

Article XXII.—THE PEARY CARIBOU (*RANGIFER PEARYI* ALLEN).

BY J. A. ALLEN.

A large series of specimens, including perfect skins and skulls of both sexes, and also of young adults, obtained by Commander R. E. Peary in northern Grant Land, in October, 1905, enable me to complete the description of this very distinct and beautiful species, which was originally described from imperfect skins, without skulls, taken by Commander Peary in Ellesmere Land, in June, 1902.¹ Its nearly pure white color and small size distinguish it strikingly from all other known species of the genus.

The present large series, numbering 67 skins and 53 skulls, was collected on Fielden Peninsula and in the vicinity of Lake Hazen, in about latitude 82° N., and hence about three degrees north of the type locality, which is near the northern border of Ellesmere Land. As, however, Ellesmere Land, Grinnell Land, and Grant Land form a continuous land area, with everywhere quite similar climatic conditions, the Caribou of Ellesmere Land and Grant Land are probably not markedly differentiated, although the gray brown mantle in the Ellesmere Land specimens is, with one exception, considerably darker than in the Grant Land specimens. This is hardly to be accounted for by difference of season, since the Ellesmere specimens, though taken in June, were still in winter pelage.

Rangifer pearyi differs from both *R. grönlandicus* and *R. arcticus*, its nearest allies geographically, in being very much smaller, taking the skull as a basis for comparison (external measurements taken in the flesh are lacking), the *females* of *grönlandicus* and *arcticus* being as large as the *males* of *pearyi*. In color *pearyi* is radically different, being sometimes almost as pure white as the Arctic Fox or the Arctic Hare, at least in effect when seen in life at a little distance. Peary's reference to this species in his 'Nearest the Pole' (1907, p. 57), "as this magnificent snow white animal," is hardly an exaggeration, although the median area of the back in nearly all the specimens shows a mixture of gray, varying in different individuals from a slight tinge of gray to gray-brown, and also in the extent of this area, which is sometimes much restricted, and sometimes forms a broad mantle.

The large series of skins of *R. grönlandicus* here used for comparison was collected in November, by Commander Peary, at Inglefield Gulf, on

¹ This Bulletin, Vol XVI, pp. 419-412, figs 1 and 2, Oct. 31, 1902. Republished in Peary's 'Nearest the Pole,' 1907, pp. 350-352.

the Greenland side of Baffin Bay, opposite Ellesmere Land. These skins greatly resemble in coloration the ordinary Woodland Caribou, being dark brown with the neck much lighter and the ventral area white. They thus give no suggestion of the whiteness of pelage shown by their relatives on the opposite side of Baffin Bay.

The series of *R. arcticus* (*Cervus tarandus*, var. *a. arctica* Richardson) is from near Wager River, north of Hudson Bay, and was collected in October by Captain George Comer. This locality is only a short distance from Melville Peninsula, which Richardson especially mentions as within the range of his variety *arctica*, although not strictly its type locality. This is a much lighter colored animal than *R. groenlandicus*, from which it also differs in the character of the antlers. There is a blackish band across the chin, and a broad dark brown band across the nose, extending posteriorly in a V-shaped patch to nearly opposite the eyes; the cheeks, forehead and top of the head are lighter or yellowish brown; the throat, sides of the head up to the base of the ears, and the whole neck all around back to the shoulders, the whole ventral surface, inside of thighs, the buttocks, and the greater part of the tail are uniform cream-white. The limbs are dark brown nearly to the hoofs, adjoining which is a band of yellowish white, which extends upward for a short distance as a narrow median line on the posterior face of the carpal and tarsal segments. The whole body, except the ventral surface, is dark brown, passing into a lighter color on the flanks, where the hairs are tipped more or less with yellowish or pale fulvous, below which is a broad lateral band of dark brown.

In average specimens of *R. pearyi* the whole head and the limbs are uniform white,¹ like the neck and underparts, with a more or less strong grayish cast over the mid-dorsal area. From this they vary on the one hand to nearly pure white all over, and on the other to white with a grayish brown mantle, varying in different individuals, independently of sex and age, from drab-gray to drab-brown. In these darker specimens the dark chin and nose bands seen in other species of caribou are outlined by a faint plumbeous hue, the ears are similarly shaded, as is the median front surface of the fore legs, while the anterior face of the hind legs is distinctly pale drab-gray divided medially by a narrow white line, making the dark band double. Where these darker shades appear the pelage is brown basally, and the drab tint in places reaches the surface. Elsewhere the pelage is white to the base. Another striking feature of the pelage in *R. pearyi* is its extreme softness and fineness, in comparison with that of any other

¹ The whiteness of the head is well shown in the half-tone plate facing p. 80 of Peary's 'Nearest the Pole,' where two sledge loads of Caribou give a front view of two fine heads. The plate facing p. 346 gives also side and front views of a fine head.

known caribou. In the Ellesmere Land specimens the pelage is less soft, but in these the coat is thinner and more worn, as they were killed just before the season of moult, which takes place in July.

As shown by the subjoined table, 15 of the largest and oldest male skulls of *R. pearyi* (all adult, with well-worn teeth) have an average total (condylo-basal) length of 303 mm., ranging from 257 to 335 mm., the smallest being one of the oldest of the series, with the teeth most worn. The same length in a series of 7 old male *R. arcticus* is 363 (345–397) mm., and for 3 old female skulls of *arcticus* 320 (303–337) mm., or considerably more than the males of *pearyi*. Three male skulls of *grønlandicus* average 368 (361–375) mm., or slightly more than the 7 skulls of *arcticus*, with slenderer, less palmated, and more recurved antlers.

In *R. pearyi* the main beam of the right antler in old males has an average length of 1019 mm., the longest measuring 1205 and the shortest 826, with 4 above 1100 mm. and 3 below 900 mm. In 7 *R. arcticus* the same average measurement is 1200 mm. (1062–1505), and in *R. grønlandicus* 1141 (1063–1246) mm. Thus the average in *arcticus* and *grønlandicus* about equals the maximum in *pearyi*.

