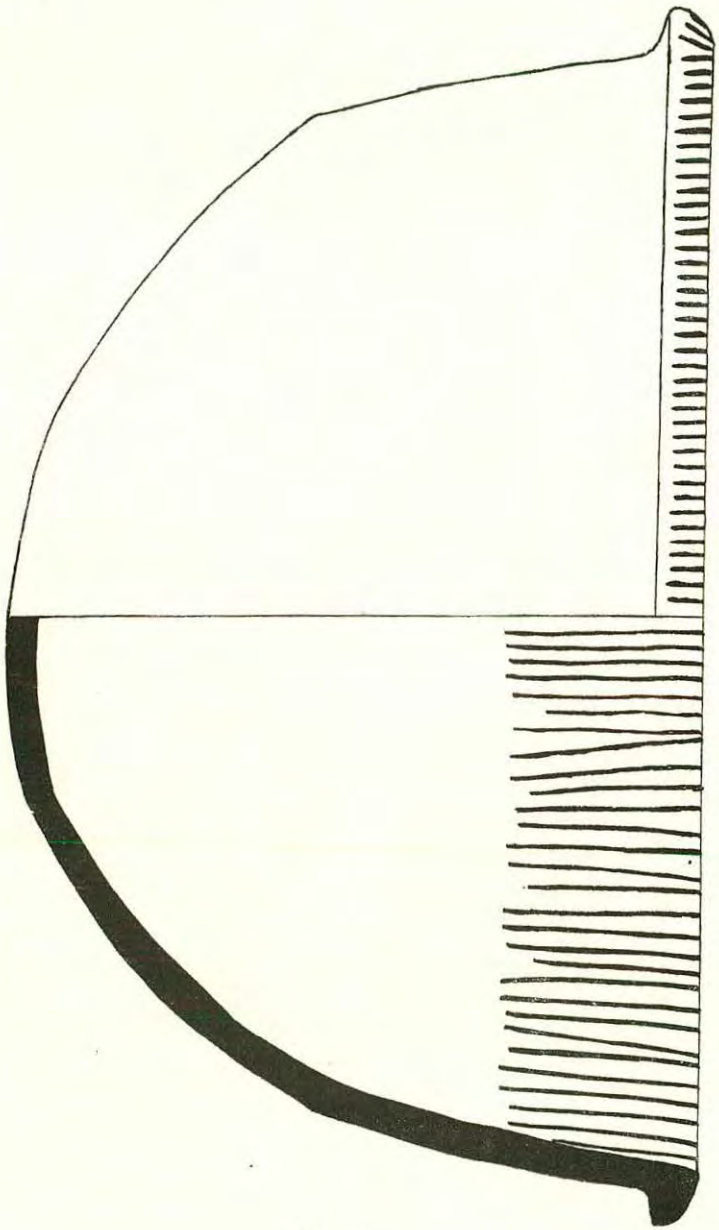


Fig. ix. ½

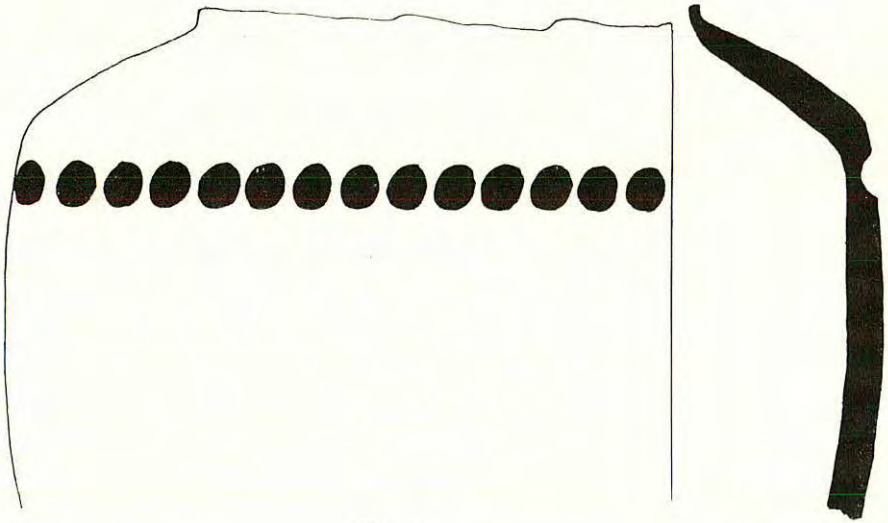


