



FOSSE, CUTTING XIV, HAM HILL, S. SOMERSET, 1925
This cutting is on the E. side of the N. spur of the Hill. Rod 10 feet high
From a Photograph by Mr. H. St. George Gray

Excavations at Ham Hill, South Somerset

PART II

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I. INTRODUCTORY REMARKS

IN the last volume of *Proceedings* (Vol. LXX, pp. 104–116, and Plate XIII), Part I of the Reports on the Excavations at Ham Hill was issued, and it included a bibliography of the chief published papers having reference to this well-known archaeological site.

It also contained a description of Cuttings I to VIII made on the N.W. side of the slope of the northern spur of the hill (with plan); and of the Cuttings, nos. XI and XII, on the east side of the northern spur, in a position known as the 'East Valley.'

In that report the Cuttings, nos. IX and X, made at 'Ham Turn' on the S.W. side of the northern spur were not described, as it was thought inadvisable to do so until further work had been conducted on this important site. During about half the time devoted to the work in 1925, the examination of 'Ham Turn' (Cutting XIII) was continued; but further problems presented themselves and their elucidation must form part of the programme of another season's work, after which it is hoped to describe 'Ham Turn' as a whole.

The remainder of our time this season was confined to an examination of the *fortification* in the middle of the east side of the northern spur (Cutting XIV). This work cannot be

regarded as completed ; owing to some bad weather the time available did not permit of our proving whether there was an *ancient* causeway across the fosse in this position.

However, an interim report on Cutting XIV is here given chiefly for the purpose of recording the discovery of a human skeleton (Plate XV), which, after restoration,¹ was submitted to Professor Sir Arthur Keith for his examination and report. We are grateful to Sir Arthur for undertaking this work and for providing the original drawings from which the two views of the skull (Plate XVI) are taken.

The excavations began on September 9th, 1925, and continued until October 1st (inclusive). Seven men were employed, including William E. Young, of Ebbesborne Wake, as foreman. I take this opportunity of thanking Dr. S. L. Brimblecombe for much assistance rendered me in the general organization of the work. Our thanks are also due to Mr. H. Hebditch for the loan of a small shed.

II. EXCAVATIONS, FOSSE, CUTTING XIV. (Plate XIV, and Figs. 1 and 2).

The chief purpose for which Cutting XIV was made close up to the ridge across the fosse in the middle of the eastern side of the northern spur of the hill was, firstly, to ascertain whether the fosse ended here, that is, to endeavour to prove whether an eastern entrance-causeway existed as part of the original scheme in the fortification of the northern spur of the camp ; and secondly, to determine whether antiquities existed in the silting which would afford evidence of date.

The northern half of the cutting was excavated first, measuring 25 feet by 17 feet, and later an extension was made towards the south (*see* Fig. 1) ; but time did not permit of continuing our work sufficiently far southwards to determine whether a solid rock causeway existed. The area examined, measured on the surface, was 537 square feet.

At this point there is a deep gap in the fortification, forming

1. The restoration was the work of Mrs. St. George Gray.

a trackway through the vallum and across the fosse,¹ from which it runs obliquely—in a N.E. direction—down the hill-side. The question before us was whether this was an ancient or a modern entrance.

In this situation the crest of the inner vallum is no less than 38 feet above the surface of the silting in the middle of the fosse. Apparently very little material had been thrown up

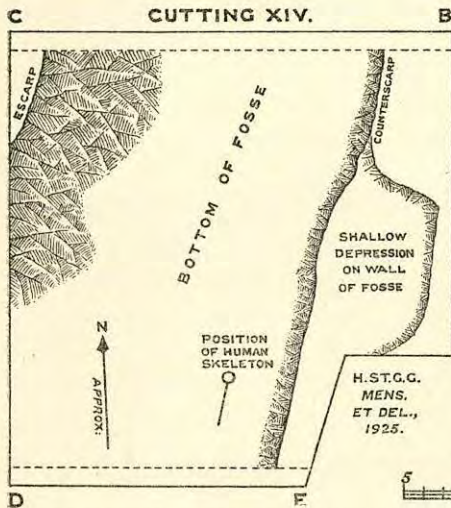


Fig. 1. Plan, showing position of human skeleton.

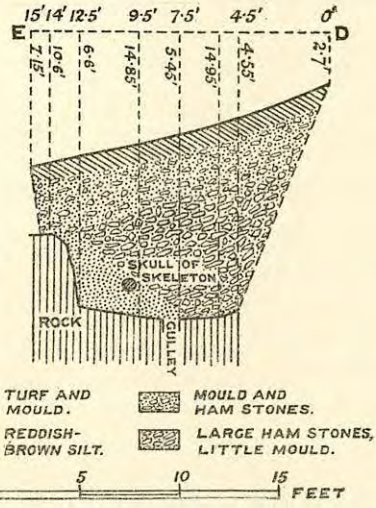


Fig. 2. Sectional Diagram on the line D E of Plan (Fig. 1).

FOSSE, CUTTING XIV, HAM HILL, 1925.

to form this rampart; its great height, best seen in ascending the hill from the east side, is not the result of throwing up a

1. The drop to the surface of the silting of the fosse below the surface of this trackway is not only clearly visible on the side we excavated (the north side), but also on the south side.