In *R. pearyi* the antlers have a much greater upward curvature than in *arcticus*, in proportion to their length; those of the latter being remarkable for their long, low, backward sweep and slight divergence, although occasionally a specimen departs from this normal and approaches the curvature and divergence seen in *grønlandicus* and *pearyi*. Figures 1–6 illustrate the types of antler seen in *pearyi*, and Figs. 7–10 the variation seen in two fine heads of *arcticus*, one of which presents the unusual feature of two large and equally developed brow antlers, one on each antler, directed one above the other, thus avoiding contact. An average adult skull of the female of *R. pearyi* is shown in Figs. 11 and 12.

The inward curvature of the distal third of the main beam in *R. pearyi* is especially marked, the distance between the tips being, in one third of the specimens, less than 150 mm., and in one specimen (Figs. 11, 12) they actually cross to the extent of 60 mm. The greatest spread (at point of palmation of main antlers) equals about one half to two thirds the length of the main beam. In 7 specimens the brow antler is developed from the right antler, in 8 others from the left. The brow antler increases in size with the age of the animal, being longest and broadest in very old animals and not well-developed in males that have just fully acquired the permanent dentition. In general the antlers are broader in all of their palmated parts, in proportion to their size, than in either *arcticus* or *grønlandicus*.

A feature of interest in these skulls is the large amount of individual variation. One male skull, and also one female skull, has two well-developed canines on the same side, both of normal size, the supernumerary

one standing in front of the other in a small piece of intercalated bone. There is the usual wide range of individual variation in the form and relative development of the various elements of the skull seen in other species of deer when large series of skulls are brought together for comparison. This is especially noticeable in the size and form of the nasal bones and lachrymal fossæ, and in the relation of the ascending branch of the premaxillaries to the maxillaries, etc., the same wide range of individual variation prevailing in this species as in *Odocoileus sinaloa*, illustrated in a former paper.¹ A rather unusual feature is a false suture, outlining what at first sight seems to be an intercalated bone to fill the space between the ascending branch of the premaxillary and the maxillary, but the suture is superficial, appearing on the outer surface and usually not extending very deeply into the bone.

According to the experience of most travellers on the Arctic mainland, the so-called Barren Ground Caribou is a migratory animal, leaving the coast at the approach of winter and moving southward in great herds, to return northward again in the spring. This, however, does not appear to be the habit of the Grant Land Caribou, according to Commander Peary's notes on them in his 'Nearest the Pole' (New York, Doubleday, Page & Co., 1907). Thus, in referring to one of his hunting parties, he says: "After dinner [September 11, 1905], three Eskimos came in with the meat of four musk-oxen killed in Rowan Bay, and in the evening the Porter Bay party returned with the meat and skins of seven reindeer killed in a valley on Fielden Peninsula. These, the first specimens of this magnificent snow-white animal, were from a herd of eleven surprised in a valley close to Cape Joseph Henry, and among the seven was the wide-antlered buck leader. These beautiful animals, in their winter dress almost as white as the snow which they traverse, were found later scattered over the entire region from Cape Hecla to Lake Hazen, and westward along the north Grant Land coast, over fifty specimens in all being secured" (*l. c.*, p. 57). Later in the season "hunting parties of the Eskimos were kept constantly in the field, covering the country north to Clements Markham Inlet and south to Wrangel Bay and Lake Hazen. The results of these parties were satisfactory, considerable numbers of musk-oxen and reindeer being secured" (*l. c.*, p. 60). By October 1, the "game score reached seventy-three musk-oxen and twenty-seven reindeer." Other bags, comprising reindeer as well as musk-oxen, are reported as received October 25 and November 8. Under date of December 16 it is stated (*l. c.*, p. 84): "Two large buck reindeer were found on the southern slopes of the United States Range with their horns locked, frozen in a death struggle."

¹ This Bulletin, XXII, 1906, pp. 203-207, pls. xx-xxvi.

During Commander Peary's survey of the northern coast line of Grant Land, he states that late in June, 1906, on reaching Cape Hubbard, the northern point of Jesup Land (Heiberg Land of Sverdrup), he came immediately upon the recent tracks of six deer, and in just thirty-five minutes from the time he landed, his party had captured two deer and a hare. He says of these: "Both were does, neither pregnant, nor very large, and very thin though evidently putting on flesh, the skin of course in bad condition and antlers in the velvet. A very noticeable feature was the length of the hoofs, and the development of the dew claws into regular spoons as large as a hare's ears, thus giving the deer natural snowshoes, which they need in this country not only for the snow, but for the boggy saturated ground as well, at this time of year" (*l. c.*, p. 205). On June 29, at the same place: "At 2 P. M. the men returned. They found at close quarters that the three deer seen from the summit of the cape [Cape Hubbard] had increased to six and a fawn, all of which were secured (three bucks and three does)" (*l. c.*, p. 208). Two days later, on the Garfield coast, at the northwest corner of Grant Land, Commander Peary saw a deer grazing and sent the boys to bring it in, "which they did in about an hour (a buck with small horns in the velvet). This made twelve obtained thus far. A fresh track was seen between the tent and the sledge which we left; and another deer was seen on the opposite side of the bay" (*l. c.*, p. 210).

These references show that reindeer, or caribou, were present about July 1 on both sides of Fridtjof Nansen Sound, which was still so well closed with ice that Peary and his party crossed on the ice from Grant Land to Jesup Land and returned in safety at this late period in the season; which shows that during most of the year Nansen Sound must be here passable for caribou, and that the herds of Jesup Land (or Axel Heiberg Land) and Grant Land are practically the same herd. They also show that his hunting parties found both males and females commonly associated in the same herd, both in autumn (September-November) and in June and July; and that in winter as well as in summer caribou were met with practically to the northern border of the most northern of arctic lands.

Measurements of Skulls of Rangifer arcticus and R. groenlandicus.