Fig. IV. ½

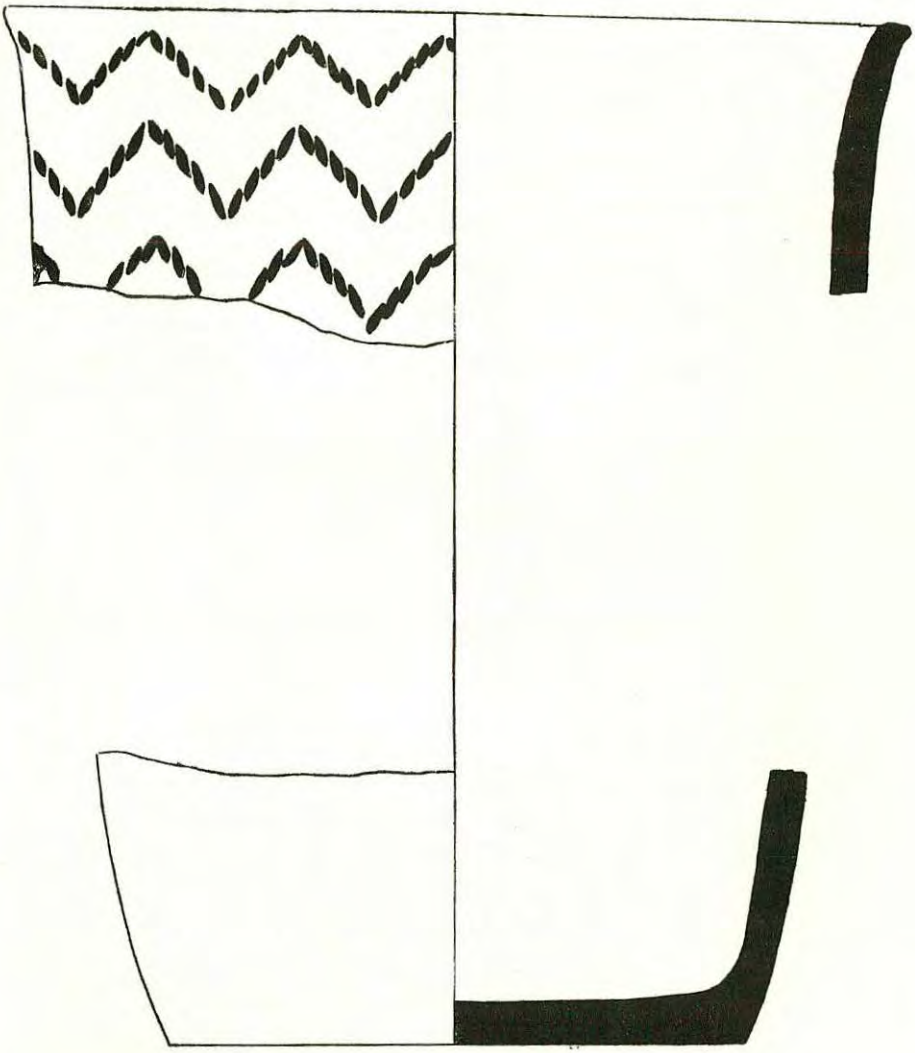
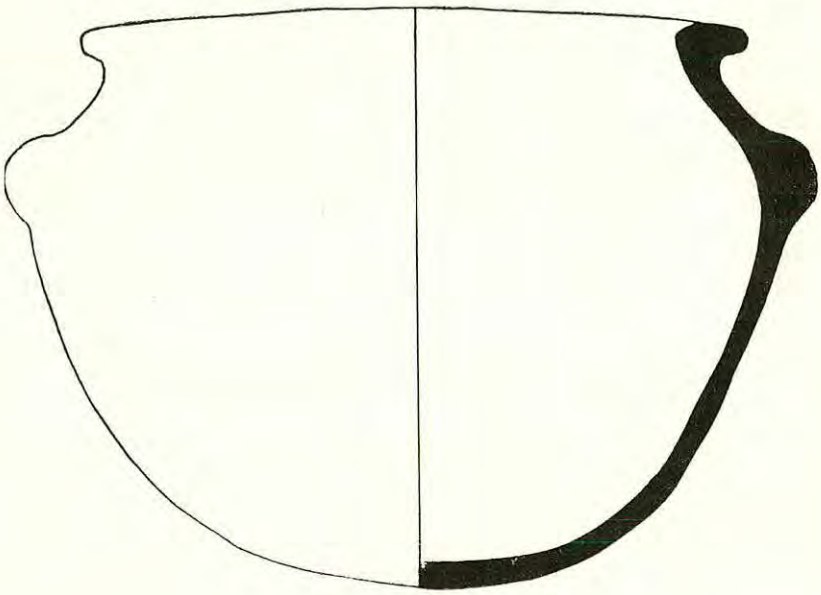


