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The human skeletal remains from Dover, Buckland

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GENERAL REMARKS

Preservation

The majority of the skeletal material from this site was very severely eroded: the only fairly complete skulls were numbers 9,30,62,135 and 136, and some others were represented only by crumbling, almost unidentifiable fragments. This erosion, presumably due to alkaline solution in the chalky matrix, obscured the surface features of the skull, and in many cases the dental enamel was also too eroded to show surface morphology. A result of pseudo-caries due to post-mortem erosion, especially at the dentine-enamel junction on the outer surface of the jaws, was that only the largest caries cavities could be diagnosed: hence the incidence of caries (see Table VI) is probably too low. Enamel hypoplasia and cribra orbitalia, osteitis and minor healed wounds would have been disguised by the same cause. The teeth of several individuals, notably numbers 91 and 92, had been deeply stained a brown colour, and reduced to a fragile shell of enamel through preferential dissolution of the dentine. Areas such as teeth roots, where dentine had at one time been covered by bone, were better preserved than areas which had not; this explains the good preservation of unerupted juvenile teeth, and is probably the reason why they show a high incidence of Carabelli's cusp, which cannot be detected in the adult teeth, exposed as they were to attrition and erosion. Post-cranial bones too suffered very severely from this alkaline erosion, so that even the few bones measured probably gave slightly smaller measurements than were correct.

Indications of grave goods

Green metal stains

Five skulls showed green stains due to contact with a copper or bronze object, three of these being stained on the mandible. In number 1 the stain was to the left of the symphysis, in number 92 to the right, both on the lower margin of the jaw. In number 30 the stain was on the inner surface of the mandible on both sides, though deeper on the left. Number 62 had green staining on the root of an isolated third molar, probably an upper one; number 28 had green stains on the left temporal and the lower forepart of the parietal. Three of these stained skulls were female, and the other two were probably female. Bronze stains were present on the post-cranial skeleton in ten cases, four of which, on the arm just below the elbow, were probably due to bracelets. These were: 1, a female, the top of whose left ulna was stained; 15, of indeterminate sex, with staining at the top of the right radius and ulna. 91, of unknown sex, both left forearm bones stained; and 98, probably a male, with staining on the left ulna. Number 14, a female, apparently wore a ring

on her right hand, probably on the middle phalanx of the third finger, and a brooch slightly to the right of the manubrium sterni. A similarly positioned stain on number 100 also indicates the wearing of a brooch: the left leg bones of number 53, a female, were deeply stained just below the knee. Number 21, a child, showed staining on the inner side of the sacrum and the right ilium, perhaps from a belt ornament, while there was a similar stain on number 148, an adult male, and another adult male, number 135, had a green stain on the outer side of the left innominate, above the acetabulum.

Iron and red stains

Flakes of iron were found in Grave 3 "Bones under others" and Grave 5 "Bones loose in top fill." Number 22 showed iron stains on the head of the right femur, and there was a trace of similar staining on number 37, near lambda. Number 56, a male, had iron stains all up the right forearm, and there were stains also on the right fore-arm of a female, number 81.

Possible artifacts

Among loose teeth of number 55, a juvenile, was found a rough stone bead (possibly a naturally perforated pebble). It was roughly cylindrical, with a pitted surface, 10 mm. broad by 11 mm. long, the hole being about 3 mm. in diameter throughout and circular in section.

Several pieces of brokem black flint nodule were found among the numbered graves, but none showed any signs of working. A flint "arm" found among the unnumbered fragments on the spoilheap had been slightly facetted on the surface of the natural patina by rubbing on a hard, flat surface. This looked suspiciously fresh and was probably the work of some modern "doodler."

Animal bone

Part of the metatarsal of a sheep or goat was found in Grave 19.

MORPHOLOGY

Cranial Morphology

Two cases of tori mandibulares were observed (no.'s 27 and 81). No cases of tori maxillares were seen, but few palates were sufficiently complete to show this feature. The incidence of persistent metopic suture was 8.2% (sample size 61). Wormian bones along the lambdoid suture were visible in one skull (no.39), but as with the other discontinuous traits of the skull, the very poor preservation of the bones probably prevented identification in a number of cases.