	R. ARCTICUS						R. GROENLANDICUS.								
	22936	22985	22986	9498	19499	19500	19501	19505	19502	19503	10244	10195	10197	14236	14237
	♂	♂	♂	♂	♂	♂	♂	♀	♀	♀	♂	♂	♂	♀	♀
Total length (condylo-basal).....	397	370	375	345	348	355	345	337	322	303	368	375	361	305	—
Tip of premaxillæ to tip of nasal.....	122	101	114	105	91	116	97	85	87	91	115	113	109	84	—
" " " alveolus of p ¹	143	135	131	114	120	124	121	108	106	105	138	122	119	99	—
Length of nasals.....	140	132	149	102	117	109	114	89	96	98	109	110	94	97	95
Breadth above m ¹	147	119	105	104	112	112	106	96	98	97	119	112	116	104	103
Zygomatic breadth.....	146	136	134	134	133	134	132	112	125	126	139	141	144	126	127
Greatest breadth at orbits.....	178	165	169	163	165	162	158	147	153	147	173	163	169	152	154
Mastoid breadth.....	139	131	128	125	131	126	132	96	103	102	132	125	129	101	106
Palatal length.....	251	242	235	215	220	215	220	200	198	193	220	237	237	—	—
Palatal breadth at m ²	64	64	59	59	58	58	58	53	55	53	71	63	67	56	55
Upper toothrow, crown surface.....	94	92	93	90	84	93	90	82	88	89	99	99	89	81	83
Length of mandible, incisive border to angle.....	312	295	290	272	272	283	280	250	255	240	276	275	284	256	247
Angle to tip of coronoid.....	145	123	136	134	131	135	126	118	120	115	138	149	145	115	123
Depth at m ¹	36	31	33	31	33	36	32	28	30	29	25	34	33	28	33
Length of lower toothrow.....	96	92	102	92	93	97	95	87	93	93	—	95	103	96	91
Diastema.....	122	116	103	105	101	107	101	93	88	86	103	95	100	87	87
Antlers, main beam to tip, along curvature.....	1505	1235	1210	1175	1100	1062	795	340	275	245	1063	1115	1246	400	275
" " greatest spread at point of palmation.....	1060	665	757	587	750	440	443	190	—	—	1020	918	993	255	—
" " distance between tips of longest tines.....	625	315	533	400	498	200	423	168	—	—	775	533	560	—	—
" " " " points at tip of main beam.....	725	286	567	287	640	333	340	222	250	—	725	650	690	65	—
" " length of brow antler, ventral border.....	320	315	287	275	265	335	250	—	—	—	328	293	305	—	—
" " breadth of " " (transverse).....	226	197	167	190	139	250	183	—	—	—	120	190	195	—	—
	s. w.	im. w.	im. w.	s. w.	im. w.	s. w.	im. w.	im. w.	im. w.	im. w.	im. w.	unw.	s. w.	im. w.	im. w.

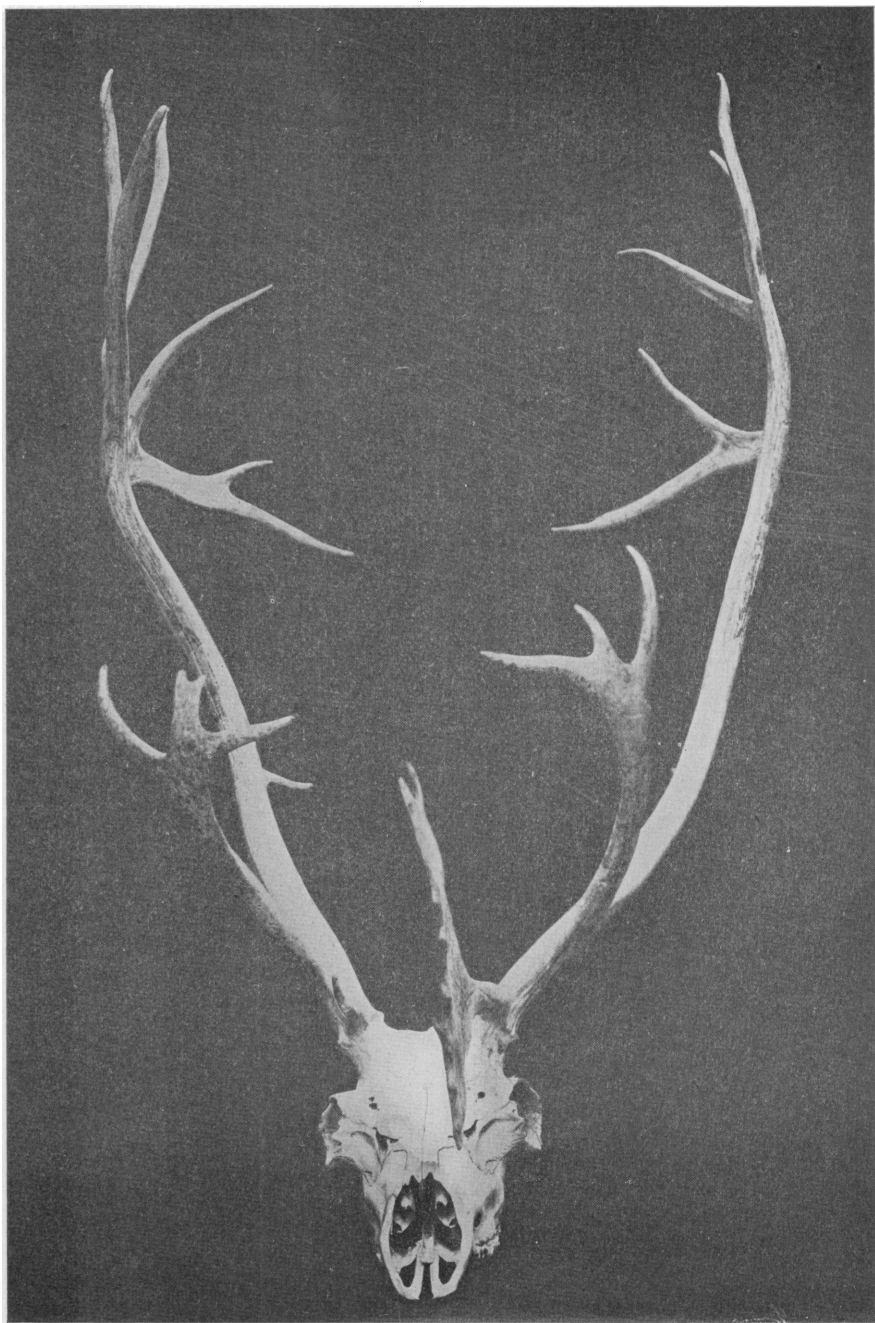


Fig. 1. *Rangifer pearyi*. No. 27987, near Lake Hazen, Grant Land, October, 1905; Commander R. E. Peary. About $\frac{1}{2}$ nat size. Antlers of average size and form.

