ART. XVIII.—*Note on the Ancient Maori Dog.*

By Captain F. W. HUTTON, Curator of the Canterbury Museum.

[*Read before the Philosophical Institute of Canterbury, 5th May, 1897.*]

Plate XV.

ALTHOUGH several papers have appeared in the "Transactions of the New Zealand Institute" on the ancient dog of the Maoris,* no one as yet has given measurements of specimens the age of which is undoubted, so that they can be compared with the measurements of other dogs. Messrs. Windle and Humphreys give the comparative measurements, taking the basicranial axis at 100, of a dog's skull from New Zealand, now in the Oxford Museum, which they presume to have belonged to the dog of the Maoris, and they also quote Fitzinger as saying that the similarity of characteristics between the Maori dog and the Great Pariah is so marked as to leave no doubt that the former is a climatic modification of the latter;† but no actual measurements are given. I have therefore thought that it would be useful to place on record the measurements of some bones of dogs in the Canterbury Museum from the old Maori kitchen-middens, the great age of which cannot be doubted, all those from the South Island having been found associated with moa-bones.

The measurements given are in millimetres, and have been made according to the plan of Professor Huxley in his paper "On the Cranial and Dental Characters of the *Canidæ*."‡ As mandibles are more common than crania, they naturally show a wider variation in size, and I estimate that the largest mandible in the collection belonged to a skull with a total length of about 190 mm., while the smallest indicates a skull of about 130 mm. in length. In the lower jaw, numbered C, the third molar is suppressed, but in all the others it is, or has been, present. For the sake of comparison I have also given the measurements of the skull of a dingo which is in the Museum:—

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* Sir James Hector, in vol. ix., p. 243; the Rev. W. Colenso, in vols. x., p. 135, and xxv., p. 495; Mr. Taylor White, in vols. xxii., p. 327, xxiv., p. 540, and xxvi. p. 585.

† Pro. Zool. Society of London, 1890, p. 22.

‡ Pro. Zool. Society of London, 1880, p. 243.

CRANIAL AND DENTAL MEASUREMENTS OF THE ANCIENT MAORI DOG AND DINGO.

—	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.	M.	N.	O.	P.	Q.
Total length	..	179	..	..	..	170	162	..	..	..	..	..	157	..	145	..	176
Zygomatic width	..	112	..	..	..	..	..	..	..	..	..	91	87	..	..	..	100
Length of palate	..	91	..	85	83	86	78	..	..	..	..	79	79	..	70	..	85
Width of palate	..	65	..	60	58	59	55	..	..	..	..	53	57	..	53	..	59
Basicranial axis	..	55	..	..	..	48	46	..	..	..	..	..	49	..	44	..	57
Length of ramus	143	139	135	..	..	..	129	122	133	132	112	..	119	121	117	103	130
Length pm. and m. ..	..	53	..	52	50	53	55	..	..	..	..	49	53	..	51	..	63
Length $\overline{\text{pm and m.}}$ ..	71	66	61	..	..	..	64	61	68	66	60	..	65	61	64	59	71
Length pm. 4	..	16	..	16	14	15	16	..	..	..	..	13	15	..	14	..	19
Length m. 1	..	10	..	10	9	10	9	..	..	..	..	9	10	..	10	..	12
Length $\overline{\text{m. 1}}$	20	18	18	..	..	..	17	18	18	18	17	..	19	18	19	17	20
Length $\overline{\text{m. 2}}$	8	8	7	..	..	..	8	8	8	8	7	..	8	..	8	6	9

A to H are from the sandhills at the mouth of the Shag River, Otago.
I to K are from the Moa-bone Point Cave, on the Sumner Road.
L is from Monk's Cave, on the Sumner Road.
M to P are from the sandhills near the Waimarama River, in Hawke's Bay, and were collected by Mr. F. H. Meinertzhagen.
Q is a dingo from Australia.

Of six skulls which show the postorbital process of the frontal bone four have it convex, as in most wild dogs; but in D and E it is slightly concave, with the outer margin raised, and is similar to that of the dingo and of a domestic dog in the Museum collection. The temporal ridges rarely meet and the sagittal crest is generally small. The skulls are remarkable for the shortness of the basicranial axis and the smallness of the teeth. The total length of the skull is less than three times the width of the palate, consequently it is relatively shorter and broader than the skull of the dingo, or of the Indian Pariah dog; but the premaxilla is not so deep as in the dingo, making the upper profile of the head more concave, so that the muzzle, although short, is pointed. The orbits are larger than in the dingo, notwithstanding that the eye has been described as small.

In the following table I have shown the comparative measurements, taking the basicranial axis as 100; but as I am not quite certain that the mandibles belong to the skulls with which they are associated some doubt attaches to those numbers. These mandibles, however, seem to fit the skulls. Several of the measurements from Messrs. Windle and Humphreys's paper are added for comparison:—

COMPARATIVE MEASUREMENTS: the Basicranial Axis taken at 100.

