



Title	臺灣水牛の體則に就きて
Author(s)	柳川, 秀興
Citation	札幌博物学会会報, 5(3), 143-145
Issue Date	1915-03-15
Doc URL	<a href="http://hdl.handle.net/2115/61227">http://hdl.handle.net/2115/61227</a>
Type	article
File Information	Vol.5No.3_001.pdf



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# MEASUREMENT OF THE FORMOSAN BUFFALO.

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臺灣水牛の體則に就て

農學士 柳川秀興

臺灣恒春種畜牧場

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During my extended travels through the Philippine Islands in 1912 and 1913, I saw a great many carabaos or water buffaloes there, especially in the islands of Mindanao and Luzon. Except the Mindoro timarau, which I had no chance to see, most of the native buffaloes seemed to be identical with our Formosan breed, that is *Bubalus buffelus* var. *sondaica* Müller et Schlegel<sup>1)</sup>. In size, however, they were generally larger than ours. The measurement was done after the method of Werner.<sup>2)</sup>

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1) Werner's Rinderzucht. II. Aufl. S. 6.

2) J. c. S. 144.

Name .....	BUFFALO-COWS OF FORMOSA					Total	Average
	Tsune-izumi	Singetsu	Tsune-aki	Koshun	Koshun VI		
	13	8	12	6	6		
Years old .....	July 20, 1914	July 20, 1914	July 20, 1914	July 20, 1914	July 20, 1914		
Date of measurement .....	120.5	120.0	120.5	122.0	123.8	606.8	121.4
Height at withers .....	122.5	121.4	123.7	119.5	125.0	612.1	122.4
Height at chine .....	126.0	123.4	123.2	124.0	126.3	622.9	124.6
Height at croup .....	121.5	115.7	116.4	113.6	115.0	582.2	116.4
Height at setting of tail .....	70.0	71.0	72.5	65.0	70.0	348.5	69.7
Depth of chest .....	31.0	28.0	31.5	32.0	33.0	155.5	31.1
Height at knee .....	46.0	44.0	45.0	42.5	45.0	222.5	44.5
Height at hock .....	64.3	64.5	63.5	68.0	68.0	328.3	65.7
Height at elbow .....	101.4	96.5	99.0	101.2	103.5	501.6	100.3
Height at thigh-joint .....	165.4	166.0	179.5	169.2	173.0	853.1	170.6
Length from poll to tail .....	139.0	134.3	135.5	124.0	137.0	669.8	134.0
Length from shoulder joint to pin bone....	47.5	44.4	46.0	45.0	47.0	229.9	46.0
Length of shoulder .....	44.0	38.5	47.0	45.5	46.5	221.5	44.3
Length of pelvis .....	31.5	30.0	29.5	28.5	30.5	150.0	30.0
Length of loin .....	48.0	42.0	40.0	41.0	42.0	213.0	42.6
Breadth of forchest .....	45.0	39.0	43.0	43.0	46.0	216.0	43.2
Breachth of hindchest .....	179.0	183.0	183.0	182.0	183.0	910.0	182.0
Girth of hindchest .....	44.0	44.5	48.2	50.0	46.0	232.7	46.5
Breadth of pelvis .....	55.2	53.5	54.0	54.0	59.0	275.7	55.1
Breadth between hips .....	26.5	28.0	25.0	28.0	27.0	134.5	26.9
Breadth between pin bones .....	21.0	21.5	20.5	23.0	21.0	107.0	21.4
Girth of shank .....	46.0	47.0	49.0	48.0	49.0	239.0	47.8
Length of head .....	20.0	21.0	22.0	21.5	21.0	105.5	21.1
Length of forehead .....	19.0	17.0	19.0	18.5	20.0	93.5	18.7
Breadth of upper forehead .....	20.0	20.0	21.0	21.0	21.0	103.0	20.6
Breadth of lower forehead .....	18.0	17.0	19.0	18.0	17.0	89.0	17.8
Narrowest breadth of forehead .....	51.0	51.0	41.0	47.0	51.0	241.0	48.2
Length of horn .....	67.0	65.0	69.5	63.0	69.0	333.5	66.7
Length of neck .....	451.5	415.5	445.9	407.6	437.5	2158.0	431.6
Live weight in kilogramms .....							