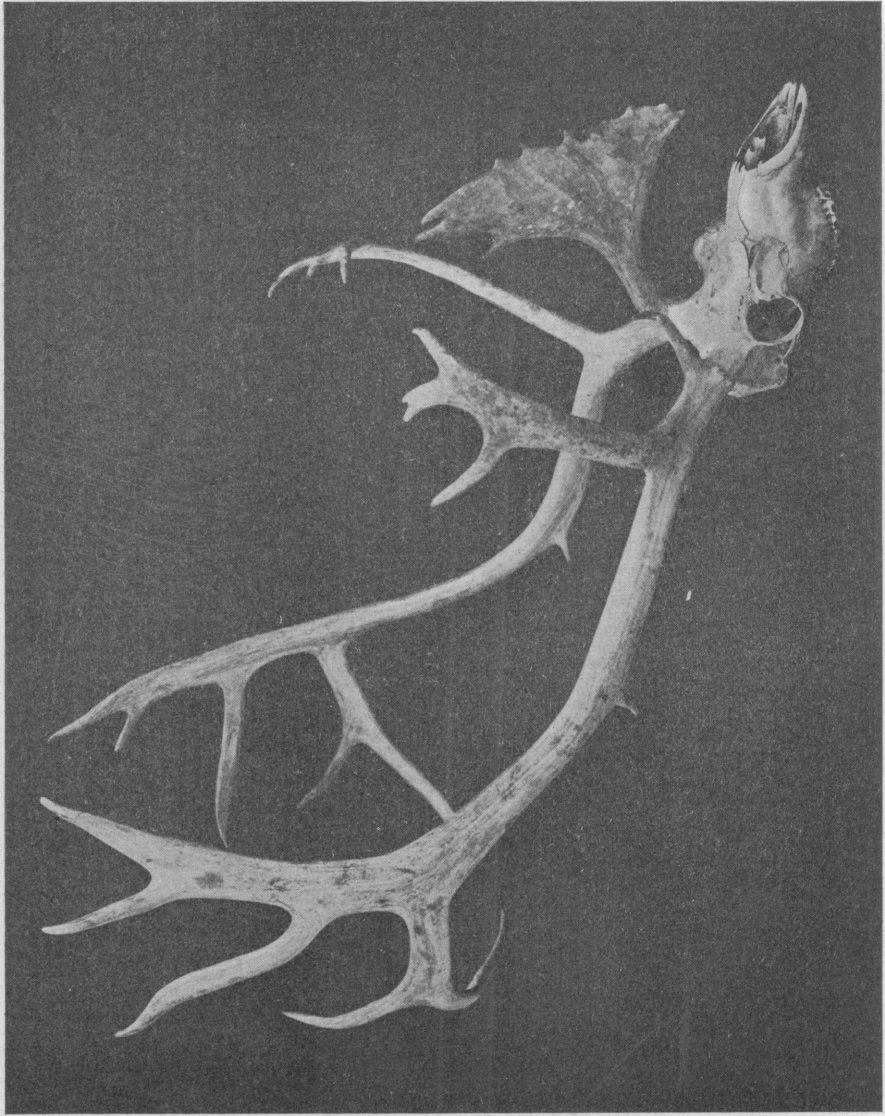


Fig. 2. *Rangifer pearyi*. Slightly oblique view of specimen shown in Fig. 1.

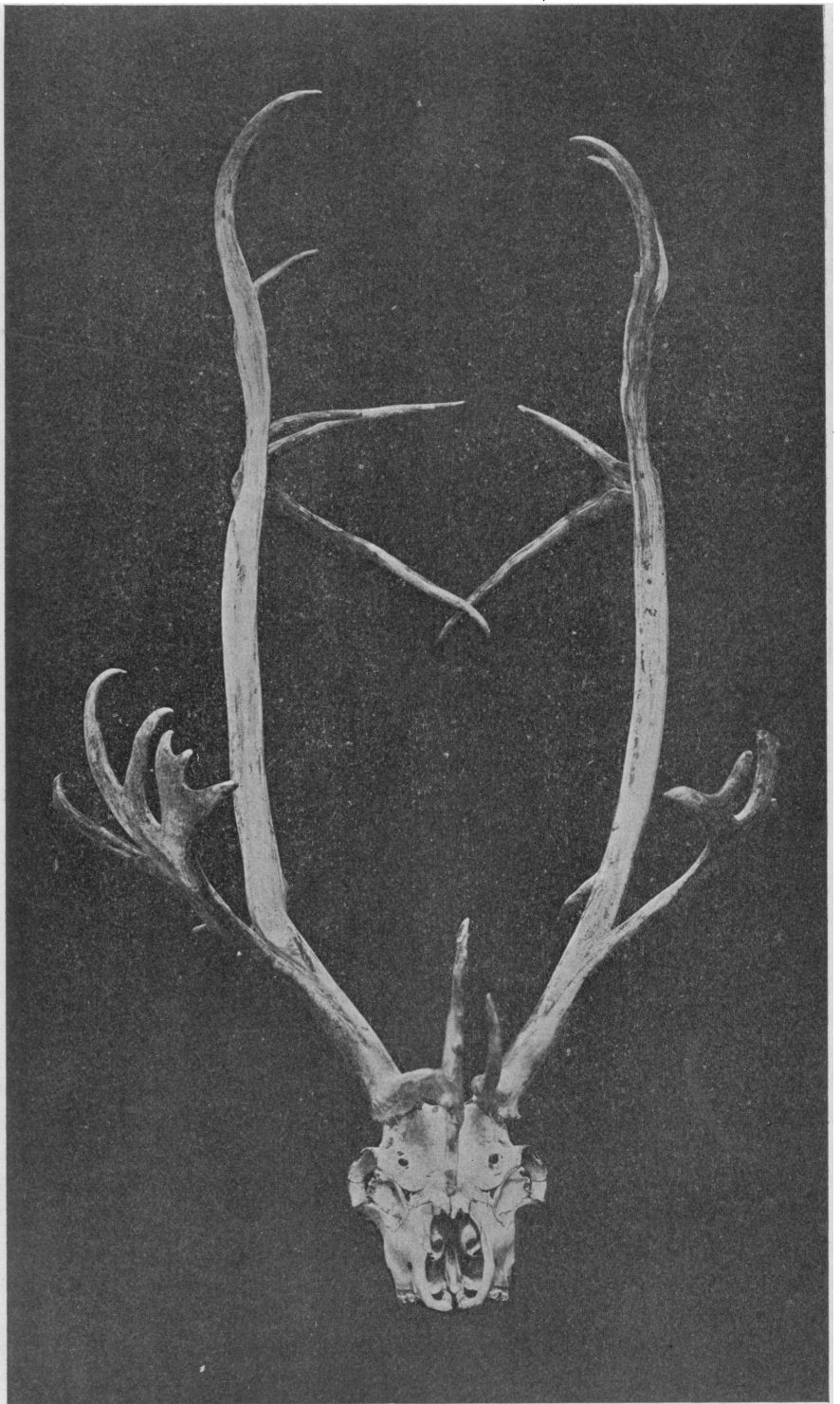


Fig. 3. *Rangifer pearyi*. No. 27958, near Lake Hazen, Grant Land, October, 1905; Commander R. E. Peary. About $\frac{1}{4}$ nat. size. Spread of antlers exceptionally narrow.

