The Excavation of Backwell Cave, Somerset

Section I

GENERAL DESCRIPTION

ACKNOWLEDGEMENTS

On behalf of the Society the writer wishes to thank the following gentlemen: Mr. Joseph Coles, of West Town Quarries, for bringing the cave to the Society's notice, for permission to excavate the cave, and for the provision of labour and other facilities in the course of the excavations; Prof. E. Fawcett, for the report on the human bones and for his assistance in the classification of the numerous bone fragments too small to describe separately; Prof. M. Skene, for the identification of the charcoals; Dr. Wilfrid Jackson, for the report on the animal remains; the authorities of the British Museum for their help in dating the pottery and other artifacts; the Colston Research Society for its grant to the Society, from which grant the labour charges have been met.

SITE

Map reference: Ordnance Survey, 6 inches to the mile map, Somerset Sheet V S.E.

Entrance to Cave: Latitude 51°, 24′, 30·1″ N.;
Longitude 2°, 43′, 47·0″ W.

Cave Catalogue Number, M6.

The cave is situated approximately 300 feet above sea level, in the Parish of Backwell. It is best approached by turning left off the main Bristol–Weston-super-Mare road in the village of West Town and thence up to the entrance to the quarries, where a sharp left turn soon brings one to a trackway coming down from a combe on the right. The trackway up this combe should be followed for about 300 yards, when the cave can be seen above the track, which here goes south-east, on the north-east side some fifteen feet above the level of the path. The local name for the combe is Badger's Combe, as there used to be a number of badgers there. It is not named on the map, but lies immediately west of Cheston Combe. On the opposite side of the combe are the large quarries known as the West Town Quarries. The cave itself, according to one local inhabitant, is known as the Hermit's Cave, but this is probably a confusion with the cave of that name in Brockley Combe nearby.

Other local inhabitants insisted that the cave had no name, as it was not known till 1936.

DISCOVERY

The cave was discovered by Mr. Coles, the owner of the land and one of the quarries. When found, the cave consisted of a little recess in the limestone (Fig. 23); in 1936 a man was employed by