Levels were taken of the surface of the silting of the fosse in this area. It was found that it drops slightly from the north towards the south, that is on the north side of the entrance-causeway. It rises, however, slightly as it approaches the north end of Cutting XIV. This level is practically the same as the surface of the silting in a similar position on the south side of the causeway.

vast amount of material, but a matter of scarping the natural hill-side, which operation in this position would have removed some of the rubble overlying the solid rock,—upon which, in the course of years, a certain amount of mould would accumulate and turf grow.

On the s.e. side of this cutting an extension of the digging, 2.5ft. wide, was made across the grass-clad roadway, but a little below the position of the fosse. The maximum length of this trench was 22ft., that is from the s.e. corner of Cutting XIV to the s.e. edge of the roadway, from which the hill drops abruptly. This cutting is not shown in Fig. 1. No pottery nor other relics were found.

In this cutting across the entrance-way we dug to a depth of 3.2ft. at the n.w. end and 8.65ft. at the s.e. end, before reaching undisturbed ground, which appeared to consist of a greyish rubble overlying the Ham stone. Except for the turf and turf mould (average depth 0.8ft.) the stratified 'soils' sloped downwards in a s.e. direction. We were unable to carry this part of the investigation far, but it appeared evident that the material re-excavated had originally been placed here to make the entrance-way practically level transversely, that is from n.w. to s.e.

For its width the fosse was shallow, and the constructors no doubt found the rock in this part very hard and hardly worth the labour of deep penetration. The bottom, which was fairly flat in the part exposed, was channelled rather considerably by gullies running north and south. Such a gully (their max. width was 1.2ft.) is seen on the right-hand side of the bottom of the fosse in Plate XIV. The maximum depth of silting at this, the north end of the cutting, was 7.5ft. (The levelling-rod seen in the picture measures 10ft. in length). Owing to the rise in the turf level at the south end of the cutting, as it approached the entrance-way, the maximum depth of silting increased to 10ft. (see Fig. 2). The width of the fosse at the level of the surface of the rock was about 17ft., on the floor or bottom from 10.5ft. to 11.5ft. (see Fig. 1, and Plate XIV).

Unfortunately the limitation of time and the amount of labour our funds would provide prevented our tracing more of the escarp in a southerly direction, and, for the same reason,

as stated before, the presumed end of the fosse (if such is to be found here) was not reached. This should certainly be determined in the future.

As one would expect, the counterscarp of the fosse was at a much steeper angle than the escarp. It is seen in the diagram, Fig. 2, and also at the top right-hand corner of the photograph, Plate XV, and just to the left of the workmen in Plate XIV.

The materials forming the silting of the fosse are seen in Plate XIV and are diagrammatically represented in Fig. 2. Turf and turf mould from 0·5ft. to 1ft. Below this, mould mixed with small pieces of Ham stone or rubble. This was followed by much larger pieces of Ham stone (sometimes slabs measuring a foot or more in length), mixed more or less with small rubble and yellowish earth. This material extended to the rock bottom in most parts, except on the counterscarp side where a much finer silt was revealed of a reddish-brown colour, containing decidedly few stones and those of very small size (see Plate XIV, and Fig. 2).¹ There was also a certain amount of this fine silt covering the 'walls' of the fosse on the escarp side (as far as were able to expose the profile of the fosse on this side). This silt was, apparently, the fine material washed and blown in during the period when the fosse was open and kept free of large pieces of stone which would be constantly falling from the sides. Such a ditch would require constant attention to keep it clear of detritus; but as soon as it became neglected the silting up in the lower levels would, from natural causes, be very rapid, and it was then that the large stones seen in Fig. 2 would accumulate in a short space of time.²

III. ANTIQUITIES, ETC., FOUND IN THE FOSSE, CUTTING XIV.

It was close to the surface of the fine reddish-brown silt that the human skeleton (Plate XV, and Figs. 1 and 2) was uncovered. Before describing this interesting discovery, how-

1. As the bottom of this 'talus' of silt approached the middle of the fosse it became yellower and greyer in colour and more stoney.

2. See my remarks on the silting up of ditches in *Archæologia*, LVIII, 476-7, and elsewhere.

ever, the other 'finds' from this fosse must be briefly described.

Turning, firstly, to natural history it should be recorded that a large number of shells (non-marine mollusca) were found among the large stones of the silting, especially near the escarp and in the middle of the ditch. The large majority of them came from a stratum about 3ins. thick. Samples of these shells, embracing eleven species, were preserved and are described by the kindness of Mr. A. S. Kennard and Mr. B. B. Woodward in a chapter which follows.

Apart from shards of pottery the following antiquities were found in the cutting :—

E 25. Bent piece of thin bronze banding, with a rivet-hole at both ends. Depth 4·5ft. ; in middle of fosse, with Romano-British pottery.

F 12. Hammerstone of flint. Depth 5ft. ; in Romano-British deposits.

F 13. Small end-scraper of flint. Found under the turf, and of no datable value.