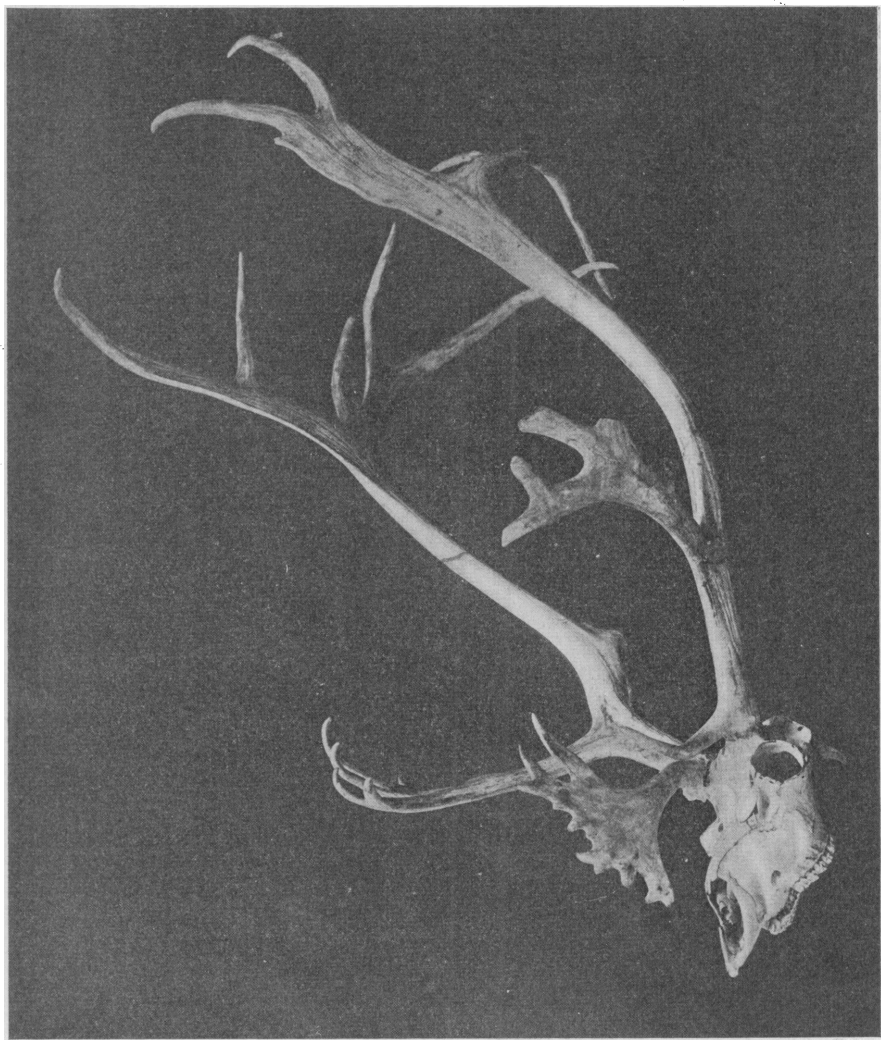


Fig. 4. *Rangifer pearyi*. Same specimen shown in Fig. 3.