Dental Morphology

No striking dental anomalies were found. No supernumaries, retained deciduous teeth, or missing lateral incisors were observed; molarised premolars and double-rooted canines were looked for and not found. Apparent lack of third molars was frequent, although not confirmed by radiography. One case of a deeply embedded, horizontally impacted third molar was seen (no.61). The

A resume of osteometric measurements and stature estimates is given in tables 3 to 5. A more detailed analysis of the individual measurements, in comparison with other Saxon data, is being undertaken but will not be completed for some time yet. There is no evidence to suggest that the Dover Saxon group was especially distinctive.

upper molars frequently showed reduction to the triangular, 3-cusped form (see Table VII), and there were also 2 third molars of much wrinkled pattern. In addition, 13 M1's showed some indication of Carabelli's cusp in slight or moderate development, and 4 juveniles also showed it on Pm2. No paramolar or other extra cusps were seen, with the exception of a well-marked lingual tubercle on the canine of no.57, and a cusp centrally placed on the lingual surface of the canine of no.124. The lingual surface of upper incisors varied in form from featureless to a very slight shovel shape. A high proportion of upper lateral incisors showed lateral grooves on either mesial or distal surfaces, and no.55 was peculiar in that both teeth showed the character, one on the mesial and one on the distal surface. No.103 was symmetrical for this feature, and nine other skulls showed it on one side only. Of 34 individuals, 11 were affected. Absence of the lower third molars appeared present in 9 individuals out of 46 examined, while two cases were certainly unilateral and three others, imperfect specimens, probably so.

PATHOLOGY.

Oral pathology

Of sixty adults whose teeth could be examined, seventeen had one or more carious teeth; in addition, no.42 was practically edentulous, and no.'s 1 and 61 were partially edentulous. No.61 showed an unusually deeply embedded horizontally impacted left lower third molar; there was an irregular cementum deposit on the root of the second molar where the occlusal surface of the impacted tooth pressed against it. The mandible was incomplete, so it was not possible to determine whether the condition was bilateral. Of the juveniles, no.117 (aged about 8 years) showed an interproximal caries of a deciduous molar which had not advanced very far; no.55, (aged about 5 years) showed symmetrical caries cavities on the dorsal neck region of both lower deciduous first molars.

Cranial pathology

'Osteophytes' were noted on the inner table of the frontal bone in three skulls. They were small ~~and spicular~~ projections and distributed on either side of the midline. No.36 had several, no.10 had less and smaller ones, while no.1 showed the earliest stage in this development. All three had missing and decayed teeth, and no.1 had also osteo-arthritis of the cervical vertebrae, so the ~~osteophytes are~~ hyperostosis is probably a sign of late middle-age. No.42 had a small, dense, smooth osteophyte on the inner table of the skull just inside the temporo-mandibular joint area, but this skull was fragmentary and it was not possible to determine whether other ~~osteophytes~~ such structures were present. No.44 showed arthritic deformation of the left mandibular condyle, in conjunction with decayed teeth and considerable post-cranial osteo-arthritis. No.37 showed a small circular depression penetrating to the diploe in the hinder part of the right parietal. The surface is eroded by root marks, and the feature may be due to post-mortem erosion or to an old injury in life. There is no sign of trauma on the inner table below it.

← Post-cranial pathology

Osteo-arthritis

Bone deformity resulting from arthritis has been noted in as much detail as the remains permit. Owing to bone fragmentation and erosion, a detailed account of the frequency of osteo-arthritis is not possible. However, it would seem worthwhile indicating which skeletons showed evidence of the disease, in order to give a general impression of its commonness. The individuals affected were:-

1, a female skeleton, showing O.A. changes on lumbar vertebrae, hip and tarsals:

25, a female skeleton, with slight changes on the inter-vertebral disc area:

29, a female skeleton, with slight changes on the inter-vertebral disc area:

33, a male skeleton, displaying O.A. changes at elbow and wrist, and on tarsals; there is also present an affected scapula, which is possibly from a second individual:

44, a female skeleton, showing gross arthritic changes in cervical and lumbar vertebrae, and also of the sacrum and the glenoid cavity:

49, a skeleton of uncertain sex, with arthritic changes at the left elbow:

61, a female skeleton, showing O.A. changes of the cervical vertebrae:

65, a male skeleton, showing O.A. changes of the cervical and lumbar vertebrae:

87, a female skeleton, showing some vertebral O.A.:

94A, a male skeleton, displaying O.A. of the lumbar vertebrae:

94B, probably the same individual as 94A, showing slight O.A. ~~disc~~ changes in the disc area:

96A, which showed arthritic changes in the cervical vertebrae;

99, a female skeleton with slight arthritic changes of thoracic vertebrae;

120, a male skeleton showing arthritis of the lumbar vertebrae and of the right scaphoid; and

125, a male skeleton, displaying O.A. of the lumbar vertebrae and of the sacrum.

Anomalies of the spine

No.67, a female skeleton, shows the top sacral segment to be unfused in the midline, leaving a v-shaped cleft in the sacrum.

No.84, also female, shows a similar mid-line defect, but in this instance the cleft has nearly closed.

No.99, a female skeleton, displays a detached arch of the fourth lumbar vertebra (spondylolisthesis), while

No.100, also a female, shows a lack of fusion between the arch of the first sacral segment and the second one.