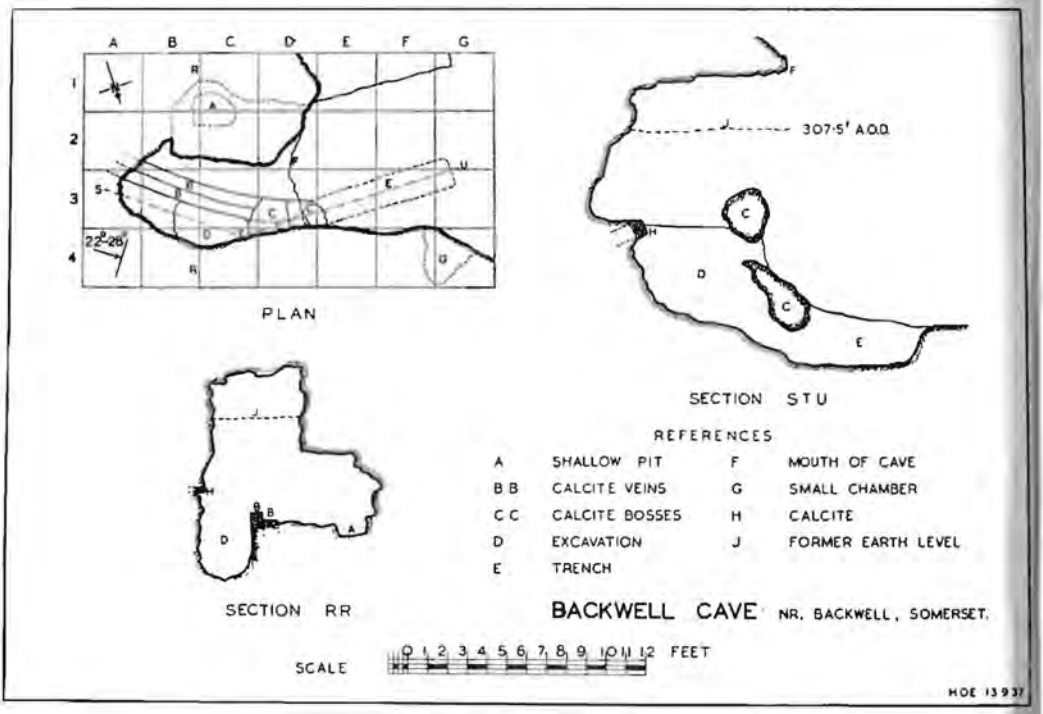

Fig. 23

the owner to clear out the cave. A large mass of material was removed, up to 8 feet in depth in places outside the cave, and gradually tailing away to the original ground level some 10 to 15 feet away from the cave mouth. The slope of the material was very steep, and it consisted of a number of stones of varying size mixed with a red clayish earth, which was very sticky when wet. At a later date the man employed was questioned and stated that there was no suspicion that the stones removed formed part of a wall, however rough, built across the cave mouth to close it; on the contrary, he maintained that the material did not differ from the usual material that one finds in such situations in this area. As

the man had been employed on similar work in connection with the quarry for a number of years, it may reasonably be assumed that his observations are correct.

The top deposits sloped into the cave and very nearly filled it entirely (J in Fig. 23), and even when the cave was completely cleared out its floor area was found to be indeed very small, as the plan shows (Fig. 23).

At a depth subsequently found to be about 4 feet from the surface and extending to the rock floor of the cave at 9 inches to about a foot lower, large numbers of human and other bones were encountered by the workman, but it was not until most of the deposit had been either thrown out of the cave or been thoroughly disturbed that information as to the occurrence of bones reached Mr. Coles. He at once ordered the man to stop working, collected what bones he could see, and informed the Society.

DESCRIPTION OF THE CAVE (*Fig. 23, Plan and Sections*)

The cave is a small one formed along the line of a wide calcite or spar vein in the limestone (BB in Fig. 23). This vein is over 2 feet wide in parts and at the site of the cave is met by other veins of varying widths and at varying angles (e.g., H in Fig. 23). This complex formed a local weak spot in the limestone and a small stream flowing down the main vein from above appears to have excavated the rest of the cave or shelter.

The cave mouth faces approximately west, and the north wall is continued outside the cave in the form of a low cliff which soon turns and follows the general line of the combe; it is this north side and a portion of the cave mouth that receives what afternoon sun there is that reaches the cave. The drainage of the site is also such that the north side is the driest portion of the cave.

On the north side and also a little above the level of the bone deposit is a slight recess divided into two by a double calcite vein (H in Fig. 23). The two parts of the vein are separated from each other by about 4 inches of limestone. The vein ran approximately horizontally from west to east, but sloped up slightly from north to south. When first seen by the Society the vein was in a very rotten condition and had several holes through it, some of them certainly not recent. The overhang of the vein covered a pit (Fig. 23 D), filled with earth, but rather loosely, and this earth contained many human bones. This pit was temporarily dubbed the "Grave Pit."

On the south side another small recess was present, but this was much lower than the one on the north.

Section II

EXCAVATIONS BY THE SOCIETY (SEPTEMBER, 1937)

The excavations were carried out with the assistance of two paid labourers, under close supervision of the writer, and can be divided under three heads :—

1. The Old Spoil Heap (O.S.H.).
2. The Disturbed Bone Deposit (D.B.D.).
3. Deposits not disturbed by the quarryman.

1. The spoil thrown out by the quarryman had been put into one main dump and several subsidiary ones. These were gone over and the material sieved. The bone deposit portions could always be distinguished from the rest by their slightly darker colour and from their positions in the piles ; it was known that only one bone level (see below) was found in the cave, and that at the base of the excavations. Many human bones, chiefly fragmentary, except the smaller ones, were found together with a smaller quantity of animal bones. Potsherds were found representing several pots, one at least being wheel-made and of Roman date. There were also two flint implements, with two spindle whorls and a bone fork or double prong (Plate XV, 1 and 2).