Fig. v. $\frac{1}{2}$



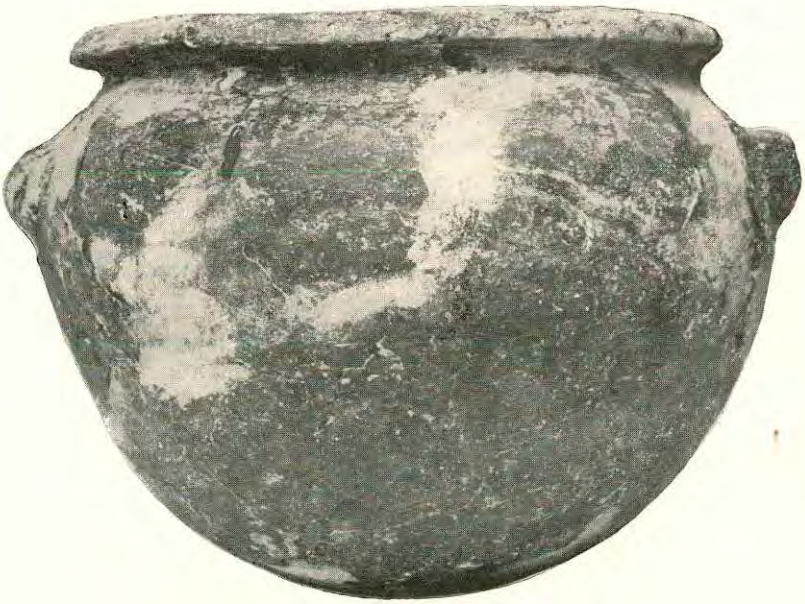


Fig. viii. ½

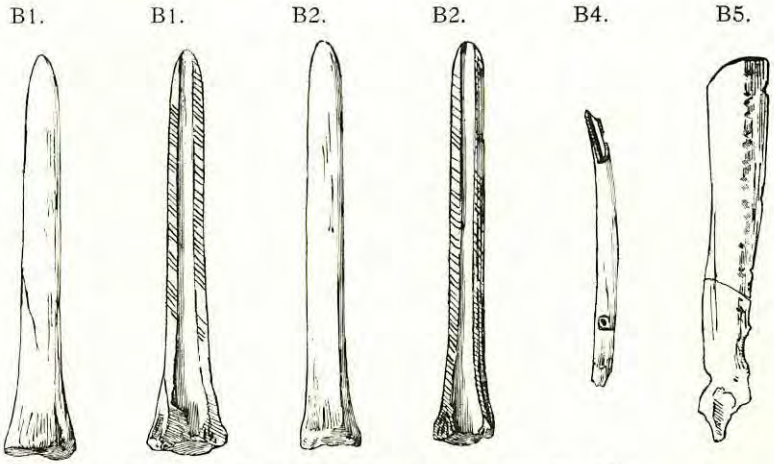


Fig. xi. Bone Implements (see pp. 21, 22).

Fig. xii. Bronze fibula (see p. 6.)

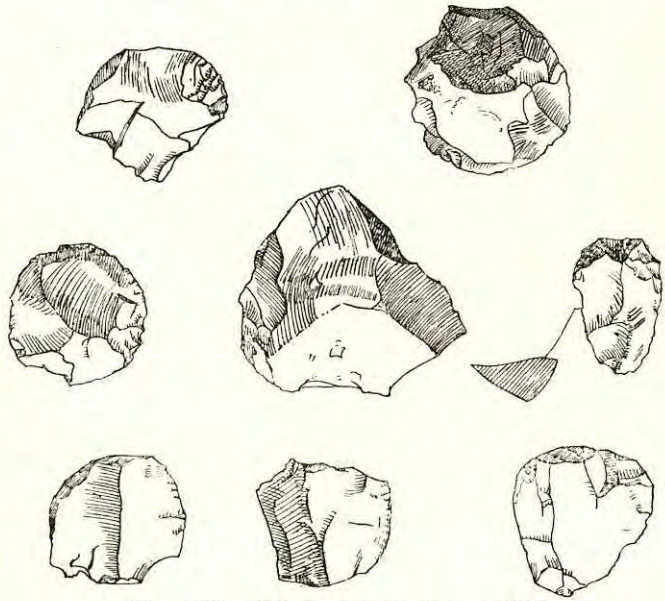


Fig. xiii. Flint scrapers (see p. 22.)

CHELM'S COMBE ROCK SHELTER.

CHELM'S COMBE ROCK TOMB.

Fig. vi shows a section of a large vessel with bevelled rim, two fragments of which were associated with the cord-chevron vessel described above, while the rest were discovered by Preb. Palmer and Mr. Balch at the bottom of their trial hole near the face of the rock—this corresponded with our Layer III. The pot is greyish brown in colour, hand-made and showing on the inside marks caused by its having been wiped round with a wisp of grass or some other primitive kind of brush. It is well-baked and contains in its paste large particles of grit. The rim, whose diameter was approximately 8¾ ins., was made after the vessel had been shaped by the potter running his thumb along the top and, by so doing, bevelling the rim inwards and leaving the inner edge of the bevelled surface rough. This roughness of one edge of the lip is characteristic of pottery contemporary with round-bottomed bowls and beakers. The walls make an angle of approximately 105 degrees with the base which is flat and smoothed on the inside.

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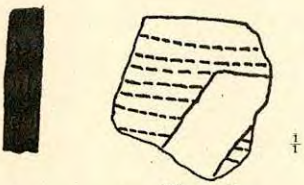
Fig vi.

Two fragments of an ornamented beaker were found on the trodden floor in association with the bevelled rim and cord-chevron vessels. The piece illustrated (Fig. vii) shows part of the rim which is flat topped and ¼ in. in thickness. The straightness of the neck and rim make it certain that the beaker we are dealing with was of the high necked globular class (Thurnam's Type A). The outer surface is smooth and reddish-brown in colour, the paste being slightly lighter. The average thickness of the walls is ⅜ in. From such a small fragment it is impossible to diagnose with certainty the type of design, but it appears to be that of a bar-ribbon device on ground shaded by parallel horizontal lines of oblong punch marks. The bar-ribbon consisted of alternate horizontal bars



½

Fig. vii.

above and below connected by slanting bars. This was undoubtedly derived from the bar-chevron, though no analogous decoration seems to be recorded.

