SOME ADDITIONS TO A REVISION OF THE RUSINE DEER IN THE INDO-AUSTRALIAN ARCHIPELAGO

by

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1. On a small collection of deer heads from the Poso district (Celebes)

Through the courtesy of Mr E. G. MONTEIRO of the Indonesian Forestry Service, I have been able to examine a collection of fourteen deer heads, collected in the Poso district, Central Celebes. The heads were collected at the coast of Poso bay (Todjo; Uikuli; West of Malai; Mapane), inland near the Poso river (Pandiri) and one head near Poso lake (Tentena). Ten skulls were presented to the Museum Zoologicum at Bogor (Java), four heads have been retained in Mr MONTEIRO's private collection. Most

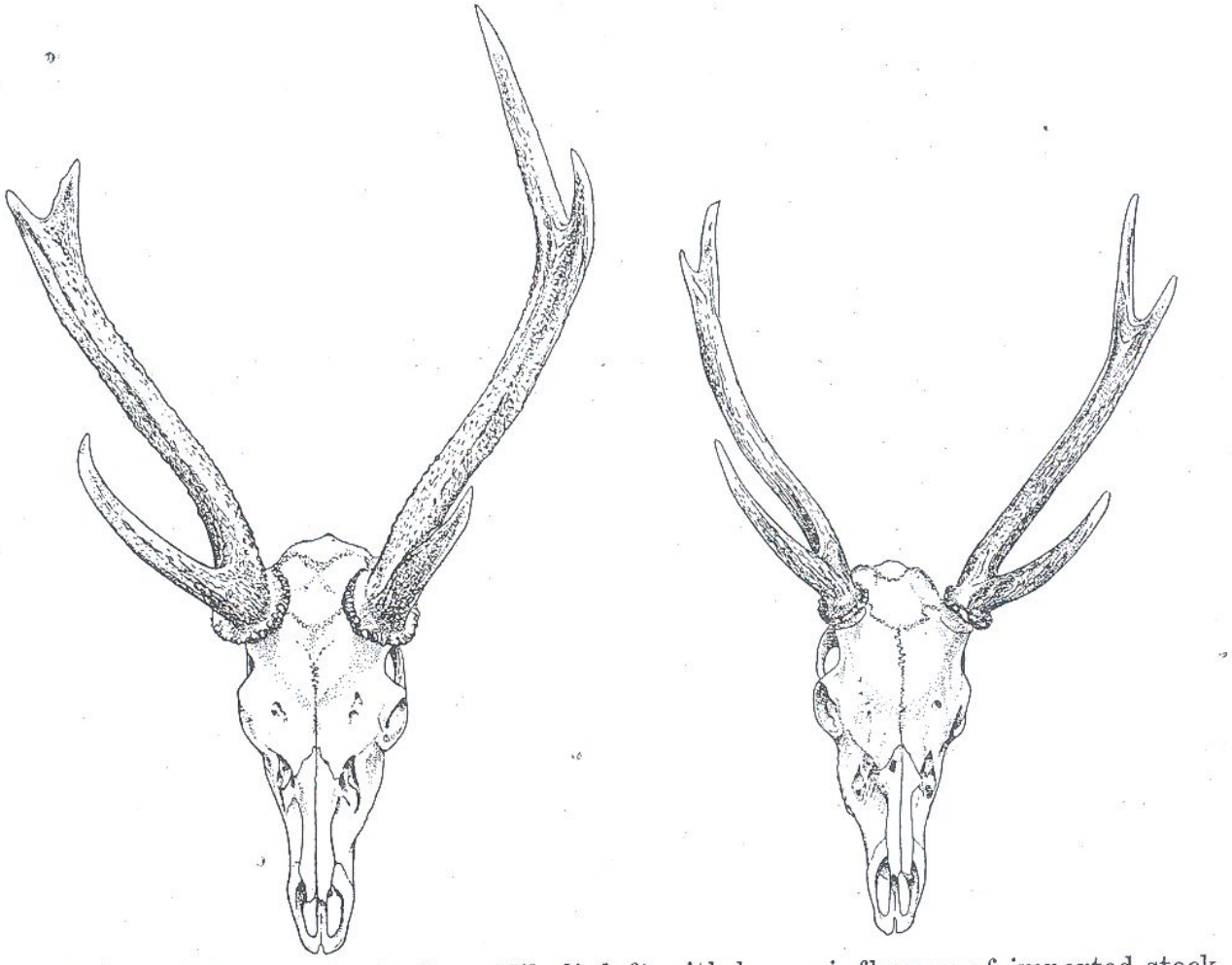

Fig. 1. Two deer heads from Uikuli, left with heavy influence of imported stock, right without influence of imported stock. Structure of antlers remarkably alike.

TABLE

MEASUREMENTS OF SOME DEER HEADS COLLECTED IN THE

Collection number	Locality	Sex	Age in years	Condylobasal length	Condylobasal length from oral border foramen magnum	Occipito-nasal length	Total length of skull	Zygomatic breadth	Greatest width of braincase	Greatest width of 2 nasals	Length of nasals in median line	Length of frontal suture	Lacrimal notch to the tip of premaxillaries
M 10	Todjo	♂	8	290	269	258	300	129	75	36	104.5	91.5	167
M 5	Uikuli	♂	5	307	284	283	326	135	76	35	116.5	96	182
3819 Z.M.	id.	♂	6	274	258	249	292	123	74	34	102	88	163
3818 Z.M.	W. of Malai	♂	6	287	263	(253)	305	127	75	35.5	(96)	94	168
3817 Z.M.	id.	♂	7	—	270	273	311	126	76	36.5	110	101	171
3826 Z.M.	Mapane	♂	(1½)	—	—	—	—	—	—	30.5	97	78.5	—
3824 Z.M.	id.	♂	young	—	—	—	—	—	—	—	—	89	—
3825 Z.M.	id.	♂	?	—	—	—	—	—	—	—	—	91	—
M 4	id.	♂	8	301	282	274	321	135	78	39	112	95	181
3821 Z.M.	Pandiri	♂	3	283	264	250	298	126	73	34.5	102	88	164
3823 Z.M.	id.	♂	4	—	266	256	299	125	76	31.5	104	83	163