Other post-cranial pathology includes:

56, a male skeleton, with an exostosis on the outer side of the right tibia shaft which is probably the result of an old healed inflammation;

67, a female skeleton, showing a small cavity in the left navicular, probably due to infection or arthritis;

78, a juvenile skeleton, of which the right femur is grossly thickened and 'spongy'. Some of the affected leg is missing, but the rest of the skeleton, including the left femur, is normal;

90, a male skeleton, showing periostitis on the central front surface of both femur shafts;

99, a female, with a cartilage defect of one acetabulum, and

145, a skeleton showing some signs of disease in the articulation of the right femur head.

Table I. Age and sex distribution of adults

	Numbers of specimens. Aged approx. 20-30 yrs.	Numbers of specimens. Aged approx. 30-45 yrs.	Numbers of specimens. Aged approx. over 45 yrs.
MALES * (39%)	9; 14; 58; 71; 114; 146	15; 30; 54; 56; 63; 66; 103	27; 36; 52; 65; 90; 125
FEMALES * (30%)	6; 25; 28; 37; 38; 46; 53; 59; 67; 92; 96B; 110	3; 93; 112	1; 33; 44; 42; 61; 62
UNSEXABLE age estimate only	23; 29; 91; 124; 130	32; 116; 138; 147	121; 160
Age-groups as % of total adults	22%	13%	13%

* These are percentages based only on skeletons complete enough for estimates of age or sex to be formed.

Table II. Age distribution of juveniles *

Numbers of specimens. Aged approx. 0-6 yrs.	Numbers of specimens. Aged approx. 6-12 yrs.	Numbers of specimens. Aged approx. 12-18 yrs.
20; 34; 55; 74; 110; 119	21; 43; 78; 89; 105 117; 153	35; 48

* In a few instances, an age could not even be established tentatively.

Table III: Post-cranial Means

	FeL_1	FeL_2	FeD_1	FeD_2	TiL_1	TiD_1	TiD_2	HuL_1	HuD_1	HuD_2	RaL_1	UlL_1
♂	488 (3)	466 (7)	26.5 (7)	34 (7)	379 (6)	37.5 (6)	24 (6)	340 (3)	22.5 (4)	18 (4)	254 (2)	286 (2)
♀	465 (2)	454 (3)	26 (4)	30.7 (4)	364 (8)	32 (6)	23 (6)	316.5 (4)	22 (4)	15 (4)	238 (2)	256 (2)

Table IVA: Cranial Means

Measurement	Biometric Symbol	Males	Females
Glabello-occipital length	L	179(8)	186(9)
Biparietal breadth	B	141(4)	135(8)
Minimum frontal breadth	B'	97(17)	95(12)
Maximum frontal breadth	B''	117(9)	115(10)
Nasion - bregma arc	S_1	127(14)	125(18)
Nasion - bregma chord	S'1	110(16)	108(19)
Bregma-lambda arc	S_2	125(8)	127(14)
Bregma-lambda chord	S'2	117(9)	114(13)
lambda-opisthion arc	S_3	124(2)	121(7)
lambda-opisthion chord	S'_3	105(2)	97(7)
lambda-asterion arc	O_7	96(6)	99(9)
lambda-asterion chord		84(4)	88(9)

Table IVB: Facial and mandibular means

Measurement	Biometric Symbol	Males	Females
Palate length	G'1	38(4)	36(7)
Palate breadth	G_2	40(7)	35(6)
Maximum zygomatic breadth	J	80(3)	86(2)
Nasal breadth	NB	24(2)	22(5)
Bicondylar breadth	W_1	123(2)	117(5)
Bigonial breadth	GoGo	106(2)	97(4)
Symphyseal height	H_1	33(17)	30.5(16)
Minimum ramus breadth	RB'	33(16)	31(15)
Bimental breadth	ZZ	44(15)	43(9)

All numbers in parentheses indicate sample sizes.

Table V: Estimated maximum stature from long bones

MALES			FEMALES		
No.of specimen	Estimated stature from combined femur & tibia lengths	Estimated stature from tibia length alone	No.of specimen	Estimated stature from combined femur & tibia lengths	Estimated stature from tibia length alone
9	182 cm.		1		171 cm.
33		173 cm.	6		161 cm.
36		169 cm.	11		164.5 cm.
56		169 cm.	46		164.5 cm.
93	178 cm.		62		165 cm.
96B	175.5 cm.		67	171 cm.	
			87		165 cm.
			99	171 cm.	

Table VI: Dental Pathology

	Size of tooth group	Total caries	%	Abcess	%	A.M.Loss	%
MOLARS	587	51	8.7	9	1.5	43 (excepting no.42)	7.1
PREMOLARS	440	13	2.9	5	1.1	14	3.2
CANINES	224	1	0.4	2 or 3	0.8+	0	0
INCISORS	330	2 or 3	6.0+	3 or 4	1.3+	1	0.3

Table VII: Reduction of upper molars

	Number of individuals	4-cusped	3-cusped	2-cusped	much reduced
M1	41	41	0	0	0
M2	35	13	22	0	0
M3	27	2	21	1	1