2. This was material still in the cave. A close examination of the cave walls and floor for traces of deposits left behind gave valuable results. From examinations of little cracks and crannies it gradually became quite evident that there had been only one bone deposit in the cave and that commenced about 4 feet from the surface and extended for about 9 inches down to the rock floor (which was very uneven) of the cave. In these remnants of deposits were fragments of animal and human bones and minute traces of charcoal. It was also quite clear that the deposit had extended all over the floor of the cave up to but not outside the line of the cave mouth except possibly for a very short distance on the south side. How far out the deposit originally extended it is impossible to say, but on the evidence available it is not likely that it extended more than 3 feet. (See below, under " Discussion.")

3. These consist of four areas. Firstly, the pit near the mouth on the north side. The so-called " Grave Pit " (D in Fig. 23). The yield of human bones from this small area and indeed from the whole of the cave was far greater than could have been placed there

PLATE XIV

BACKWELL CAVE

a View of cave as it was at commencement of excavations by Society, Sept., 1937. The calcite bosses (C,C, in FIG. 23) can be seen in the centre foreground and left middle distance. The opening of one of the badger holes can also be seen under the latter boss.

b The top of the badger hole coming up under the calcite veins (H in FIG. 23).

Facing page 66.

PLATE XV

BACKWELL CAVE

1. Bone Prong. 2. Pottery Spindle Whorl. 3. Lias Spindle Whorl.

at one time immediately after the death of the persons represented and before the flesh had decayed. As work proceeded it became clear that the pit was really a badger hole communicating by means of holes placed vertically above one another with a small rift between the main calcite vein and the rock wall outside the cave (see Fig. 23 E). The badger hole could only be traced for a short distance outside the cave but yielded a complete badger skull together with the lower jaw and a few other animal bones, including some from a small alcove (G in Fig. 23).

In the north-east corner of the cave some of the bone deposit was found adhering to the wall of the cave and also filling a small depression in the floor of the cave. The depression was irregular in outline, being about 12 by 9 inches (Area A 3 in Fig. 23). The soft nature of the cave floor made it impossible to say for certain whether this pit was natural or artificial, but the balance of the evidence of the site is that it was natural. From this area were recovered the following human bones:—portions of left parietal of skull, a small portion of a scapula, a thoracic vertebra, and a phalanx, a portion of the shaft of a right femur with the end portions broken away in ancient times and lying at about 45° from the horizontal with the lower end downwards. In addition, a minute sherd of pottery of the prehistoric type (see p. 64) and traces of charcoal.

On the south side another small pit yielded one or two small human bones and traces of charcoal (Area C 3 in Fig. 23). The pit was certainly natural. On the south side and under the south alcove were found several small human bones in the cracks between stones filling another small pit (A in Fig. 23). This was also probably natural rather than artificial. Outside the cave, on the south side only, one or two bones were recovered at a depth up to 6 feet from the original surface. These bones had been redeposited by the quarryman, and their original position and depth could not be determined.

Section III

THE FINDS[1]

Human Bones

Two fairly complete skulls (M6.11, M6.11) and fragments of
1 2
a number of others, some of which show obvious signs of distortion by earth pressure. Portions of mandibles representing not less than eighteen persons and including at least three children. Several complete, or more or less complete, long bones, numerous fragments of long bones, many smaller bones of the hands and feet. Most of the fractures of the long bones are ancient fractures and only a few are recent, and of these the other fragments have been generally recovered. Nevertheless, many bones and parts of bones which should have been present are missing. Possibly some were removed as " souvenirs " by visitors without the knowledge of the owner of the cave. The majority of every class of bone recovered belong to the left side; those of the right side being much fewer. Some of the bones appear to have been gnawed, but this appearance may be due to the effects of plant roots upon the surface of the bones. One or two bones show ancient cut marks. Skull M6.11 shows a
2
large healed depressed fracture in left fronto-parietal area. The depression is roughly boat-shaped and looks as if it had been inflicted with an axe rather than with a sword. As the fracture had completely healed, the individual must have survived this very severe head and brain injury.

Animal Bones

These, except the smaller ones, are generally much more fragmentary than even the human bones. The total number recovered is also small in comparison with the large number of human bones. There is nothing unusual about them (see Dr. Jackson's report below). Only a very few fragments show any marked evidence of having been through the fire.

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[1] These include those handed over to the Society by Mr. Coles.