3822 Z.M.	id.	♂	4	289	269	260	305	124	75	37	103	91.5	171
3820 Z.M.	id.	♂	5	—	—	(239)	—	124	76	32	—	81	—
M 11	Tentena	♂	?	—	—	—	—	—	—	—	—	90	—

TABLE

MEASUREMENTS OF SKULLS OF *Rusa timorensis floresiensis* (HEUDE)

Collection number	Locality	Date	Sex	Age in years or months (m.)	Condylo-basal length	Condylo-basal length from oral border foramen magnum	Occipito-nasal length	Total length of skull	Zygomatic breadth	Greatest width of braincase	Greatest width of 2 nasals
3835	Loko Jengo, C. Sumba	22. ix. 49	♂	7	—	251	245	282	125	72.5	28.5
3836	Lindi Watju, C. Sumba	1. x. 49	♂	7	272	256	246	282	122	72.5	30.5
3832	„ „ „	7. x. 49	♀	4 m	142	130	131	151	66.5	55	16
3833	„ „ „	1. x. 49	♀	14 m	226	209	206	237	101	65	21
3834	Loko Jengo „	26. ix. 49	♀	12	—	222	221	259	108	66	25.5

o district (Central Celebes) by Mr E. G. Monteiro.

	Width of palatinum between m³	Maxillary toothrow	Length of pedicles from caudal border of orbit	Greatest length of antlers	Greatest width of antlers	Distance tip to tip of antlers	Length of glandular pit	Depth of glandular pit	Number of points	Remarks
	49	80	55	698	465	(300)	—	—	3+3	Very slight influence imported stock.
	49.5	85	67	530	430	(310)	37	12	3+3	Heavy influence imported stock.
	43	80	53	378	373	325	34	9	3+3	No influence imported stock.
	46	81.8	67	690	425	250	32	11	3+3	Very slight influence imported stock.
	47	81.8	75	602	490	410	37	12	4+3	Intermediate crossbred
	—	—	65	240	172	130	—	—	2+3	First antlers!
	—	—	71	238	—	76	—	—	2+3	Abnormal
	—	—	—	300	290	230	—	—	3+3	—
	49.5	84.5	57.5	640	430	290	37	—	3+3	Heavy influence imported stock
5	47	80	75	333	265	165	35	11	3+3	No influence imported stock
5	46	81.5	76	280	258	218	31	10	3+3	No influence imported stock
	44	81.5	69	345	318	195	36	12	3+3	No influence imported stock
5	44	—	61.5	394	385	242	33	12	3+3	No influence imported stock
	—	—	(68)	604	487	368	—	—	4+3	—