—	N.Z. Dog (5 Skulls).			N.Z. Oxford Skull.	Dingo.		Pariah. Messrs. W. & H.	Sheep-dog. Messrs. W. & H.	Skye Terrier. Messrs. W. & H.
	Max.	Min.	Av.		Museum.	Messrs. W. & H.			
Total length ..	354	320	339	323	308	303	302	288	304
Zygomatic width ..	203	178	190	173	175	173	166	157	194
Length of palate ..	179	160	167	163	149	149	147	141	153
Width of palate ..	123	116	119	111	103	104	100	100	119
Length $\underline{\text{pm. and m.}}$ ..	120	96	107	110	110	108	108	113	108
Length $\overline{\text{pm. and m.}}$ ..	145	120	134	131	124	126	123	117	125
Length $\underline{\text{pm. 4}}$ ..	34	29	31	31	33	31	31	29	36
Length $\underline{\text{m. 1}}$ ..	22	18	20	22	21	20	20	21	23
Length $\overline{\text{m. 1}}$ ..	43	32	37	38	35	34	34	34	39
Length $\overline{\text{m. 2}}$ ..	18	14	16	..	15	13	13	14	15

These comparative measurements, although not of much use in bringing out the special characteristics of the Maori dog,*

* Professor Karl Pearson has lately shown that this method of taking ratios may lead to very erroneous conclusions: Pro. Royal Soc., vol. 60, p. 489.

show that the Oxford skull has been rightly named, but they by no means bear out Fitzinger's statement that the ancient Maori dog closely resembled the Pariah, of India.

There are not many leg-bones of the Maori dog in the Museum. Of two femora, one, from Shag Point, is 142 mm., and the other, from the Maori encampment at the mouth of the Rakaia, is 136 mm. in length. A tibia from the Moa-bone Point Cave is 114 mm. in length. A humerus from Shag Point has a length of 125 mm.; and another, from the Moa-bone Point Cave, of 119 mm. A radius from Shag Point is 120 mm., and an ulna from the Moa-bone Point Cave is 122 mm. in length.

I have no skeletons of domesticated dogs to compare these measurements with, but I have compared them with the skeletons of a wolf and a fox in the Museum, with the following results, the length of the head being taken as 100 in each case:—

COMPARATIVE MEASUREMENTS OF WOLF, FOX, AND MAORI DOG.

—	Humerus.	Radius.	Femur.	Tibia.
Wolf	80	78	86	83
Fox	84	81	86	95
Maori dog ..	74	73	85	70

These comparative measurements show that the ancient Maori dog had short legs, the femur being the only bone which shows no reduction in length. The bones are stout, quite as stout in proportion as those of the wolf, and much stouter than those of the fox.

There are also in the Museum three mats made of strips of dog's skin fastened on to flax. They were, I believe, purchased by Sir J. von Haast, and appear to be very old, but I can find no history of them. The mats are about 43 in. in length, but I think that none of the strips of skin go the whole length: the longest I could find was 27 in. Their width is $\frac{1}{4}$ in. or less. There are two colours only, white and dark-brown. The brown is so dark that it might casually be called black, but it is really brown. Possibly the colour may have faded. Both in colour and in length of hair these mats closely resemble the skin of the stuffed dog from Waikawa, in the Wellington Museum; and in its short legs and pointed nose this specimen must closely resemble the ancient Maori dog as described by Crozet and others. It would be interesting to have measurements of the skull of this specimen, which could be compared with those here given of the skulls from the Maori kitchen-middens.

EXPLANATION OF PLATE XV.

SKULLS OF ANCIENT MAORI DOGS.

The upper and middle figures are crania from the sandhills at the mouth of the Shag River, Otago. They were found associated with moa-bones.

The lower figure is a cranium from the sandhills north of Waimarama, Hawke's Bay.

The figures are reduced about one-half.

ART. XIX.—*On a Collection of Insects from the Chatham Islands, with Descriptions of Three New Species.*

By Captain F. W. HUTTON, Curator of the Canterbury Museum, Christchurch.

[*Read before the Philosophical Institute of Canterbury, 1st September, 1897.*]

So little is known about the insect fauna of the Chatham Islands that a list of a small collection made by Mr. J. J. Fougère on the main island will not be unacceptable. This collection was contained in a bottle of methylated spirits, and, in consequence, many of the specimens were in bad condition, especially the *Diptera;* but in most cases they were sufficiently well preserved for identification. The bottle contained no *Lepidoptera.*

COLEOPTERA.

Anchomenus submetallicus, White, Voy. "Erebus" and "Terror," Insects, p. 2 (*Colpodes*); Broun, Man. Coleopt. N.Z., p. 24.

Colymbetes rufimanus, White, Voy. "Erebus" and "Terror," Insects, p. 6; Broun, Man. Coleopt. N.Z., p. 74.

Staphylinus oculatus, Fabricius, Ent. Syst., ii., p. 521; Broun, Man. Coleopt. N.Z., p. 107.

Sternaulax zealandicus, Marseul; Broun, Man. Coleopt. N.Z., p. 162.

This insect seems to agree with New Zealand specimens, but as the fore tibiæ are broken off I cannot make a complete comparison. It is, however, much smaller, being only 5 mm. in length.

Leperina wakefieldi, Sharp, Ent. Mon. Mag., Jan., 1877; Broun, Man. Coleopt. N.Z., p. 179.

The length varies from 14–9 mm.