F 15. Arrowhead of flint, kite-shaped, unfinished, length 29mm. The blunter end still shows the bulb of percussion of the original flake. Found in the fine silting thrown out from below the human skeleton ; it came from the bottom 1·2ft. of silting. Probably it found its way into this position a short time before the human body became deposited at a slightly higher level.

F 16. Fragment of the side of a polished flint celt. Found in the fine silting about 2ft. from the human skeleton and 2ft. above the bottom of the fosse. Neither this specimen nor the arrowhead (F 15) can be said to have been associated with the skeleton. Their position may perhaps be regarded as fortuitous, owing to their having become mixed with the material forming the fine silting.¹

I 21. Socketed arrowhead of iron, of slender and narrow form, length 47mm. The socket was formed by hammering up the sides of the thin metal. Found at the s. end of the cutting, depth 4·5ft.

1. Attention might here be drawn to the occasional finding of polished stone celts and flint arrowheads in the Lake Villages of Somerset.

Q 6. Half the top stone of a rotary quern, of the flattened beehive form, diam. $14\frac{1}{2}$ ins., with hole (of circular section) for wooden handle. Depth 4.5ft. A part of the same quern was found a day or two later. Another small piece of quern was found at a depth of 2.5ft.

W 15. Rough whorl of Ham stone, hole excentric and countersunk on both faces. Depth 7ft.; in the coarse Ham stone rubble.

W 16. Rough whorl of Romano-British black pottery, small; hole excentric. Depth about 5.5ft.

In the bottom 3-feet of silting the following were collected: Two or three pieces of iron slag, piece of a whetstone, a Ham stone disc, not perforated, diam. $2\frac{1}{2}$ ins., and a few sling-stones.

POTTERY.—It is probably from the shards of pottery that one gets the best clue of date in a fosse of this character, especially if the shards are numerous and the types persistent. Owing to the curvature in the stratification of the silting it was difficult to keep the pottery sorted in relation to its true depth. However the shards were classified approximately as follows:—

- (1) Depth from 3ft. to 4.5ft.
- (2) Depth from 5ft. to within 1ft. of the floor.
- (3) From the bottom 3ft. of silting.
- (4) From the bottom or close to the bottom.

(1) The small quantity of pottery found above the 3ft. level was of no importance. Between 3ft. and 4.5ft. the shards were fairly numerous, all of the Roman age, and apparently quite early in that period. Black and brown pottery predominated, but thin grey ware is noted, a piece of Roman mortarium, and part of an eyelet or loop.

(2) This pottery was of the same general character, and includes one piece of thick hard grey ware, a boss of Romano-British type, and part of a thin black vessel with bead rim. At a depth of 6ft. an interesting fragment of incurved rim of grey ware (P 15) was found.

(3) This ware was of much about the same type as that found at higher levels,—for the most part rather thin black and brown pottery. Portions of three eyelets or loops are noted, a small piece of black pottery with lattice pattern, and an

interesting piece (P 16) having a flat rim (width 21mm.) below which, on the exterior of the vessel, is a rather deep fluting. This type has occasionally been noted from other parts of Ham Hill, and appears to belong to the earliest years of the Roman occupation. Mr. Arthur G. Wright who has seen the fragment regards this type, quite independently, as dating from about A.D. 1-50, but he has nothing to compare with it in the fine series of British and Roman pottery under his charge at Colchester.

(4) A similar but much smaller and less striking rim-piece to P 16. Also eleven fragments of a small black vessel having a bead rim, the ware about 5mm. in thickness.

It is seen, therefore, that from the 3-foot level down to the bottom of the fosse there is no appreciable difference in the date or types of pottery found.

Animal remains were not plentiful. An ox's skull (without lower jaw) was found in poor condition on the bottom of the fosse; also a boar's tusk. In the same position the lower jaw of a dog of the size of a black retriever, 2ft. 2ins. at shoulder. The usual measurements of this jaw were taken.

Good samples of charcoal were collected from near the bottom of the fosse. This wood appears to be Ash (*Fraxinus*)—according to Mr. W. N. Edwards of the British Museum.

So far we have re-excavated only a length of 24ft. of the inner fosse of the northern spur of Ham Hill, but from the 'finds' already discovered in this comparatively small area we are led to regard the fosse to be of early Roman construction. If it is slightly earlier then it was allowed to remain open apparently until the years of the early Roman occupation.

IV. HUMAN SKELETON FOUND IN THE FOSSE, CUTTING XIV. (Plate XV, and Figs. 1 and 2).

On September 29th, 1925, this skeleton was uncovered near the bottom of the fosse by the writer and his foreman.¹ The photograph (Plate XV) had to be taken in a foggy drizzle at

1. Drs. Brimblecombe, Ellery and Stovin arrived late in the afternoon and saw the final stages in clearing and removing the skeleton.