lected in Sumba by Mr A. M. R. Wegner.

median line	Length of frontal suture	Lacrimal notch to the tip of premaxillaries	Interorbital breadth	Width of palatinum between m³	Length of mandible	Maxillary toothrow	Mandibular toothrow	Length of pedicles from caudal border of orbit	Greatest length of antlers	Distance tip to tip of antlers	Greatest width of antlers	Length of glandular pit	Depth of glandular pit	Total number of points
	87	157	87	43	221	78.0	90.8	67	291	—	375	31	14	3+3
.5	85.5	157	81.5	41	221	80.7	90.8	55	520	270	425	31	17	3+3
	51.5	70	38	(22)	113	(40,1)	(39.3)	—	—	—	—	11	2	—
	70.5	129.5	54.5	(37.5)	183	(65.5)	(69.5)	—	—	—	—	24	8	—
	72	147	66	40	211	71.2	82.4	—	—	—	—	26	11	—

TABLE III

MEASUREMENTS OF FRONTLETS AND ANTLERS OF *Rusa timorensis floresiensis* (HEUDE) FROM C. SUMBA.

Collection number	Locality	Approximate age in years or months (m)	Greatest width of 2 nasals	Length of nasals in median line	Length of frontal suture	Lacrimal notch to the tip of premaxillaries	Interorbital breadth	Length of pedicles from caudal border of orbit.	Greatest length of antlers	Distance tip to tip of antlers	Greatest width of antlers	Length × depth of glandular pit	Total number of points
3895	Loko Jengo	16 m	23	76	77.5	130	59	72	195	90	—	—	1 +1
3894	„	1½-2	24.5	78	77	—	(68)	76	90	112	—	—	1 +1
3897	„	2—3	27	91	82	147	76	71	210	198	240	—	3 +3
3898	„	3—4	28	89	83	150	74	73	235	215	310	—	3 +3
3896	„	ad.	28	91	80	151	81	58	330	210	340	—	3 +3
3899	„	ad.	29	92	81	—	81.5	64	330	226	342	—	3 +3
3902	„	ad.	31	99	85	156	89	58.5	530	245	360	32×14	3 +3
3903	„	old	31	97	84	160	94	49	210	200	220	—	2 +2
3904	„	old	32	98	81	158	87	61	394	205	290	33×16	1½+3
3901	„	old	31.5	97	83	156	82	60	400	195	357	32×14	3 +3
3893	„	old	31	98	87	—	87.5	46	425	258	350	—	3 +3½
3900	„	old	35	—	86	—	90	55	448	242	375	35×14	3 +2
3867	Lindi Watju	ad.	26.5	91	81	151	76	65	320	205	320	—	2½+3
3864	„	ad.	29.5	99	80	152	86	66	360	225	365	—	3 +3
3866	„	ad.	29	94	81	—	76	62	395	246	356	—	3 +3
3870	„	ad.	29	98	87	155	85	60	410	305	395	—	3 +3
3871	„	ad.	30	101	83	160	84	65	410	190	370	—	3 +3
3869	„	ad.	28	104	82	157	85	62	445	260	420	—	3 +3
3865	„	ad.	29	93	85	156	83	60	455	250	380	—	3 +3
3862	„	ad.	31	100	91	—	86.5	62	455	260	395	—	3 +3
3872	„	ad.	31	95	87	152	88	58	485	260	410	—	3 +3
3861	„	old	30	93.5	(77)	—	88	55	420	265	320	—	2 +3
3868	„	old	32	88	92	151	89	58	465	127	335	—	3 +3
3863	„	old	29	97	(78)	161	81	57	505	275	445	—	3 +3
3912	Langaliru	old	30	94	89	155	84.5	66	480	250	395	—	3 +3
3911	„	old	30.5	99	86.5	159	82	61	497	130	335	—	3 +3

skulls were complete, but without lower jaws. Part of the collection consisted of frontals and antlers with the rest of the skull cut away.