LAYER IV.

In this layer were many smashed fragments of true Neolithic pottery. Two round-bottomed bowls have been restored, but there are a few more pieces (Fig. x) that belong to other vessels of the same class.

Fig. x. ½

Fig. viii represents a round bottomed bowl, 6 ins. high and 6½ ins. wide at the lip. The rim is expanded, rounded on the top, curling outwards and unornamented. It has been made by running the finger round the top of the bowl and curling the edge over. The junction of the rim with the body forms a slight neck or hollow moulding that shades off into the curve of the sides. The rest of the body constitutes a rough hemisphere. The surface varies from a light to a dark chocolate brown and is uneven to the touch owing to the coarseness of the paste which is black, very friable and gives to the vessel a somewhat mottled appearance. There are no crushed shells in its composition. In places where it is best preserved, it shows evidence of its having been thoroughly boned. There are two unperforated bosses on opposite sides immediately above the widest part of the bowl. They are roughly hemispherical in shape and have been moulded during the building of the sides and not affixed afterwards. The average thickness of the walls is ¼ in.

Another round bottomed bowl is shown in Fig. ix. It is 6⅞ ins. in height and has a diameter of 12½ ins. at the lip. The rim is of the turned-over variety, expanded, rounded at the top with a fairly sharp outer edge. It is ornamented on the top by parallel grooves made with some blunt instrument, probably a bone awl. These lines turn over the inner edge of

the rim and are continued on the inside of the vessel for a depth of 3 ins. There is no hollow moulding at the neck. The body does not form a perfect hemisphere with the round bottom, for there is a slight carination $3\frac{1}{2}$ ins. below the lip. Above this carination the sides run upwards and outwards to meet the rim with only a suspicion of a curve; below the carination, however, the walls curve strongly inwards, forming a continuous sweep from side to side. The outer surface varies from a light to a dark chocolate brown in colour, is somewhat uneven, has been tooled and is somewhat mottled in appearance owing to the particles of grit. The paste is black, very gritty and extremely friable, but contains no pounded shell, but occasionally some small fragments of charcoal. The outlines of this bowl bear a greater resemblance to vessels from Scottish chambered cairns than to English types; and reference may be made to examples from Unstan, Orkneys.[3]

SUMMARY.

In Layer I, between the black line on which the furnace rests and the ground level, there is a mixture of pottery ranging from the Early Iron Age through the Romano-British period to recent times; the furnace itself belonging to the first. Thus the black line separates the pottery above it from the pottery of older and absolutely different cultural types below.

The finger-tipped pot from Layer II differs from the forms usually associated with the dawn of the Early Iron Age, the method of applying the decoration being dissimilar. Its shape suggests an earlier date, and it is probable that it is not much later than, if not contemporary with, the beaker and associated pottery from the layer below.

Layer III was delimited below by a definite trodden floor, more or less horizontal, on which stood the hearth and in which were embedded fragments of at least three different vessels. A large boulder and several smaller ones were lying in a slanting position with the level of the trodden floor

3. Cat. Nat. Mus. Antiquities of Scot. p. 181, EO 137.

passing through their centres. The fact that two fragments of a human jaw were found, the one at the top corner and the other at the bottom corner of this stone, indicates that it had fallen down after the date of the trodden floor and had deranged the stratigraphical position of certain objects: and it is therefore an open question as to whether or not some of the fragments of the round-bottomed bowls found in Layer IV had not been displaced from their proper horizon and did not originally belong to Layer III.

On this trodden floor and therefore definitely associated and contemporary with each other were vessels of three types that, in other places, have been found associated with round-bottomed bowls of the late Neolithic Period. The cord-chevron decoration, as mentioned above, has been seen on a fragment of pottery found with the Mortlake bowl; the bevelled rim at Gullane Bay, Scotland[4] was found together with beakers, and at Peterborough[5] with round-bottomed bowls; while beakers have been associated with round-bottomed bowls at Mortlake, Peterborough, West Kennet,[6] Rowberrow Cavern in the Mendips,[7] and lately by Mr. Keiller at Windmill Hill near Avebury. Taking into consideration the paucity of finds of round-bottomed bowls, their almost constant association with beakers cannot be mere coincidences. It is permissible, therefore, to ascribe Layer III with its beakers and vessels with bevelled rim and cord-chevron ornament to the end of the Neolithic and the dawn of the Bronze age, the so-called Æneolithic Period.

The pottery from Layer IV belongs to vessels that possess round bottoms, have expanded out-turned rims and are made of very gritty paste extremely light in weight. These can with safety be dated as Neolithic. The fact that the larger bowl (Fig. ix) has no decoration on the body and no hollow moulding beneath the rim, coupled with the fact that it has a

4. Proc. Soc. Ant. Scot. XLII, p. 308.
5. Antiq. Jour. II, p. 222.
6. Archæologia, LXII, p. 340.
7. Proc. Spelæological Soc. II, No. 3.

rudimentary carination, suggests that it is later in date than the Mortlake-Wallingford-Hedsor types which have a deep hollow moulding and are ornamented over the whole of their bodies. The earlier bowls at Peterborough had a marked carination.