HUMAN SKELETON, HAM HILL, S. SOMERSET
Found near bottom of Fosse, Cutting XIV, 29 Sept., 1925
From a Photograph by Mr. H. St. George Gray

6.15 p.m. (summer time). The bones were partly washed *in situ* for better photographic effect; and the view is taken from the turf at the south end of the cutting, looking N.N.E. It is seen that the body was considerably contracted, and its length as it rested in the ground was just 3ft. from the back of the skull to the toes. The skeleton was lying near the top of the fine reddish-brown silt previously referred to. It is seen that the skull is not far distant (about 3ft.) from the counter-scarp of the fosse, below the top of the rock of which it was only 1.15ft. deep. The top of the skull was 1.8ft. above the floor of the fosse; and its depth below the nearest turf on the east was 4.35ft.

The bones of the skeleton were in sequence, and the individual was lying on the left side; head to the N.N.E., feet to the S.S.W., face looking southwards and to some extent downwards. The right arm was bent at an acute angle, the hand being only 8½ins. from the face. The left arm was considerably flexed, the ulna and radius passing under the right humerus, the left hand reaching the right shoulder.

The right leg was much flexed, the knee coming near the right wrist (distance apart 2ins.). The left leg passed under the right elbow, the knee in front of the chin, from which it was only 4ins. distant. This leg was also much flexed, the foot resting practically in the same position as the right foot.

Under and to the west of the skeleton, part of the shaft of a human femur was found. A few inches below the skeleton a pig jaw and two sheep jaws were noted. Reference has already been made to a flint arrowhead and fragment of a polished flint celt discovered near the skeleton, but no relics were found actually associated with the body.

It is difficult to account for the position in which this skeleton was found in the fosse. There was no trace of a grave having been cut to receive the body and no disturbance of the coarse stony silting was detected above. As we shall see in the next chapter this individual probably died of wounds, two of which are identified by clear indications on the bones. But he was possibly injured also in the region of the right armpit and shoulder, for the left hand was found pressing against the body in this curious position. After receiving his wounds he may

have fallen down the slope of the vallum,—dead or alive we know not,—coming to a standstill in the fosse in the position in which we found him, at a time when the ditch had silted up only to a slight extent. It is conceivable that he actually died in this position. But even if he did, why was he not removed from such an exposed position and buried properly? It is possible of course that a little of the fine reddish-brown silt was heaped up round and over the body.

V. REPORT ON THE HUMAN SKELETON (Plate XVI).

BY PROF. SIR ARTHUR KEITH, M.D., LL.D., F.R.S.

Conservator of Museum, Royal College of Surgeons of England.

There are two circumstances which make this skeleton—that of a man—worthy of a full report; (1) its remarkably good state of preservation; (2) its date. The archaeological evidence assigns it to a very early point in the period of the Roman occupation. Does he represent a Roman legionary from abroad or a Briton? On the evidence I am to submit I think he must be regarded as a native of England. We know very little concerning the physical characters of the natives of the South of England during the period which immediately precedes the arrival of the Romans. It is usually supposed that cremation and not inhumation was practised by them. A few years ago the late Mr. R. W. Hooley discovered two skeletons at Worthy Down, Winchester, which, on archaeological evidence he assigned to a late Celtic date—a century or two before the arrival of the Romans. One of these two skeletons was remarkably well preserved, its state being much the same as seen in the bones now before me from Ham Hill. More remarkable still, the man from Ham Hill is in head form, stature, and racial characters a duplicate of the man from Worthy Down. Some or all of the human remains discovered at Harlyn Bay, Cornwall, are probably of the same date; the same type of skull is found amongst these as at Ham Hill and Worthy Down. Further, I have had an opportunity of examining many skulls and skeletons from Barnwood, Glos.; these seem to be remains of British natives living under Roman

rule in the second and third centuries of our era. Amongst these Romano-British people of the West Country we again meet with the Ham Hill type of skull. I presume that these people represent Celtic speakers—the men who occupied and ruled the South and West of England before the Romans came. From such considerations it will be seen that the Ham Hill skeleton deserves a full description.

The skeleton is that of a man; the extreme length of his right thigh-bone is 453mm.; the extreme length of his tibia 384mm.; from which we may infer that his stature was about 1.680m. (5ft. 6ins.). The bones of his limbs are cleanly cut and of moderate strength, giving the impression that in life the man had a well-knit muscular frame. As to his age, the sutures of his skull are still open suggesting that he was under thirty-five years of age at the time of death; his teeth, especially his molars, are deeply worn, indicating either that his food (meal) was gritty or that he was older than I have suggested. As to the cause of death there is no indication, but one notes that at death, or soon after, his right leg was slashed into by a sharp weapon like a sword,—such a blow as a man fighting on horseback might receive. The blow cut through the fibula and entered some way into the tibia. This points to death while fighting. On his right frontal eminence is the healed scar of a wound that had sunk to the bone.

