APPENDIX I

REPORT ON HORSE AND DOG SKELETONS FROM BLEWBURTON HILL

By JUDITH E. KING, British Museum (Natural History)

THE skull and complete skeleton of a young horse (horse A), and part of the lower jaw of a very old horse (horse B) have been excavated from the Early Iron Age hill fort at Blewburton on the Berkshire downs. The skull and lower jaw of the younger animal were very fragmentary, but have been excellently mended and reconstructed so that they are practically complete.

All the permanent cheek teeth and incisors of horse A have erupted; the third incisor is not much worn and it is estimated by comparison with specimens in the British Museum (Natural History) collection that the animal was about five years old. There is one medium sized canine in the lower jaw, the other being missing. Two small "wolf teeth" or first premolars are present in the upper jaw. These teeth were well developed in ancient horses, but are not uncommon in modern breeds. The right upper third incisor is malformed.

Both of the Berkshire specimens indicated that rather small animals were involved so comparisons were made with a New Forest pony, two Exmoor ponies, and two donkeys. Measurements are given in Table 1.

In skull length the horse A is nearest to the New Forest pony, but they are obviously of widely divergent ages. Whereas the horse A is, as noted above, about five years old the New Forest pony skull is from a very aged animal. This is a significant point in the correlation of some of the other skull dimensions. The cheek teeth of horses do not maintain the same cross sectional area throughout their length, but diminish towards the base of the crown. This being so, and as the teeth keep in proximity to each other as they wear, the total tooth row length also diminishes, (see Table 1, columns 5 and 6) and so increases the length of the diastema. Thus in Table 1. the difference in diastema length between a young donkey and an aged one is explained, and the fact that the Blewburton horse A diastema proportion is near that of the aged donkey is not significant as the teeth of horse A show it to be a young animal. Similarly the two Exmoor pony skulls show how the diastema increases with age. Although the Blewburton skull A is somewhat smaller than that of the $4\frac{1}{2}$ year old Exmoor pony the diastema proportion is very nearly the same in both.

In the same way the lower jaw of horse B shows the shortened tooth row and increased diastema length to be expected in an old animal.

The limb bone measurements of horse A are stated in Table 2, and are compared with those of a New Forest pony. The measurements indicate that the latter is the larger animal and that the horse A was approximately 10 hands high.

Donkeys have noticeably small hooves, and correspondingly their terminal phalanges are very much smaller than those of horses. The width of one of the terminal phalanges of the old donkey is 41 mm., that of the younger Exmoor pony 71 mm., and of the New Forest pony 63 mm. The terminal phalange width of horse A, 59 mm., corresponds with the small size of the animal.

In general it may be said that the Blewburton horse A was a small animal, approximately five years old and differing in no appreciable manner from modern breeds of small horses. Horse B was also of small size, but was an aged animal.

The skull and limb bones of the Early Iron Age dog from Blewburton Hill, Berkshire, have been compared with skeletons of domesticated dogs in the British Museum (Natural History) collection, and also with the skeleton of an Iron Age dog from Ewell, Surrey. Measurements are given in Tables 3 and 4.

The skull indicates that the dog was physically mature. The teeth are fairly worn.

The Ewell skull was very like a Samoyede in size and general shape, but though the Blewburton skull is approximately the same length the differences in shape show that the dog was not of Samoyede type. The Blewburton skull is the narrower of the two, both in the palate and the braincase, and there is not such a conspicuous concavity of the fronto-nasal region.

The limb bones are shorter than those of the Ewell dog, and are proportionately less stout. The hind legs were much shorter in proportion to the front legs than those of the Ewell dog.

The Blewburton skull shows no distinct resemblance to any of the skulls of the pure bred domesticated dogs, and is presumably from an unspecialised mongrel dog of small size, the estimated height at the shoulder being approximately 20 inches.

TABLE 1.

	1.	2.		3.	4.		5.		6.	
	Skull length.	Diastema length† Upper	% of 1.	Lower jaw length.	Diastema length Lower	% of 3.	Length 1st 5 cheek teeth— Upper	% of 1.	Length 1st 5 cheek teeth— Lower	% of 3.
Donkey—young	396 mm.	89 mm.	22·5	332 mm.	74 mm.	22·3	132 mm.	33·3	140 mm.	42·2
Blewburton horse A	431 ,,	101 ,,	23·4	366 ,,	92 ,,	25·1	136 ,,	31·5	137 ,,	37·4
Donkey—old	411 ,,	97 ,,	23·6	351 ,,	88 ,,	25·1	108 ,,	26·3	108 ,,	30·8
Exmoor 4½ yrs.	485 ,,	115 ,,	23·7	407 ,,	101 ,,	24·8	146 ,,	30·1	144 ,,	35·4
New Forest Pony—old	436 ,,	109 ,,	25·0	370 ,,	103 ,,	27·8	118 ,,	27·1	115 ,,	31·1
Exmoor 9 yrs.	449 ,,	115 ,,	25·6	372 ,,	100 ,,	26·8	125 ,,	27·8	126 ,,	33·8
Blewburton horse B.	—	—	—	407+*	108+*	25·5	—	—	121 ,,	29·7

* Slightly broken at tip.

† Diastema measured from tip of jaw to anterior edge of 2nd premolar.

TABLE 2.

	Length.		*Width proximal end.*		*Width distal end.*	
	Horse A	New Forest Pony	*Horse A*	New Forest Pony	*Horse A*	New Forest Pony
Femur	302	352	90	98	73	82
Tibia	294	311	75	84	57	58
Metatarsal	223	228	40	42	41	40
Humerus	230	257	77	80	61	62
Radius	285	293	64	69	60	61
Metacarpal	181	190	39	41	41	38

All measurements in millimetres.

TABLE 3.

	Blewburton dog.		Ewell dog.	
	mm.	%	mm.	%
Skull.				
Condylo-basal length	174	100	177	100
Orbit-snout	80	45·9	81	45·7
Snout width (post. to 2nd pm.)	38	21·8	39	22·0
Palate length	91 (approx.)	52·2	97	54·8
Palate width	48	27·5	56	31·6
Parietal width	52	29·8	59	33·3
Post-orbital constriction	38	21·8	39	22·0
Zygomatic width	98 (approx.)	56·3	107	60·4
Mandible.				
Condyle-symphysis	134 (approx.)		142	

TABLE 4.

	Length.		*Width proximal end.*		*Width distal end.*	
	Blewburton.	Ewell.	Blewburton.	Ewell.	Blewburton.	Ewell.
Femur	169	187	34	38	31	33
Tibia	173	188	32	35	21	26
Humerus	155	165	26	28	29	33
Radius	155	164	16	18	22	24

All measurements in millimetres.