I am extremely grateful to Mr MONTEIRO for the opportunity of making an additional examination of deer heads from Celebes, material from this island being rather scarce in the collection of our Museum during my last investigation of deer from the Indo-Australian Archipelago (Treubia 20, 1949, pp. 191-262). As I have pointed out before (l.c. pp. 254-255), Celebes is inhabited by a more or less autochthonous race of Rusine deer, *Rusa timorensis macassaricus* (HEUDE). Locally this original stock shows cross-breeding with the Javanese race, *Rusa timorensis russa* (MÜLL. & SCHLEG.), as most certainly is the case in the Minahassa district. A specimen from Minahassa, showing obvious traces of cross-breeding could be examined earlier (loc. cit.).

Concerning the cross-breeding of original *macassaricus* with *russa*, the material collected by Mr MONTEIRO is most interesting. Most deer heads collected at the coast of Poso bay show traces of cross-breeding. Some specimens (Nrs M 10, 3818 Z.M.) show only a slight influence of imported stock, others are intermediate (3817 Z.M.) or very near typical *russa* (M4, M5). Of the two heads collected near Uikuli, one is very near *russa*, the other typical *macassaricus*. The antlers of both, however, are remarkably alike. This again does prove the theorema that antlers only provide us with phenotypical characters. It seems rather important to stress this fact, because deer are often imported for improvement of antlers in a certain population. This seems to have no sense at all, because after a short time the stags will carry the antlers induced by environment. The best heads in the present collection are carried by stags which show only slight influence of imported stock.

The coast of Poso bay has been colonized largely by people from Minahassa and it is possible they brought deer from Minahassa to their new homes. This seems the more likely because the deer population from Pandiri at the Poso river is very uniform; it does not present any traces of cross-breeding and should be considered as pure bred *macassaricus*.

2. On a collection of deer from Sumba

During the Swiss-Netherlands Expedition to Sumba in 1949, under the leadership of Prof. Dr A. BÜHLER, a collection of deer has been brought together by Mr A. M. R. WEGNER. This collection consists of 5 skins and skulls, a skin without skull and 74 frontlets with antlers. I am very much indebted to Mr WEGNER for the trouble taken in preserving the skins and bringing home this valuable material.

In my previous work on the Rusine Deer, cited above, the deer from Sumba have been inserted in the race *Rusa timorensis floresiensis* HEUDE (l.c. p. 240-247). However, material from Sumba was rather scarce at the moment of writing that revision, so the material which is now available proved to be a most welcome addition t oour knowledge of the deer from the Lesser Sunda Islands. There cannot be the slightest doubt that Sumba deer do belong to *floresiensis* because the description formerly given of that race is entirely applicable to the present material. It is to be regretted that Mr WEGNER, who had to purchase every specimen from native hunters, had no opportunity to take any measurements of the body in the flesh. So the question had to be left unanswered again whether body measurements really are somewhat larger in Sumba than in the other islands inhabited by this race.

Variation of populations. — There are some small differences between the populations in Sumba regarding the development of antlers. The best antlers in the present series are those from Lindi Watju. There are hardly any abnormal specimens among that set. Antlers from Loko Jengo are mostly small, with a few exceptions. Often the p^2 is turned inward, poorly developed or lacking altogether. The well developed antlers collected at Langaliru are striking because of their width. Among the present series there are no heads which are better than those brought home by Dr DAMMERMAN in 1925 (l.c. p. 246).

Biology. — As regards birth season, the present series contains a fawn, collected in October, which is presumably four months old. There are several antlers in velvet, collected in August, and some freshly swept antlers collected in the first days of December. But most antlers, each of which has been collected between August and December, are in more or less worn condition.