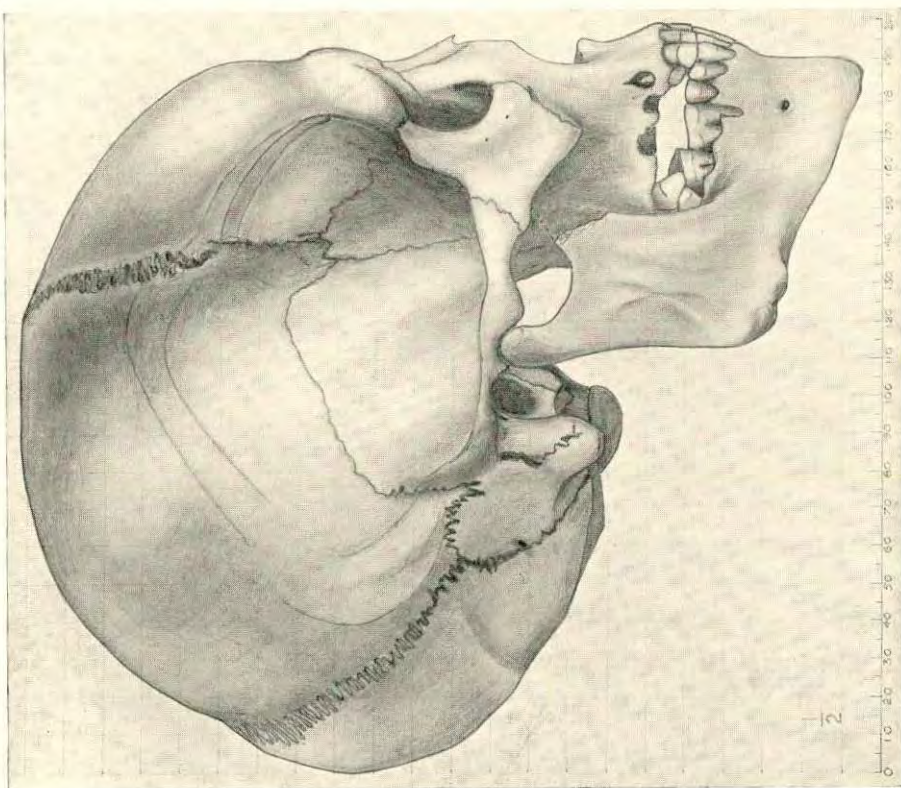
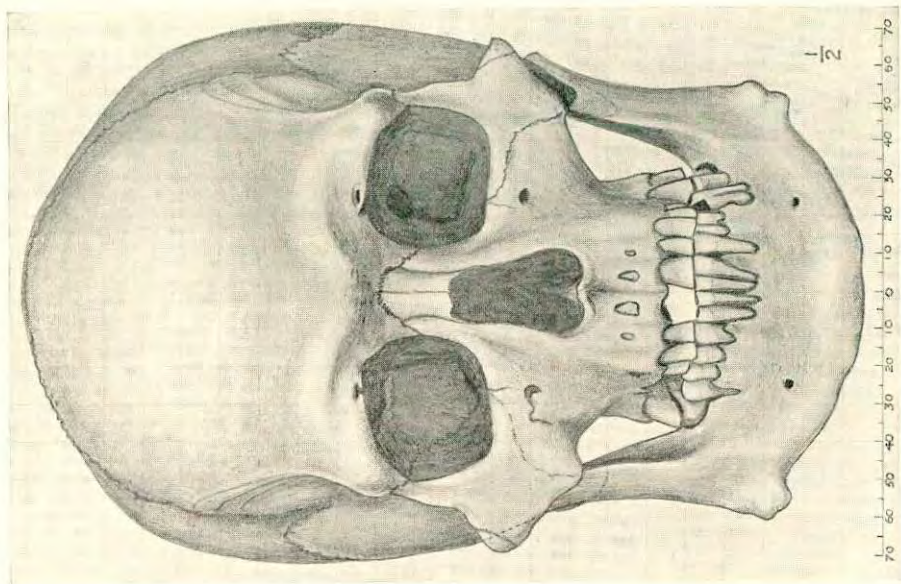
The maximum (glabell-occipital) length of his skull is 193mm.; its greatest width (situated above and behind the ear on the squamo-parietal suture) is 142mm.; the width is 73.6% of the length; the man belonged to a long-headed or dolichocephalic racial type (Plate XVI). The skull is high; its height measured from basion to bregma is 149mm.; its auricular height is also great—126mm. This great height is due to two circumstances; first the basion (and the occipital condyles) project well below the general level of the base of his skull, giving the head a high and free poise on the neck. The distance of the basion from the upper border of the meatus is 23mm., 8mm. more than usual. The great height above the ears is mostly due to the vault rising steeply to a median ridge as in the roof of a house. From all of these measurements it will be seen that the head was above the average

English size. His brain capacity—1560cc. by direct measurement, 1570cc. by estimate of its chief diameters—is 80cc. above the modern average for Englishmen. As regards thickness the cranial walls show moderate measurements varying at different parts from 4 to 8mm.