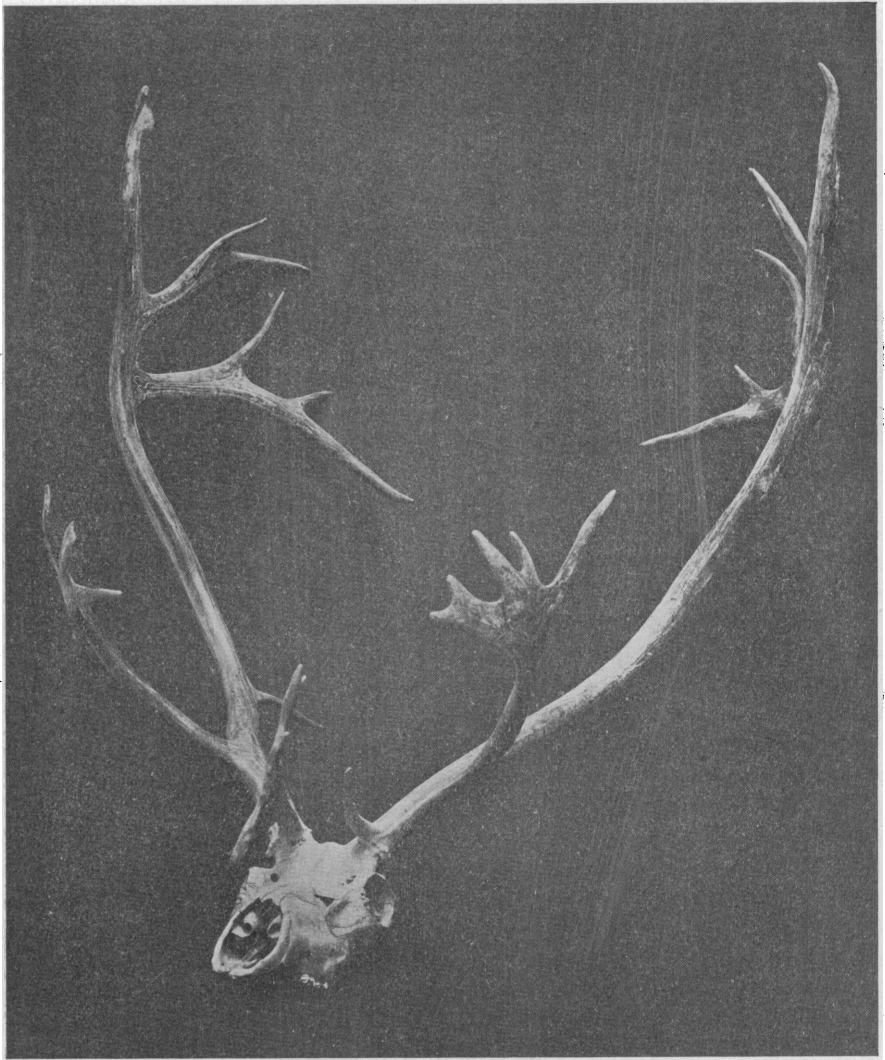


Fig. 5. *Rangifer pearyi*. No. 27939, near Lake Hazen, Grant Land, October, 1905; Commander R. E. Peary. About $\frac{1}{2}$ nat. size. Antlers unusually divergent. (Compare with Fig. 3, showing unusually narrow spread, and with Fig. 1, of average or normal spread.)

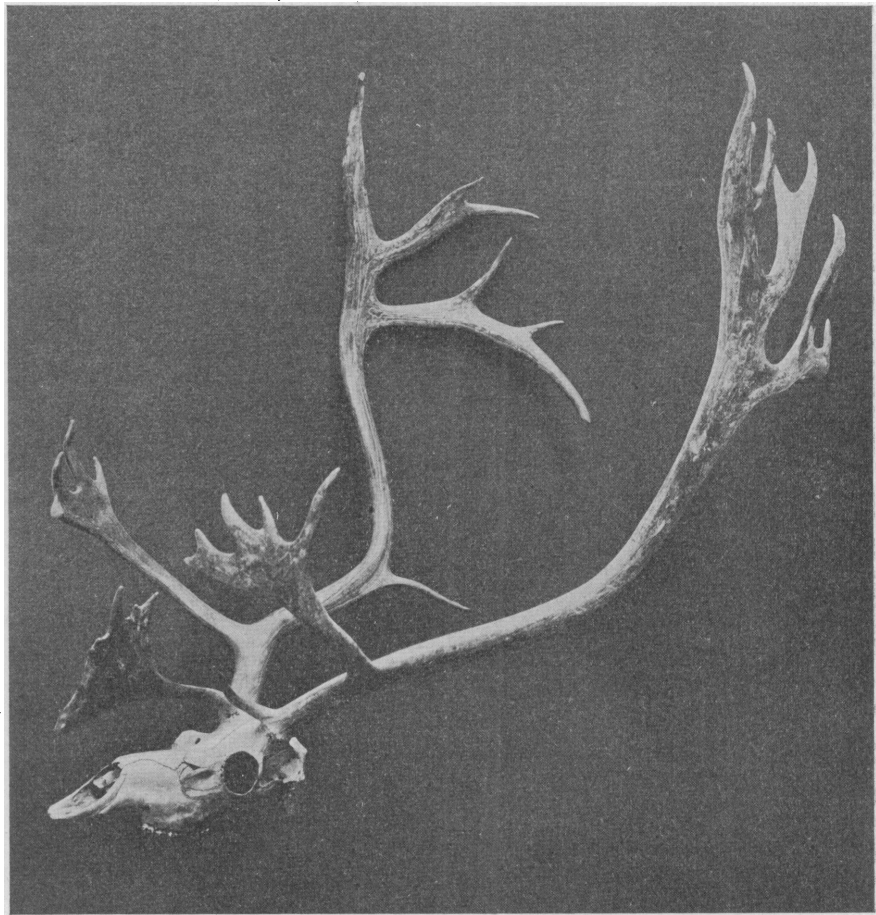


Fig. 6. *Rangifer pearyi*. Slightly oblique view of specimen shown in Fig. 5.