Molluscan Remains

All from the old spoil heap, but almost certainly from the bone layer.

Charcoal

A few samples from the old spoil heap, but almost certainly from the bone layer. The fragments are so few and poor that it was only possible to identify ash with any degree of certainty.

Artifacts (Plate XV)

Bone.—A single bone double-pointed prong or fork made from the metatarsal or carpal of a sheep or goat. (Plate XV, 1.) This is rather an unusual find, but can be duplicated on a larger

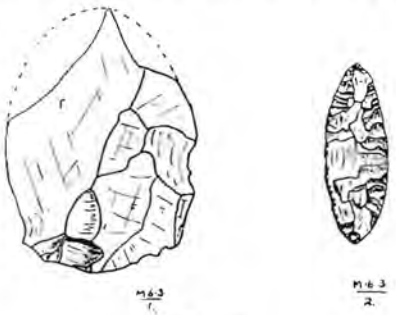

Fig. 24

scale by one from Rowberrow Cavern.[1] The present specimen was obviously meant to be hafted, like the Rowberrow one, through the end, but there is no provision for a retaining rivet or pin as there is no transverse hole through the base of the implement. It does not seem that it served as a fork in eating food, for it is highly unlikely that such refinements of table manners were then in force. It may have been used in cooking, but if so, it was not in connection with roasting, since it would at some time have become partly charred; it may have been used in weaving, but is certainly not a weaving comb.

Stone.—A fine leaf-shaped arrow-head, patinated a dense white and scale-flaked all over, found at a depth of 8 feet in the badger hole. It must be regarded as a derived fossil, as it is so obviously of a type in use considerably prior to the age (early Iron Age to Romano-British) of the bone deposit (Fig. 24, 1).

[1] *Proceedings of Bristol University Spelæological Society*, Vol. 2, p. 196, and Fig. 2 (6) of La Tène date.

A rough broken flint knife (?) from the old spoil heap. Dense white patina. It might conceivably belong to the same period as the bone-deposit (Fig. 24, 2).

A small conical spindle whorl of liassic limestone from the old spoil heap. The specimen has been turned on the lathe and may be assigned to the Roman period (Plate XV, 3).

Pottery.—A flat disc-shaped spindle whorl made from pottery. The pottery has the texture of Roman pottery and the whorl, which came from the old spoil heap, may be regarded as of that period. (Plate XV, 2.)

Sherd showing lip form of a vessel of black ware dated as Roman, probably not later than first century A.D. The vessel is wheel-made. A few other sherds representing possibly two or three other vessels of similar ware and a few others that are similar to the native Iron Age " B " pottery of the district, probably of the first century B.C., and possibly a little earlier, were also found.

Section IV

DISCUSSION

The first point to determine is the origin of the deposit; that is to say, did the bone deposit arise as the result of the use of the cave as a dwelling site or as a burial place, or as a combination of both?

The available evidence clearly indicates that it was not a living site, for even a single person or couple of persons would have found the cave very small as a permanent residence, and further, the scarcity of pottery and other artifacts suggests that it was not so used. Again, there was no occupation level inside or outside the cave; the quantity of animal bones recovered is decidedly small, especially if this quantity is compared with the large quantity of human bones recovered, and there is an almost complete absence of charcoal, except for small specks. All these points make it quite clear that we are not dealing with an occupation cave.

The material from the bone level both in the spoil heaps and in the cracks and crannies of the cave walls was darker in colour than the deposits above and had a somewhat greasy feel; it is probable that it represents débris from hut floors, and this would account for the small fragments of charcoal and also the fragmentary nature of the animal bones, particularly of the domestic species.

The large number of human bones recovered from so small a cave and representing so many individuals, not less than eighteen, makes it clear that the cave was a burial place. The actual total was probably larger, but is not likely, on the evidence found, to have exceeded forty persons, while thirty is probably about correct. The only datable objects are the two spindle whorls and the few sherds of pottery. The former are of Roman date. The potsherds, though very few, are obviously of two main types: firstly, Roman wheel-made ware, which need not be later than the first century A.D., or possibly fifty years later, and represent a local product; secondly, sherds which obviously belong to the prehistoric as opposed to Roman groups of pottery. These sherds are, however, so few that it is only possible to say that they belong probably to the period of the first century B.C., with a possible extension to B.C. 150.