When the skull is placed on the Frankfort plane, 99mm. of its length lies behind the ear, 94mm. in front; it was a well balanced head, rather more lying behind than in front of the ears. The neck was of moderate dimensions. Its width, measured between the bases of the mastoid processes, was 126mm., its thickness measured from the post-auricular plane to that of the inion was 78mm. The occipital cap is of moderate prominence, projecting 16mm. behind the inion when the skull is on the Frankfort plane. One notes when the skull is viewed from above that the parietal eminences are rather prominent, the biparietal width being 136mm. The width of the skull in front—the minimal width of the forehead—is 96mm.; the maximal and bistephanic width of the frontal bone 116mm.; the greatest width of the occipital bone 113mm. One notices, too, that the upper part of the occipital, behind the lambdoid suture, is elevated or raised while the lambda and upper part of the lambdoid suture lie in a trough paved with Wormian bones; this elevation of the supraoccipital is often seen in West-country Englishmen, both ancient and modern. It is also noticed that the bone on each side of the coronal suture is elevated or ridge-like, while behind this ridge is a depression—the post-coronal depression.

The skull and skeleton show all the characters associated with right-handedness. The left occipital region projects nearly 2mm. further back and is larger than that of the right side; the right half of the forehead projects further forwards than the left; if one measures diagonally from left occiput to right frontal the distance is 192mm., nearly 6mm. more than is given by the other diagonal.

The extreme length of the right humerus is 324mm.; the left, 321mm.; at the middle of its shaft the right humerus measures from extensor to flexor surface 22mm.; at right angles to this, 19mm.; the corresponding measurements on the left bone are 21mm., 18mm. The width of the lower ex-



tremitry of the right bone is 66mm., of the left 64mm. The right radius has an extreme length of 253mm., the left 1mm. less; at the midpoint of its shaft the right radius has a thickness of 13mm. and a width of 17mm.; the corresponding diameters of the left radius are 12mm., 15mm. Thus the bones of the right arm are stronger and slightly longer than those of the left. On the other hand, as is usual, the measurements of the left femur and tibia exceed those of the right limb-bones.

In the recognition of European races the features of the face are more helpful than those of the cranial encasing of the brain. The Ham Hill man shows facial features which may be seen frequently in young British athletes of all three nationalities. The supraorbital ridges are of more than moderate development, the extreme supraorbital width of the forehead being 109mm., exceeding the minimal frontal width (96mm.) by 13mm.; in modern Englishmen the usual excess is about 8mm. The width between the outer margins of the orbits 96mm.—rather a small measurement. The greatest width of the face (bizygomatic) is 136mm.—about 6mm. above the average measurement for modern Englishmen. The difference between this measurement and the maxillary width (taken between the lower end of the malomaxillary sutures) gives an indication of the relative lateral flattening of the cheeks. The maxillary width is 98mm., 38mm. less than the bizygomatic. Such a figure indicates a degree of flattening or sinking in of the cheeks; the cheeks in this case are similar to those of most athletic young Englishmen. Another width measurement of the face is valuable as a guide—the bigonial diameter, the width between the lower angles of the mandible. This gives the width or prominence of the jowls—in present instance 116mm.—nearly 16mm. more than in the modern face. Width of jowls is an indication of the extent to which the two masseter muscles of mastication are developed. These are the width measurements of the face and they are those of a well developed English face.

We come now to the length measurements of the face. The upper face, measured from the root of the nose or nasion to the alveolar point between the two upper middle incisors, is 70mm.

—an average amount ; the total length of the face, from nasion to lower border of chin is 121mm.—also an average measurement for the faces of Englishmen. Another length measurement is noteworthy—that taken from the floor of the nose to the lower border of the chin—it gives the anterior depth of upper jaw, teeth and chin—the subnasal length of face. In this case it is 70mm.—a moderate amount but 20mm. more than the nasal length. The depth of the chin at the symphysis is 35.5mm. ; its thickness from back to front, 14mm.—again average measurements. The point of the chin forms not a nodular projection but a moderately developed ledge or shelf of bone, 42mm. in width. It may be stated here that the width of the lower jaws, measured between the outer extremities of the articular condyles is 126mm.—also a moderate amount.

Perhaps the nose is as good a guide to race as any other feature of the face. In this man, the nasal height (or length) was 50mm.—somewhat below the average ; its width 23mm.—a narrow nose. The nasal spine is slightly developed ; there is no sharp ledge of bone formed across the nasal sill or threshold. The bridge of the nose was regularly moulded, being narrow but neither high nor ridged ; the length of the nasal bones along their line of junction measured 17mm. ; the width of the nasal bones at their narrowest measured 9mm. ; the ridge they formed had a projection or height of 3.5mm. The prominence or projection of the whole nose can be measured in this way. The skull is placed on the Frankfort plane and the mid-point of the ear passage is taken as a zero mark. In this skull the lateral margin of the orbit (its mid point) lies 74mm. in front of the mid-meatal point ; the tip of the nasal bones lies 96mm. in front of the same point ; the prominence of the nose is expressed by its projection in front of the side wall of the orbit—in this case 22mm.—showing a moderate prominence of nose. The sharpness—the degree to which the face is wedge-shaped—is expressed by the extent to which the root of the nose, or nasion, lies in front of the lateral orbital wall. In this case the nasion lies 15mm. in front of the lateral orbital walls ; these walls are 96mm. apart. We have here the exact data for estimating the sharpness of the upper face. In the Ham Hill man it is of a moderate and

usual English degree. The difference between the forward projection of glabella and nasion gives the degree of recession or depression or notching at the root of the nose ; in this case the glabella projects 5mm. in front of the nasion, indicating a moderate degree of notching. One other feature at the root of the nose is worthy of mention here—the width of the inter-orbital septum just above the lachrymal bones. Its width is 27mm.—an average amount ; the distance between the lachrymal ridges of the upper jaw—the width of the nose just below its root—is 22mm., the nose being relatively narrow between the eyes.