a) Ox, Castrated before 1908. b) Ox, Castrated in March

BUFFALO-OXEN AND BULL OF FORMOSA												
Percent- age	Maxim.	Min.						Total.	Aver- age	Percent- age	Max.	Min.
			Garan-	Munsoo	Taihan-	Tamah	Gonteh					
			bi (a)	I (b	roku I(c	(d	(e					
			11	12	9	9	7					
			July 18,	July 18,	July 18,	July 18,	July 19,					
			1914	1914	1914	1914	1914					
100.0	123.8	120.0	123.5	134.2	127.0	127.5	124.5	636.7	127.3	100.0	134.2	123.5
100.8	125.0	119.5	128.8	132.5	125.8	130.0	124.5	641.6	128.3	100.8	132.5	124.5
102.6	126.3	123.2	126.2	132.5	126.5	128.0	125.0	638.2	127.6	100.2	132.5	125.0
95.9	121.5	113.6	124.5	121.0	122.0	121.0	113.5	602.0	120.4	94.6	124.5	113.5
57.4	72.5	65.0	76.5	81.0	71.0	75.0	72.0	375.5	75.1	59.0	81.0	71.0
25.6	33.0	28.0	34.0	37.0	34.0	34.5	31.0	170.5	34.1	26.8	37.0	31.9
36.7	46.0	42.5	47.0	46.8	49.0	48.5	47.0	238.3	47.7	37.5	49.0	46.8
54.1	68.0	63.5	70.0	73.1	70.0	68.0	66.0	347.1	69.4	54.5	73.1	66.0
82.6	103.5	96.5	102.7	106.3	102.5	103.0	105.7	520.2	104.0	81.7	106.3	102.5
140.5	179.5	165.4	178.5	195.5	175.3	186.3	178.0	913.6	182.7	143.5	195.5	175.3
110.4	139.0	124.0	140.0	150.0	143.5	143.5	138.7	715.7	143.1	112.4	150.0	138.7
37.9	47.5	44.4	51.0	54.5	48.5	51.0	51.0	256.0	51.2	40.2	54.5	48.5
36.5	47.0	38.5	50.0	46.0	45.0	47.0	50.0	238.0	47.6	37.4	50.0	45.0
24.7	31.5	28.5	29.2	30.0	34.0	35.0	29.5	157.7	31.5	24.7	35.0	29.2
35.1	48.0	40.0	45.2	49.0	37.0	44.0	45.0	220.2	44.0	34.6	49.0	37.0
35.6	46.0	39.0	46.5	54.0	39.0	48.0	43.5	231.0	46.2	36.3	54.0	39.0
149.9	183.0	179.0	188.0	201.0	179.0	194.0	185.0	947.0	189.4	148.8	201.0	179.0
38.3	50.0	44.0	47.5	46.5	44.0	48.0	44.5	230.5	46.1	36.2	48.0	44.0
45.4	59.0	53.5	55.2	61.0	52.0	56.5	53.0	277.7	55.5	43.6	61.0	52.0
22.2	28.0	25.0	25.0	28.0	26.5	27.0	27.0	133.5	26.7	21.0	28.0	25.0
17.6	23.0	20.5	22.0	23.5	21.5	23.0	21.5	111.5	22.3	17.5	23.5	21.5
39.4	49.0	46.0	49.0	53.0	49.0	48.5	50.0	249.5	49.9	39.2	53.0	48.5
17.4	22.0	20.0	21.0	23.0	23.0	21.0	21.0	109.0	21.8	17.1	23.0	21.0
15.4	20.0	17.0	19.0	18.0	21.0	17.5	20.0	95.5	19.1	15.0	21.0	17.5
17.0	21.0	20.0	23.3	24.0	22.0	22.5	22.5	114.3	22.9	18.0	24.0	22.0
14.7	19.0	17.0	19.0	17.5	19.0	18.5	18.5	92.5	18.5	14.5	19.0	17.5
39.7	51.0	41.0	61.0	61.0	55.5	62.0	57.0	296.5	59.3	46.6	62.0	55.5
54.9	69.5	63.0	69.0	81.0	71.0	76.0	74.0	371.0	74.2	58.3	81.0	69.0
	451.5	407.6	481.1	527.3	388.1	495.0	—	1891.5	472.9		527.3	388.1

1906. c) Ox, Castrated in March 1908. d) Ox, Castrated in March 1908. e) Bull.