The fragmentary nature of the bones, the predominance of those of the left side and the absence of many bones, have still to be

explained. If the place was merely an ossuary and the skeletons were placed there after the flesh had decayed, then disturbance by animals and earth pressure effects, coupled with the destructive effects produced by vegetation on the bones, would account for the fragmentary nature of the bones and for the absence of others; but it would not account for the predominance of the bones of the left side. If, on the other hand, the actual bodies were buried on the left side and then this was followed by disturbance by animals, or, for that matter, by man himself, it would be the bones of the right side that would be mostly involved, and that, it is considered, is the explanation of the predominance of bones of the left side. The actual surface appearance of some of the skull bones supports this contention. If all the burials were not made at the same time, then every time more burials were added some disturbance, such as that caused by walking over the bones, must have occurred, and hence the fragmentary nature of the bones. It is possible that the stones found partly blocking the cave mouth may have formed part of a pile deliberately placed to seal the burial chamber; if so, then some would have had to be removed and replaced every time additional burials were made. The small area occupied by the bones and the juxtaposition of bones, though it is admitted that there was virtually no part of the deposit that had not been disturbed, suggests that the bodies were buried in the contracted position, or, alternatively, that the bodies had been dismembered before placing them in the cave, which is not so likely.

There is nothing to indicate the dates of burials of the individual bodies, and it is possible that one group of interments was made at the beginning of the period indicated by the pottery and a second group at the end of the period; it is more likely, however, that the burials were made throughout the period of two to three hundred years, as there were no indications discernible in the remnants of the deposit *in situ* of any division into two layers, which would be the case if the first postulate is accepted.

At the same time, if the site represents the normal burial place of a group of local inhabitants over a period of two to three hundred years, then the number of skeletons represented seems too small for even a small community; it may be argued that only important persons were buried here, but at once there is the possible contradiction that the bones comprise young, middle-aged, and old adults of both sexes and also at least three children. Possibly, then, the deposit is not the normal burial place of the dead but the burial place associated with customs and rituals of which we know nothing.

That burrowing animals have played a part in the destruction of the bones is clear from badger holes discovered running actually through the bone deposit. Earth pressure has played a part, chiefly in distorting the bones. Gradual disintegration of the bones by the removal of their mineral contents by plant roots can be clearly demonstrated on the number of the bones which show varying stages of this process.

A certain number of bones were probably entirely destroyed by the quarrymen and some possibly removed as souvenirs, and this would account for some of the missing ones.

Section V

CONCLUSIONS

1. Backwell Cave was a burial cave used by the native British population for a period probably within the limits 100 B.C. to 100 A.D., with an extension either way for another fifty years.

2. As such a burial cave the site is unique in the area.

3. The nature of the burials is uncertain, but the balance of what evidence there is would seem to point to burials associated with unknown customs and rites. For reasons already stated, the site does not appear to have been the normal burial place of the inhabitants of the area. The cave is not an ossuary, for the burials were made as bodies by inhumation with the bodies lying on the left side and possibly in the flexed position.

4. The burials were subsequently disturbed by: (*a*) The introduction of additional burials to those first made; (*b*) Burrowing animals, such as the badger; (*c*) Plant roots; and (*d*) The quarrying of the site.

5. There is no evidence for cannibalistic practices on the actual bones from this site.

6. The bones of food animals were presumably introduced as bones and not as joints of meat or as whole animals, and they, together with the charcoal, the earth, and the artifacts, were probably introduced into the cave in the form of material collected from living sites. Parallels to this custom are numerous in barrow burials.

E. K. TRATMAN

Backwell Cave—Appendix

Section 1

THE ANIMAL REMAINS

The following are from the old spoil heap and disturbed bone deposit :—

Sheep.—Many bones (slender variety) and a few lower jaws with teeth ; also loose teeth, and the distal end of a tibia of a larger form.

Ox.—Many bones, mostly imperfect ; also a few teeth (small variety).

Red Deer.—A few toe and heel bones.