The dimensions of the orbits are less than moderate. The width of both right and left orbits is 38mm. ; the height of the right is 32mm., the left 31mm. These measurements may be regarded as usual ; they are neither primitive nor modern.

With the skull on the Frankfort plane and using the mid-meatal point we have a very exact means of expressing degrees of prognathism. The front teeth meet in an edge to edge bite—a primitive feature. The incisor point—where the anterior edges of the middle, upper and lower incisors meet—lies 97mm. in front of the mid-meatal point ; the point of the chin is 92mm., 5mm. further back ; the chin although well demarcated is yet, as measured on the Frankfort plane, and relatively to the incisor point, a receding chin, and this feature would have caught the eye of the onlooker when the man was alive. The upper jaw, just below the spine of the nose, is 93mm. in front of the meatal point and 4mm. behind the incisor point ; there is a subnasal projection of the teeth of 4mm. If, however, we take not the edge of the upper incisor crowns, but the alveolar point between their bases, we find that this point projects only 1mm. in front of the subnasal point ; the degree of subnasal prognathism is slight. The glabella is only 2mm. behind the upper alveolar point ; the face as a whole, notwithstanding the recession of the chin is orthognathous. There is also Flower's method of estimating prognathism. For this method one takes the distance from nasion to basion—in this skull, 103mm.—and compare it with the distance from the upper alveolar point to basion—in this case 99mm. In this method there is no prognathism—the

opposite ; there is 4mm. of retrognathism, and yet when the skull is placed on the Frankfort plane and viewed in profile there is a recognisable although slight degree of subnasal prognathism. Another way is to compare the radii from the mid-meatal point to the nasion and to the upper alveolar point. In this skull the distance to the nasion is 97mm., that to the upper alveolar point 107mm. Here we obtain a result running to the other extreme—one which gives an exaggerated expression of the degree of prognathism.

For many years I have been paying attention to the development of teeth and palate and have come to the conclusion that the only satisfactory way of stating the length of the palate is to measure the distance between the anterior margins of the upper incisors (or their alveoli, if the teeth have dropped out) to a point in the middle line, opposite the posterior borders of the last pair of molar teeth. In this case the palate length is 49mm.—51mm. is the mean for modern Englishmen ; the length, if measured to the hinder ends of the alveolar processes is 55mm. The width between the outer margins of the crowns of the second pair of molars is 61mm.—a palate of moderate width—and between the outer margins of the canines 39mm.—also only equal to the modern average. The length of the lower dental arcade is 51mm., the width at the second pair of molars, 64mm. ; the bicanine width 29mm. The total length of the lower molar series is 31mm., the length of the crowns decreasing from first to third molar.

All the teeth are present in the lower jaw ; the crown of the first left molar is partially destroyed by caries, which has also attacked the neighbouring premolar tooth. Caries has commenced on the adjacent margins of the same two teeth on the right side ; it would not be easy to find a modern man at the age of thirty-five with so restricted a distribution of caries. Although none of the upper teeth are affected from caries, three of them have been lost from disease—the first and second molars of the right side and the first molar on the left. The crowns of the front teeth are worn flat as the bite was edge to edge and the crowns of the molar teeth are worn down to one-third of their depth.

I have made many other observations on the cranial features

of this man but I have given enough to provide a key to his racial features. Above the left frontal eminence is the scar of an old wound—one which had bruised the bone. Also behind the ear, on each side is a persistence of the suture between the squamous and mastoid parts of the temporal bone.

The chief measurements of the limb-bones have been touched on save the back to front flattening in the upper shaft of the femur (platymeria) and the side to side flattening of the tibia (platycnemia). The meaning of such flattenings we have not yet discovered. They are uncommon in the modern population; perhaps made roads and streets and wearing of boots have to do with this change. The gluteal impression of the thigh-bone is a long rough area, 8mm. wide, ridged in its upper 30mm. and depressed in the rest of its extent. There is a flanging of the outer side of the femur at the side of the gluteal insertion. On the inner margin of the upper extremity a pilaster or flange of bone passes from the inner side of the shaft towards the base of the neck, giving width to the upper part of the shaft of the bone. The width, 10mm. below the small trochanter, is 41mm. (right bone) and the antero-posterior diameter 24mm.; the latter being 58.5% of the former—a high degree of platymeria. The tibia, at its nutrient foramen, has a front-to-back diameter of 36mm. (right bone) and a side-to-side diameter of 26mm.—the latter being 72.2% of the former, showing a moderate degree of platycnemia.