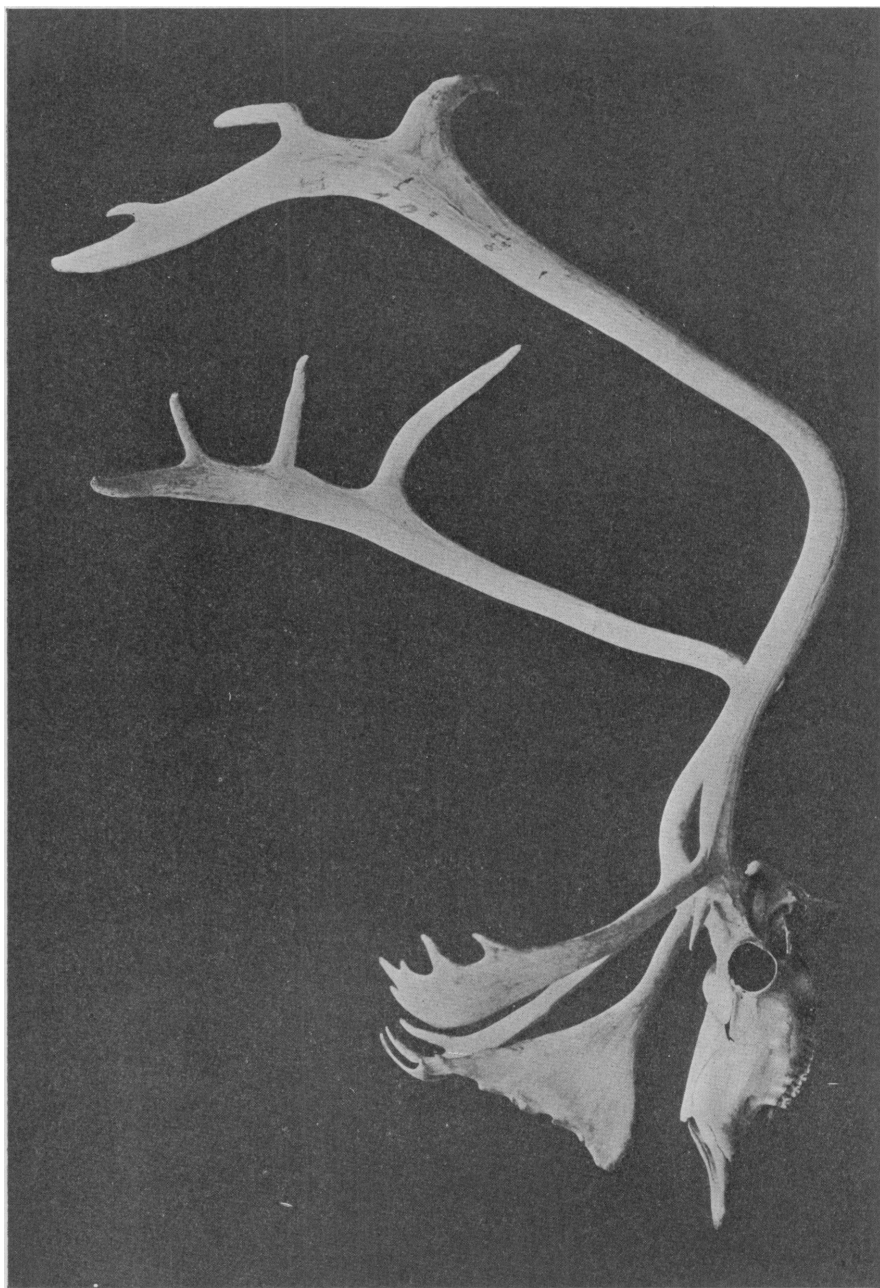


Fig. 7. *Rangifer arcticus*. No. 22936, Wager River, northwest coast of Hudson Bay; Captain George Comer. About $\frac{1}{2}$ nat. size. Antlers of average size and form.

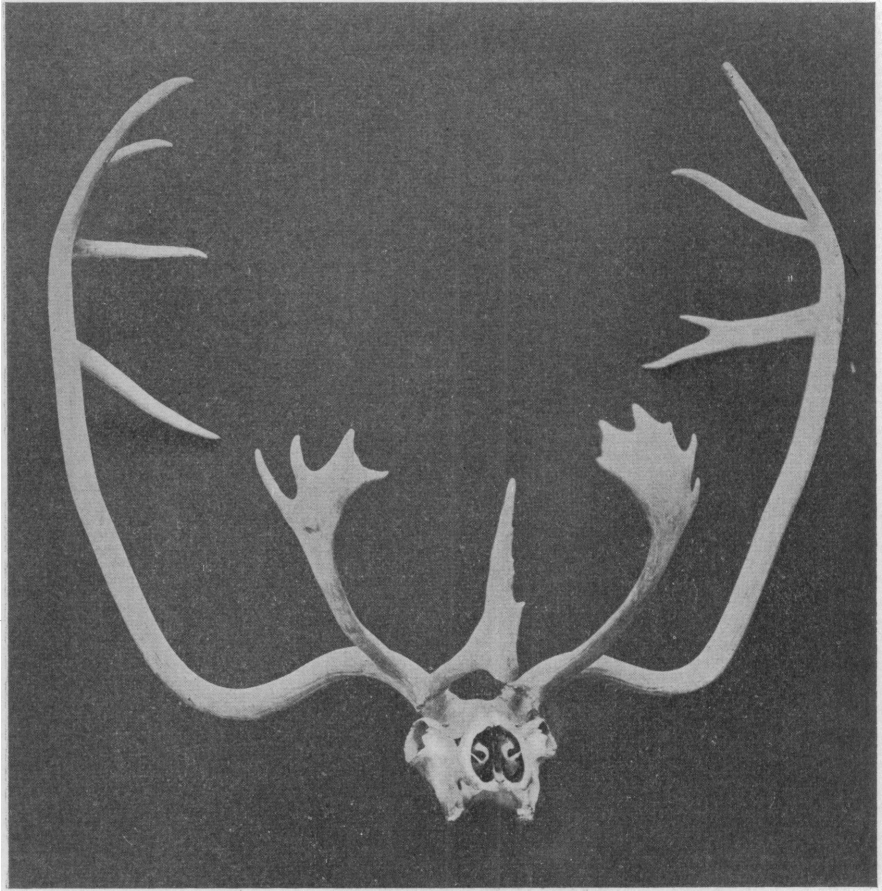


Fig. 8. *Rangifer arcticus*. Front view of specimen shown in Fig. 7.

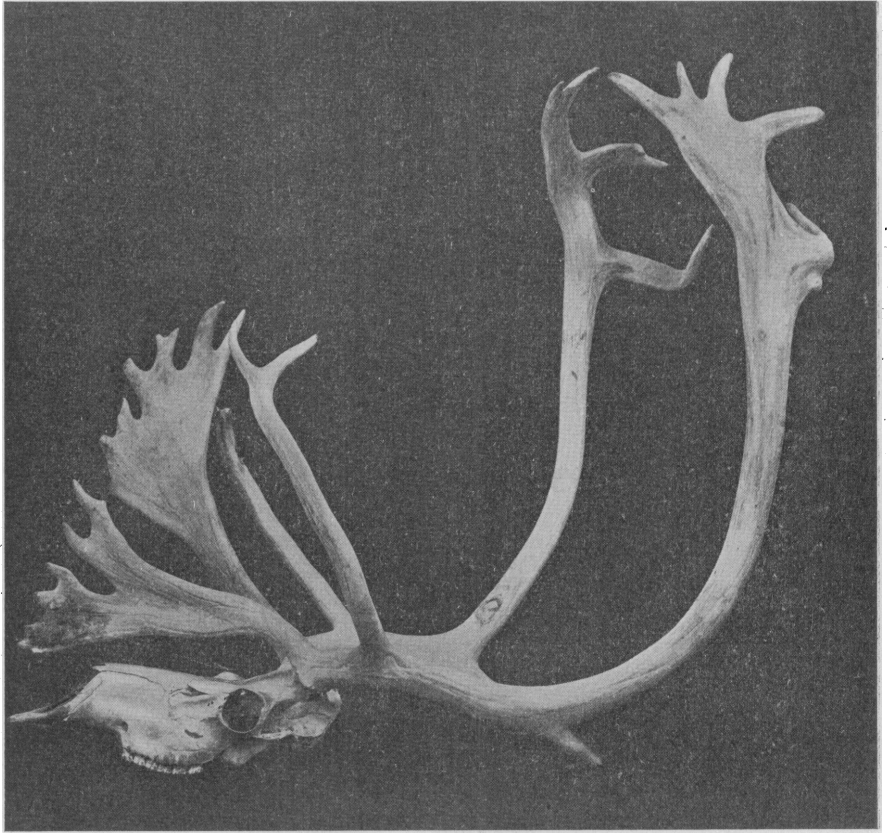


Fig. 9. *Rangifer arcticus*. No. 22985, Wager River, northwest coast of Hudson Bay; Captain George Comer. About $\frac{1}{4}$ nat. size. A brow antler from both right and left antlers.