Roebuck.—a pair of lower jaws (imperfect) with teeth ; also toe bones.

Pig.—Two foot-bones and fragment of jaw.

Horse.—Two upper molars.

Dog.—Fragmentary limb-bones, lower jaw with teeth, and foot-bones.

Badger.—Many bones (imperfect), lower jaw, etc.

Fox.—Lower jaw with teeth ; also upper jaw with teeth, and a few bones.

Rabbit.—A few stray bones.

Hare.—Fragment of humerus.

Cat.—Imperfect lower jaw and bone fragment.

Birds.—Various bones (four are small fowl ; others are smaller birds).

Human.—Several fragmentary limb-bones (young).

Snail-shells.—Helix aspersa (5) ; *Helix nemoralis* (22) ; *Hygromia striolata* (1) ; and *Pyramidula rotundata* (2).

Niche on north side. Undisturbed. Outside cave 5 feet from original surface, near badger hole (G in Fig. 23) :—

Badger.—Fragmentary skull and lower jaws.

Red Deer.—Upper molar.

"Grave-pit" Rift, about 2 feet below level of human bones, all loose material (D in Fig. 23, lower portion) :—

Birds. Several bones of small species.

Frog.—Many bones.

Badger.—Two toe-bones.

Mole.—One ulna.

There is nothing remarkable in the collection. The bones might very well be Romano-British in date.

J. WILFRID JACKSON

Section II

THE HUMAN JAWS AND TEETH

A considerable number of jaw fragments, chiefly of the lower jaw or mandible, are amongst the bones recovered from this cave. The majority of the mandibular fragments belong to the left side, which is in keeping with a similar predominance in the other bones of the body.

The minimum number of individuals represented by the fragments recovered is eighteen, and the maximum twenty-seven, though, of course, this is not necessarily the real maximum of the burials originally placed in the cave. Three of the individuals were children aged between six and eight years at the time of death.[1]

In their general size, shape, and muscle markings, the jaws conform to modern European standards, and in that respect show only the range of variation that one would meet with at the present time.

In a number of specimens the teeth are partly or wholly absent, but an examination of these shows that in nearly every case the loss occurred after the death of the individual. This loss of teeth post mortem may be associated in part with chronic parodontal disease (pyorrhœa), which leads to loss of bony alveolar structure round the teeth, which can then, in the dried specimen, easily fall out.

Some of the jaws and teeth do show some features of special interest and they will be referred to according to their catalogue number.

M6.11.—Mandible, left. The attrition has reached stage 3 on $\frac{107}{}$ the left lower first molar. The third left molar is reduced in size and the 5th cusp[2] is absent in all three molars but may have been worn off on the first. The chin is prominent and square. Tartar of the subgingival type is adherent to the necks of the three molars present, especially interstitially.

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[1] Assuming that present-day rates of calcification and eruption can be applied to this prehistoric material.

[2] For discussion on method of estimating size of 5th cusp on human lower molars, see Tratman, *Proceedings of Bristol University Spelæological Society*, 1935, Vol. 4, No. 3, p. 236.

M6.11.—Mandible, left. The first molar had its pulp chamber
108 exposed by attrition and abscess formation and considerable bone destruction occurred. The roots show considerable exostosis, while the tooth is still in the bone. The third molar does not appear to have been present, and the X-ray appearance confirms this.

M6.11.—Mandible, right. The empty tooth sockets show that
116 the third molar was of small size compared to the first and second.

M6.11.—Mandible, right. Angle region. The appearance is
117 suggestive of an old injury in process of healing, such as a fracture or a septic process with bone destruction. The X-ray appearance tends to confirm this. The specimen may belong to M6.11 (see below).

157

M6.11.—Mandible, left. Only the three molars remain, and of
127 these the third has a large occlusal carious cavity and has tartar of the salivary type adherent. A small occlusal carious cavity is also present in the second molar. The first molar shows 2·5 stage of wear. Fifth cusps are present on all three teeth, but their size cannot be assessed owing to the attrition present.

M6.11.—Mandible, left side. The first and second molars show
128 quite good 5th cusps of size 0·9 and 0·2 respectively of normal.