The type exemplified by Fig. ix has strong affinities with pottery of the dolmen type from Spain and France,[8] and doubtless they sprang from a common ancestor. It is interesting to note that these round-bottomed carinated dolmen bowls are usually associated with beakers, but in these cases the beakers are of the caliciform type. Although some authorities consider that the dolmen pottery was introduced into Brittany somewhat earlier than the beakers, yet opinions are divided and at the most the period between the implantation of the two types cannot have been a long one.

8. Vide de Morgan. *L'humanite Prehistorique*, Fig. 134, no 4., also Dechelette, *Manuel d'Archeologie*, II, Fig. 206, no 3., also Le Rouzic et Pequart, *Fouilles faites dans la region de Carnac*. 1922, Pl. VII, fig. 1.

REPORT ON THE BONE AND FLINT IMPLEMENTS

by R. C. C. CLAY, F.S.A.

B. 1 and B. 2. (fig. xi). Two blunt pointed implements of bone from Layer IV, $4\frac{1}{4}$ and $4\frac{1}{8}$-ins. in length. They have been made from split metatarsals of (?) sheep and are unperforated. The split surfaces have been polished smooth and the outer surfaces show signs of polish especially near the point. The butts have not been trimmed. These tools differ from the Early Iron Age so-called "gouges" in that they are made from split bone. The Iron Age specimens are usually perforated both horizontally and transversely, and the butts are

often trimmed. In Barrow4, Upton Lovell[1] upwards of 60 very similar implements were found. They were of split bone, but only 2 were unperforated. This barrow also yielded an axe-hammer of diorite with hourglass perforation and splayed edges, and a small bronze awl; thus it can be dated as of the early Bronze Age—a date not incompatable with the finding of round-bottomed bowls and beaker in our Layer IV.

B.3. Two fragments of a long polished bone pin, circular in cross section. Length of fragments $3\frac{1}{2}$ and 2 ins. Both have been gnawed by some carnivorous animal. Similar pins have been found with middle Bronze Age burials.

B.4. (fig. xi). Portion of a hollow bone from Layer IX with more or less circular holes on both edges. These holes are not opposite one another. It has been suggested that this is a bone whistle, but the so-called whistles of the upper Palæolithic Age were made from the phalanges of Reindeer, and even their title to this name is disputed.

B.5. (fig. xi). Fragment of split bone from Layer IX with a line of spaced indentations on the outer surface, and similar but less distinct marks on one edge. They appear to have been made with some sharp pointed tool; and their regularity and alignment suggest that they are the work of man, but the probability is that they are the result of gnawing.

A pounder of sarsen that has seen considerable use as a rubber until its surface has become almost facetted. Found in Layer III.

Eight flint scrapers (fig. xiii) found together on a ledge on the western face of the rock in Layer IV. Seven of them are sharp at the edges and are made of dull blue-grey flint with thin crust and numerous small cherty inclusions. The eighth is of lustrous porcellaneous flint with blunted edges and is of the steep-faced, keeled variety. Two of the scrapers are made from very unsuitable flakes that allow for only a very limited scraping edge. The suggestion can therefore be made that

1. *Cat. Devizes Mus.* I. p. 1., *Ancient Wilts.* p. 75. *Arch.* XV. p. 1, 2.

they were fabricated in the neighbourhood where good imported flint was at a premium. Their lack of lustre and sharpness of edge supports this supposition. The white lustrous implement with blunted edges must have had much use before it came to Chelm's Combe, and it may have been picked up from the surface of the Mendips by its last owner.

THE VERTEBRATE AND MOLLUSCAN FAUNA

by J. WILFRID JACKSON, M.SC., F.G.S.
(Manchester Museum)

The remains of various animals and birds, together with the shells of mollusca, from the Rock Shelter at Chelm's Combe, Cheddar, have been submitted to me for examination and report by Mr. H. E. Balch, F.S.A. The assemblage contains many interesting species, and two distinct periods of occupation, at least, are represented; one is Pre-Historic and the other Late Pleistocene. The various bones, etc., have been carefully collected from some 21 layers, numbered 2 to 22 in descending order. The thickness of each layer is one foot. Judging from the remains the horizon down to, and including, layer 5 is Pre-Historic, and below that level, Late Pleistocene. Layer 1 includes a mass of boulders and debris shot over the cliff and is sometimes 5 feet in thickness, tapering out to one foot.

The identifications of the different vertebrate animals and of the mollusca are given on my own responsibility; but the naming of the bird-bones is due to the kindness of Mr. E. T. Newton, F.R.S. I take the present opportunity of thanking the latter authority for his unfailing willingness in undertaking this difficult task.

REVIEW OF THE SPECIES

Amphibia

Rana temporaria (L.). (Common Frog). The remains of frogs are not very numerous, but bones of this species are present in collections from layers 6, 7, 8, 9 and 10.

Aves

In connection with the bird-bones from Chelm's Combe cave Mr. E. T. Newton writes that the species are all recent forms and the majority of them call for no special remarks. One remarkable feature is the fact that the *Lagopus* bones are so much more abundant than any of the others. The larger, he believes, are correctly referred to the Red Grouse (*Lagopus scoticus*), while the smaller forms agree better with the Ptarmigan (*Lagopus mutus*). The Little Auk (*Alle alle*), too, is somewhat of a surprise at Cheddar.