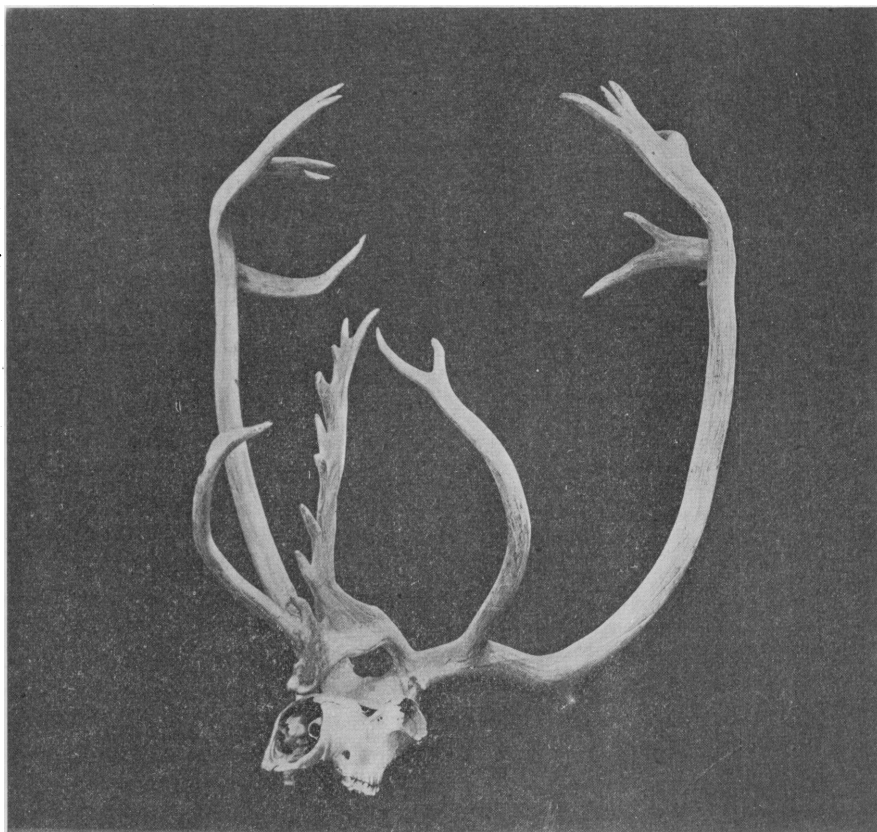


Fig. 10. *Rangifer arcticus*. Nearly front view of specimen shown in Fig. 9.

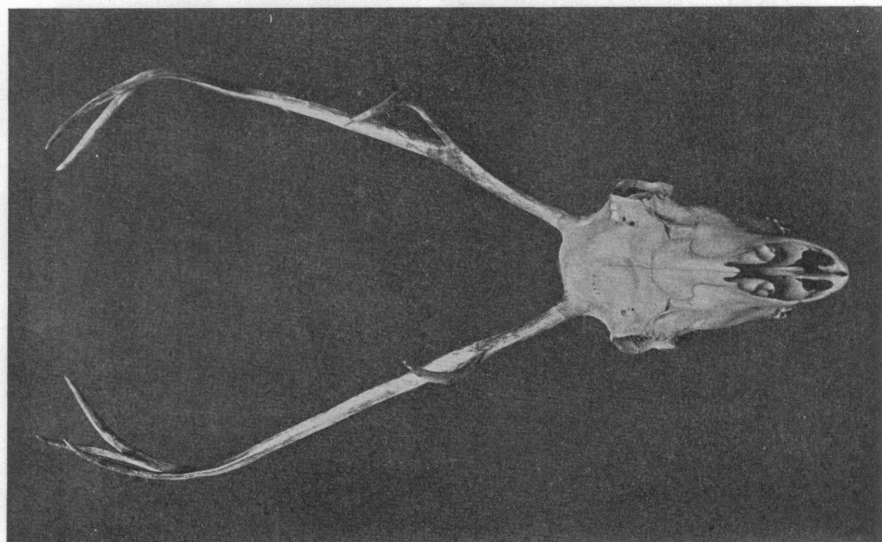


Fig. 11.

Fig. 11. *Ranotier pearii*. No. 27914, adult female near Lake Hazen, Great Land, October, 1909. (Continued on p. 505)

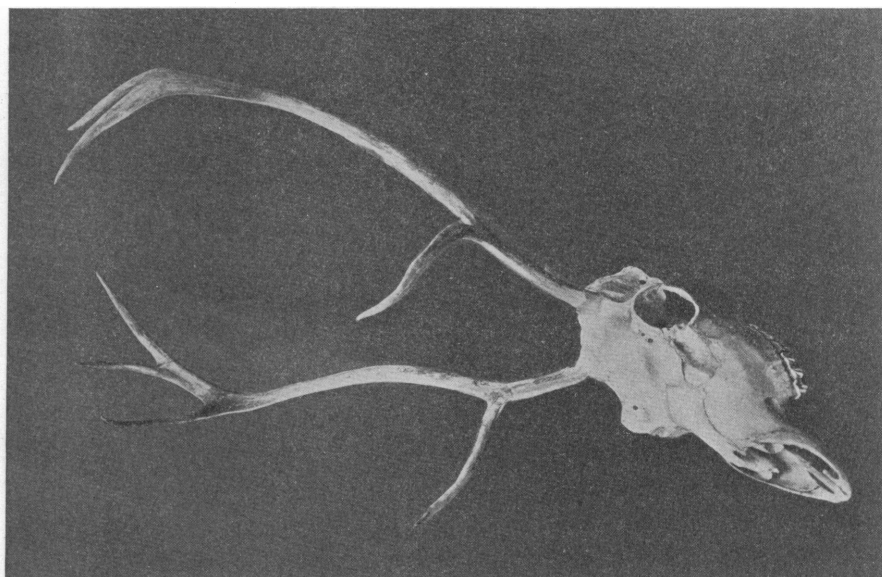


Fig. 12.

Fig. 12. *Ranotier pearii*. No. 27915, adult female near Lake Hazen, Great Land, October, 1909. (Continued on p. 505)