M6.11.—Mandible, left. Traces of tartar of subgingival type
129 present on all remaining teeth. The first molar shows stage 3 of wear.

M6.11.—Mandible, left. (See also M6.11 above.) A fragment
157 117
from 1st premolar to 3rd molar area. The first molar remains and shows stage 3·5 of wear. There is an old slightly oblique fracture running from interspace of /7 and /8 to below anterior root of second molar. The parts are in bony union in a fairly good position. A second fracture is present anterior to the first molar where the outer plate has been crushed in against the inner one.

M6.11.—Mandible, left. Third molar was never present on
158 surface, appearance subsequently checked by X rays. /125 were lost prior to death of the individual. The first molar shows stage 3·0 of wear, and there is a slight amount of tartar of subgingival type adherent to the buccal surfaces of the teeth.

M6.11.—Mandible, left. This has tartar of the subgingival type
162 adherent to the /68, which alone remain in the fragments, and this is accompanied by alveolar resorption. The first molar shows stage 3·0 of wear.

M6.11.—Mandible, left. The fragment shows great wearing of
163 the teeth, even the second molar exhibiting 3·5 stage of wear. There is much tartar of the subgingival type adherent to the lingual aspect of the third molar.

M6.11.—Mandible, left, fragment of. Child, aged about six
109 years, with /E6 present, other teeth having been lost post mortem. 2/23457 are present in their crypts, there is no sign of calcification of /8, and the crypt for 3/ is unduly large and may represent a dentigerous cyst, and this is supported by the X-ray appearance.

M6.11.—Mandible in mental region of child aged about 8 years.
146 The /4 in its crypt exhibits horizontal hypoplasia of the enamel of the crown.

M6.11.—Maxilla, left. The remarks on M6.11 apply.
121 126

M6.11.—Maxilla, right. Fragment shows no subdivision of
122 antrum and a sharp border to the lower edge of the anterior nares. The sockets of 87/ show that both were of the triangular form, and 8/ was much reduced. 4/ had been broken during life, but two minute root fragments still mark its position.

M6.11.—Maxilla, right. The fragment shows a large antrum
125 partially subdivided by a septum of bone into two parts. The lower border of the anterior nares is sharp. The 76/ have been fractured during life. Tartar of the subgingival type is present in quantity, and there is considerable resorption of free edge of alveolus, especially of outer plate.

M6.11.—Maxilla, left. The fragment shows the antrum to have
126 been very large, with well marked septa dividing, possibly not completely, it into three parts. The lower border of the anterior nares is of the " dug out " or orygmokraspedote type. There is tartar of the subgingival type adherent to the necks of the teeth.

M6.11.—Tooth. Lower canine with tartar present buccally and
132 roughening of enamel.

M6.11.—Tooth. Much worn lower premolar with cervico-
135 marginal caries of food, stagnation type, and slight apical exostosis.

M6.11.—Tooth. /7 with fifth cusp absent and a little tartar
137 of subgingival type present.

M6.11.—Tooth. /2 crown only of child aged about six years.
142 Horizontal hypoplasia of enamel present in the gingival third of crown.

M6.11.—Tooth. /7 or /8. Marked triangular type of crown.
144

M6.11.—Tooth. /7 or /8. Marked triangular type of crown
145 with cervico-marginal caries on buccal aspect and much tartar of the salivary type chiefly on this surface.

CONCLUSIONS

1. There is nothing to differentiate these specimens morphologically from those of present-day Englishmen : even such deformities as the triangular form of the upper molars, absence of third molars, and reduction in size of molars with loss of the 5th cusp in the case of the lowers are present in this series as in modern man.

2. Caries occurs but rarely and is either occlusal caries or the food-stagnation type associated with advancing parodontal disease. Interstitial caries at the contact points was not found.

3. Tartar of both types occurred, but chiefly the subgingival type, and there is evidence for a fairly high incidence of parodontal disease, especially amongst the older persons represented in the collection.

4. The occurrence of horizontal hypoplasia of the enamel in unerupted teeth is indicative of dietary deficiency during calcification.

5. There is no evidence of crowding in the jaws beyond a very slight degree of imbrication found occasionally in the lower incisor region.

F. K. TRATMAN