Of what race was this man? We can see him alive in England to-day and whether we meet him in the flesh or meet only his skull and skeleton we have an equal difficulty in assigning a racial label to him. My own belief is that he represents a type which came in with the later Celts and I look upon this type as essentially Nordic. When we meet this type with fair skin and hair we do not hesitate to assign it to the Nordic stock. But if dark-haired we incline to place him in the Mediterranean group, for I know of no set of cranial characters which differentiate the Nordic and Mediterranean types, although I suspect a properly conducted investigation would bring such characters to light. I think that the features of the nose, of the chin and the forehead of the Ham Hill man are distinctly Nordic. But Professor F. G. Parsons to whom

I showed the skull and who has a wide experience of British racial types is of opinion that the Ham Hill skull is near akin to the long barrow type, which is always set down as Mediterranean in origin. This short summary shows how far experts are from a final decision in the separation of the racial types of Europe; for my part I am inclined to think that the Nordic and Mediterranean stocks are near akin in an evolutionary sense, and are as yet, and likely to remain, imperfectly differentiated from each other in a physical sense. The outstanding fact is that a type which was in England before the Romans arrived and long before the Saxons came, still flourishes in our modern population.

VI. REPORT ON THE NON-MARINE MOLLUSCA

BY A. S. KENNARD, A.L.S., AND B. B. WOODWARD, F.L.S.

We were able to determine eleven species from the material obtained by Mr. H. St. George Gray from Roman deposits in the fosse of Ham Hill Camp, viz. :—

- Vitrea crystallina* (Müll.). One example.
Helicella cellaria (Müll.). Common.
 „ *nitidula* (Drap.). Two examples.
Goniodiscus rotundatus (Müll.). Five examples.
Xerophita itata (Linn.). One example.
Chilotrema lapicida (Linn.). One example.
Helix aspersa Müll. Common.
 „ *nemoralis* Linn. Common.
 „ *hortensis* Müll. Common.
Cochlicopa lubrica (Müll.). One example.
Pomatias elegans Müll. Common.

Band formulæ of *Helix nemoralis* :

1 2 3 4 5 ,	2 examples.	0 0 3 0 0,	4 examples.
(1 2 3 4 5),	10 „	0 0 0 0 0,	6 „

Band formulæ of *Helix hortensis* :

1 2 3 4 5 ,	7 examples.	0 0 0 0 0,	15 examples.
1 2 3 (4 5),	3 „	0 0 3 4 5,	1 example.
1 0 3 4 5,	2 „		

All the examples are well developed and exhibit no trace of adverse conditions and they are all common forms in the neighbourhood at the present time (see "The Mollusca of Somerset," E. W. Swanton, *Proc. Som. Arch. & Nat. Hist. Soc.*, vol. LVI for 1910, and issued separately). The abundance of *Pomatias elegans* would seem to show that there was a scrub growth in the fosse in early Roman times.

LIST OF DONATIONS TO THE HAM HILL EXCAVATION
FUND,

FROM APRIL, 1923, TO DECEMBER, 1925.

	£	s.	d.		£	s.	d.
H.R.H. The Prince of Wales (Duchy of Corn- wall)	10	0	0	Hebditch, H.	1	1	0
Society of Antiquaries of London (Two grants)	20	0	0	Hobhouse, Rt. Hon. Henry	2	10	6
Taunton Field Club	1	1	0	Horne, Rev. Father E. (collected by)	1	2	0
Northern Branch, S.A. & N.H. Society	0	10	0	Hoskyns, R. de H.	1	0	0
Badcock, Henry J.	1	0	0	Neild, Dr. Newman	0	5	0
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Bouverie, H.H.P. (the late)	4	10	0	Paynter, W. B. C.	1	1	0
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Bush, Rev. P. C.	0	5	0	Price, Rev. Dr. S. J. M.	5	0	0
Clark, John B.	1	0	0	Pring, Rev. Preb. D. J.	1	1	0
Clark, Roger	2	10	0	Reeder, Rev. Preb. W. T.	1	0	0
Clark, W. S. (the late)	2	2	0	Rogers, Dr. A. W.	1	0	0
Clive, Capt. E. A. B.	1	1	0	Salaman, Clement	1	0	0
Clothier, S. T.	0	10	0	Smith, Reginald A.	2	0	0
Cornish, A. V.	0	5	0	Sommerville, R.G. (the late)	1	0	0
Cowan, T. W.	1	0	0	Stewart, Dr. W. (the late)	0	10	0
Curzon of Kedleston, Mar- quis (the late)	5	0	0	Symonds, Henry	3	3	0
Dawkins, Prof. Sir W. Boyd	1	1	0	Tapp, Dr. W. M.	1	11	6
Downes, Dr. H.	1	0	0	Tite, Charles	1	1	0
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Fryer, Dr. A. C.	2	0	0	Troyte-Bullock, Miss E. M.	5	0	0
Gardner, Dr. Eric	5	0	0	Vassall, Henry (the late)	5	5	0
Garnett, W.	1	1	0	Walter, Dr. R. H. (the late)	5	0	0
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Goodland, Roger	0	6	0	Willock, Dr. E. H.	1	1	0
Gray, Maj.-General W. du G.	0	10	0	Wills, Sir George A.	2	2	0
Hayward, A. R.	1	1	0	Box Collections	1	3	3
				Bank Interest	1	5	1
					£129	3	10

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