Species	Layers
Lagopus scoticus (Red Grouse) ...	3, 7?, 8 to 13, 15 & 21
Lagopus mutus (Ptarmigan) ...	3, 8 to 10, 12 to 14, 15?, and 17.
Phasianus colchicus? (Pheasant?) ...	15.
Perdix cinerea (Partridge)	7, 11, 12?, 13 to 15, 17?, 19, and 20.
Alle alle (Little Auk)	3, 9, and 10.
Falco tinnunculus (Kestrel)	9, 14, 15, and 19.
Bubo bubo (Eagle Owl)	12.
Branta leucopsis (Barnacle Goose)...	11.
Anas boscas (Duck)	8, 9, and 10.
Spatula clypeata? (Shoveller Duck?).	9.
Turdus viscivorus (Missel Thrush)	8.
Turdus musicus (Song Thrush) ...	5 to 7, 9 to 13, and 17.
Turdus merula (Blackbird)	4, 5, 7, 10 to 15.
Turdus iliacus (Redwing)	9, 11, and 12.
Turdus torquatus? (Ring Ouzel?) ...	10.
Anthus pratensis (Titlark)	8.
Chloris chloris (Greenfinch)	8.

Species	Layers
Fringilla coelebs? (Chaffinch?) ...	10 and 14.
Parus major (Great Tit)	11.
Sylvia atricapilla? (Blackcap?) ...	11.
Montacilla lugubris (Wagtail) ...	11.
Picus viridis (Green Woodpecker) ...	11.

NOTE.—There are no bird remains from layers 16 and 18.

It is interesting to note that Ptarmigan bones occurred in some abundance in Merlin's Cave, Wye Valley. It has also been recorded from Langwith Cave, Derbyshire, from Aveline's Hole, and from Chudleigh, Devon. According to Mr. T. A. Coward, M.Sc., F.Z.S., this species only occurs with us in the highest mountains of Scotland and some of the western islands, seldom breeding below the 2000-foot contour.

The Little Auk is also recorded from Merlin's Cave. Many of the other species have been met with at Aveline's Hole and other caves.

MAMMALIA

INSECTIVORA

Talpa europea (L.) (Mole). This animal is represented by an ulna from layer 8; a femur from layer 10; and a humerus from layer 17.

Sorex pygmaeus (Pigmy Shrew). Lower jaw from layer 2.

CHEIROPTERA

Bats are represented by odd bones from layers 10 and 11, but it has not been possible to define the species.

RODENTIA

Lepus anglicus Hinton. (English Varying Hare). This is represented by fragmentary lower and upper jaws, and by various limb-bones, from layers 3, 6, 8, 10 to 19, and 21.

Ochotona spelæa (Owen). (Cave Pika). Nine animals, at least, are represented by remains from this cave. Layer 8 has produced a fragmentary skull without teeth, and three left lower jaws with teeth; layer 9, the forepart of a skull with a few teeth and four left lower jaws with teeth; layer 10, the

forepart of a skull with teeth and two left lower jaws; layer 17, fragmentary skull without teeth.

Apodemus sylvaticus (L.). (Long-tailed Field Mouse). One lower jaw from each of the layers 8 and 12.

Dicrostonyx henseli Hinton. (Hensel's Banded Lemming). From layer 8 is a lower jaw which agrees with this species.

Arvicola abbotti Hinton. (Abbott's Water Vole). Remains of this animal are represented in five layers, viz. 8, 9, 10, 17, and 18, chiefly by lower jaws. Layer 8 yielded a palatine fragment of skull, and layer 18 an imperfect skull without teeth. There seems little doubt as to the identity of these remains.

Microtus arvalis (Pall.). (Continental Field Vole). One lower jaw from each of the layers 8 and 9 belong to this vole.

Microtus anglicus Hinton. From layer 8 comes one lower jaw with teeth, and from layer 10 there are three lower jaws with teeth.

Microtus ratticeps (Keys and Blasius). (Northern Vole). This vole is represented by a single lower jaw from layer 8.

Microtus agrestis (L.). Field Vole). Represented by a palatal fragment with cheek-teeth from layer 8.

UNGULATA

Equus caballus (L.). (Horse). The remains of horse occur among the bones from layers 7 to 13 inclusive. Layers 7, 8, 9, 11 and 13, yielded nothing of special importance; but from layer 10 comes a metacarpal which agrees exactly with a similar example from the Creswell Caves (=*robustus*- type), a fragmentary lower jaw with six teeth (tooth-row = 149 m.m.), and the forepart of the lower jaw with incisors (width of incisors = 61 m.m.); from layer 12, a fragment of upper jaw with five teeth (similar to Professor Ewart's *robustus*-type), and several limb-bones including a radius 335 m.m. long.

Cervus elaphus (L.). (Red Deer). A fragment of antler from layer 5 belongs to this animal, as do also a lower jaw fragment with five teeth in place and an unbroken and well-preserved tibia, 382 m.m. long, from layer 9.

Rangifer tarandus (L.). (Reindeer). Reindeer remains are fairly numerous and are present in material from layers 3, 6 to 17, and doubtfully from layers 21 and 22. The remains from layer 3 consist of the proximal end of a radius differing in preservation from the other bones (except hare) found at this level. It is clearly a derived specimen from a lower bed. The distribution of the remains from the other levels is as follows :—layer 6, fragmentary bones and teeth; layer 7, distal end of tibia, a metacarpal 196 m.m. long, and loose teeth; layer 8, various teeth, fragmentary limb-bones, and an antler-tine trimmed at the base (probably used by man as a piercer); layer 9, fragmentary antlers (young), broken limb-bones, fragments of skull and lower and upper jaws with teeth, loose milk-teeth, etc. ; layer 10, fragments of young and adult antler, four fragmentary lower jaws, and limb-bones, including a metatarsal 285 m.m. long, and a humerus 235 m.m. between the articular surfaces; layer 11, vertebræ, fragments of antler, upper and lower jaws, loose teeth, and limb-bones including a metacarpal 206 m.m. long; layer 12, vertebræ, antler-fragments (young), two lower jaws (tooth-row = 101 m.m.), upper jaw fragment, loose teeth, limb-bones including a humerus 225 m.m. between articular surfaces, a radius 271 m.m. over-all, and a tibia 325 m.m. over-all; layer 13, a humerus 231 m.m. between articular surfaces, toe-bones, upper and lower teeth, and fragments of young antler; layer 14, teeth only ; layer 15, one upper molar and bone-fragments ; layer 16, one molar and antler tip; layer 17, piece of split bone ; layers 21 and 22, dark-stained bone-fragments, probably of reindeer. The remains generally seem to indicate animals of large size.

Bos longifrons Owen. (Celtic Shorthorn). Layer 3 yielded a few fragmentary bones; layer 4, a few teeth and bone-fragments of young and old animals; layer 5, two broken teeth. Little can be said concerning these remains, except that they undoubtedly belong to the small celtic ox.

Ovis or *Capra*. (Sheep or Goat). Layers 3, 4, and 5,

yielded bones, vertebræ, and fragments of jaws, which may belong to either sheep or goat.

Sus scrofa L. (Pig). A few old and young teeth and bones occur among the remains from layers 3 and 4. These belong to domestic pigs. There is also an upper molar from layer 6, and another with two incisors from layer 8. These may belong to the wild form.

CARNIVORA

Mustela erminea L. (Stoat). From layer 8 there are two humeri; from layer 9, a canine; and from layer 10, a femur and tibia, all of which undoubtedly belong to the stoat.

Gulo gulo L.? (Glutton?). A juvenile lower jaw from layer 12 is referred with some doubt to the glutton. It consists of the left ramus and anterior half of the right, both containing the deciduous teeth D3 and D4 in place. On cutting away the side of the left ramus the almost fully-formed germ of the first true molar or carnassial was found in the crypt. This measures 18 m.m. in length, and agrees closely with M1 of the glutton.

Meles taxus Bodd. (Badger). A lower jaw of a young animal from layer 4, and a typical ulna from layer 6, belong to this animal.

Vulpes vulpes L. (Common Fox). The common fox is represented by fragmentary lower jaws, teeth, and bones, from layers 7 to 18 inclusive.

Alopex lagopus (L). (Arctic Fox). The presence of the Arctic Fox is clearly proved by a fragmentary lower jaw from layer 8, two fragments of upper jaws and one fragment of a lower jaw from layer 12, and a fragmentary upper jaw from layer 14. All these possess the characteristic teeth of the Arctic species.

Of the above list of animals the following are now extinct in the British Isles:—*Microtus arvalis, Microtus ratticeps, Rangifer tarandus, Gulo gulo,* and *Alopex lagopus.* The following are totally extinct:—*Lepus anglicus, Ochotona*

spelæa, Dicrostonyx henseli, Arvicola abbotti, and *Microtus anglicus.*

In the absence of large pachyderms, and of carnivores such as the hyæna, Chelm's Combe cave resembles Aveline's Hole, and the date is undoubtedly the same, *i.e.* Late Pleistocene.

The presence, in layer 3, of such remains as reindeer, varying hare, red grouse, ptarmigan, and little auk, may be due to disturbance by burrowing animals.

In addition to the foregoing animals the following human remains occur among the bones from this cave :—layer 4, two toe-bones; layer 5, one fragmentary vertebra and a fragment of the upper jaw of a child; layer 8, two toe-bones.

List of the Non-Marine Mollusca

The species of land shells mentioned below were obtained by Mr. Balch during the investigation of the rock shelter. They come from layers 2 to 17 as indicated. In addition, Mr. Balch has sent samples of cave-earth from each layer, and a cursory glance at some of these shows that shells of mollusca are included. The examination and sorting of this material will take some time, and possibly several additions to the list will be made, especially among the smaller forms of mollusca.

Species	Layers
Polita cellaria (Müll.) ...	2 to 17. Abundant in the lower layers.
Polita alliaria (Mill.) ...	10 and 12. Scarce.
Polita nitidula (Drap.) ...	2, 3, 5, 8, 9, 11, and 17. Sparingly in each.
Vitrea crystallina (Müll.) ...	2 and 11. One specimen in each.
Zonitoides excavatus (Bean)	9 and 13. One specimen in each.
Goniodiscus rotundatus (Müll.)	2 to 5, 7 to 10. Abundant in layer 2.
Hygromia hispida (L.) ...	2 to 5, and 10. Most common in 2.

Hygromia striolata (Pfeif.)	2 to 7. A few in each. (See remarks below).
Ashfordia granulata (Alder)	7. One example.
Helicigona lapicida (L.) ...	2 to 6. Most common in layer 2.
Arianta arbustorum (L.) ...	10. One specimen only.
Helix aspersa (Müll.) ...	2. Five specimens from this layer.
Helix nemoralis (L.) ...	2 to 13, and 15. Common in upper layers.
Helix hortensis (Müll.) ...	2 to 11. Not common : dwarfs in lower layers.
Ena montana (Drap.) ...	2, 3, and 5. One specimen in each.
Ena obscura (Müll.) ...	2 and 3. One specimen in each.
Cochlicopa lubrica (Müll.) ...	2, 3, 6, and 8. Common in layer 2.
Clausilia rugosa (Drap.) ...	2, 3, and 8. Common in 2 and 3 : one specimen in 8. All small forms.
Clausilia laminata (Mont.)...	2 to 13, 15 to 17. Most common in layers 8, 9, and 10.
Clausilia rolphii (Leach) ...	2. One specimen.
Abida secale (Drap.) ...	2 and 3. Four examples in 2 : one only in 3.
Pomatias elegans (Müll) ...	2 to 13, and 15. Common in upper layers : single examples in 12, 13 and 15.

With the exception of *Zonitoides excavatus, Ashfordia granulata, Ena montana,* and *Clausilia rolphii,* all the species have been recorded from the Late Pleistocene deposit at Aveline's Hole. Two of these species, it will be noted, come from the upper levels, *i.e.* Pre-Historic, at Chelm's Combe. So also do *Helix aspersa, Ena obscura,* and *Abida secale.* The first of these is rare as a Pleistocene fossil, and has only been recorded from Devonshire and Aveline's Hole : the last has

been recorded as Pleistocene from Cuxton, Kent, and Buckland, near Dover, in addition to Aveline's Hole.

At Chelm's Combe there is some variation in size to be noted among the shells from the different layers. For example, *H. nemoralis* and *H. hortensis* are rather small in the lower layers. *Hygromia striolata* is of large size (15.5 to 16 m.m.) in layers 4 and 5, and the shells present an extraordinary resemblance to *Hygromia villosa* var. *depilata* in the absence of the keel on the body-whorl and in the flatness of the spire. They are very distinct from the Pleistocene specimens from Dog Holes cave, North Lancashire: these latter are smaller and somewhat trochoid. Among the specimens of H. *hispida* there is a very trochoid example from layer 3.

Balance Sheet—Chelmscombe Excavation.

Receipts.

	£	s.	d.
Dr. A. Bulleid, F.S.A.	3	3	0
Stanley Lewis ...		10	6
Mrs. A. Stallard ...	1	1	0
John Grubb	1	1	0
Bath Branch of the Somerset Archæological and Natural History Society ...	5	0	0
Mendip Nature and Research Committee	3	0	0
Mrs. A. K. Brooks (the late)	1	0	0
R. F. Parry	1	1	0
Mr. & Mrs. A. Balfour	1	0	0
Miss Jackson ...		10	0
The Rev. E. J. Day...	1	1	0
A. C. Fryer	1	1	0
Capt. A. Lewis ...		10	0
E. Palmer Bowen ...	1	1	0
Col. O. Rowe ...		10	0
J. Cooke Hurle ...	1	0	0
Alex. Keiller, F.S.A.	3	3	0
The Rev. T. Meyers	1	1	0
R. S. Churchill ...		5	0
C. C. Burnett ...	1	1	0
A. F. Somerville ...	2	2	0
Wm. Gough		10	0
F. H. Hibberd ...		10	6
The Rev. T. F. Palmer	5	0	0
Miss J. F. Knight ...	3	3	0
Col. E. St. C. Pemberton, F.S.A.	2	2	0
H. M. Ingham ...		10	0
E. E. Barnes... ...	2	2	0
E. J. Borrow... ...	1	1	0
Miss Wall	1	0	0
John Morland ...		10	0
Miss L. M. Salmon		5	0
Miss F. K. Brabazon		5	0
J. B. Clark	1	1	0
F. H. Berryman ...	1	0	0
James Calder ...	1	1	0
Dr. N. C. Cooper ...	1	1	0
Mrs. H. Pavey ...	1	0	0
Sir W. Boyd Dawkins	1	1	0
L. Evans	1	0	0
Proceeds of Lecture...	9	2	3
	£63	6	3

Expenditure.

	£	s.	d.
W. E. V. Young, Excavator. From 1st Dec., 1925 to 20th April, 1926 ...	47	0	0
H. Brooks. Labour ...	2	0	0
B. Heale. ,, ...	1	7	0
J. C. & A. T. Sawtell, printing	1	4	6
Insurance	1	0	0
G.W.R. Carriage ...		5	5
Balance towards printing the Report	10	9	4
	£63	6	3

R. F. Parry,
Hon. Treas.