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Article XVI.— THE WHITE BEAR OF SOUTHWESTERN BRITISH COLUMBIA.

By J. A. Allen.

The Museum has recently secured two fine specimens of the Inland White Bear (*Ursus kermodei* Hornaday),[1] taken on Gribbel Island, B. C., the type locality of the species. They were killed between October 1 and 10, 1908, and are thus in excellent fall pelage. One is an old female, as unmistakably shown by the skin, with an imperfect skull, only the rostral portion, with the dentition, being preserved. The other is somewhat younger, though fully adult, and is apparently a male; the skull is nearly complete, lacking only part of the left zygomatic arch.

These specimens were obtained through the courtesy of Mr. F. Kermode, Curator of the Provincial Museum, Victoria, B. C., who has also kindly transmitted to the Museum, through Mr. Roy C. Andrews, Assistant in Mammalogy, a list of all the specimens of this bear known to him to have been captured during the last ten years, together with a map marked to show the localities of capture. He has also sent for examination the very imperfect skull of the type specimen, another complete skull, and the rostral portion of another. For these important favors grateful acknowledgments are hereby tendered.

These specimens differ considerably in color from the type of the species, which was described as "clear, creamy white, with no trace of brown, black or any other dark color," both having the whole top of the head yellowish rufous, with the back, in one of the specimens, conspicuously varied with bands and irregular patches of bright golden rufous. These specimens may be described as follows:

No. 34492, an old female. Whole top and sides of the head, from the front border of the eyes posteriorly, dark orange buff, the color where deepest extending to the roots of the pelage. The color of the top of the head extends along the nape to the shoulders as a fairly well defined median stripe, narrowing and fading posteriorly, and gradually blending with the general strongly yellowish white of the body. Over the mid-dorsal area the superficial yellowish white color deepens below the surface to orange buff and extends nearly to the roots of the hair. The vaginal tuft is bright yellowish rufous, of nearly the same shade as the top of the head. Limbs more strongly tinted than the body.

No. 34993, adult (probably male). In this the head is brighter and more ru-

[1] Ninth Ann. Rep. New York Zoöl. Soc. (for 1904), pp. 81–86, with 2 half-tone pll. Published January, 1905.

fous than in the other; the median band from the occiput extends to the middle of the back, darkening over and just behind the shoulders to deep rufous, in some lights almost chestnut rufous, and thence continues, but less distinctly defined, as far as the loins, lightening in tint to yellowish orange. There are also ill-defined longitudinal bands of yellowish orange on the sides of the body, which deepen in

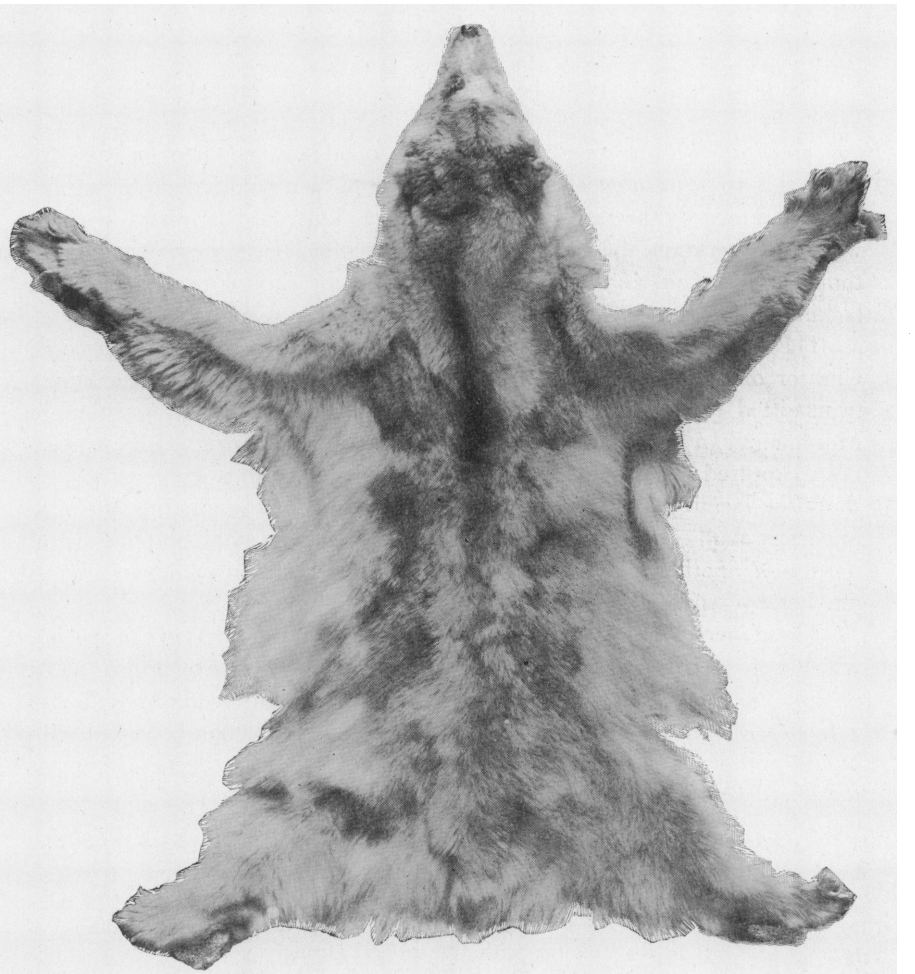

Fig. 1. *Ursus kermodei*, No. 34993, ♂ (?), Gribbel Island, British Columbia, October, 1908.

places to orange, forming a number of irregular patches. These markings are rather more distinct on the left side, where there are two of these lateral bands, than on the right. The general tendency of these bands is to form a pattern composed of three longitudinal stripes, the outer one on the right rather broad and not well defined, and on the left divided into two. (Fig. 1.)

The color of these specimens is hard to describe, as it varies with the angle of reflection of the light. For this reason when the skin of the female is placed crosswise to the light, the further half of the skin, in which the hair slopes from the light, looks creamy white, while the side toward the light, with the hairs directed toward it, is deep buff, a darker median space separating the two sides. When placed lengthwise, with the head towards the light and the hairs laid smooth, the whole dorsal surface, from the head posteriorly, is uniform deep creamy white, without any color pattern. When the male skin is placed crosswise to the light the ground color is nearly pure white, with the color pattern perfectly distinct, as it is also when the skin is placed lengthwise or crosswise to the light. With the head from the light, and looking at the skin from the side, the median line over the anterior half of the body is darker and richer, appearing dark orange rufous. Seen from in front looking towards the light the general color is much lighter but the markings remain perfectly distinct.[1] Where the markings are well developed the rufous color always extends to the base of the pelage.

In the male there is a very small tuft of blackish-tipped hairs on the median line behind the shoulders.

Ursus kermodei has always been described as clear creamy white to the roots of the hair. In the present specimens the color of the head is distinctly different from that of the body, and the basal portion of the pelage on the body is strongly suffused with buff, ranging in tint from pale buff to orange buff, and on some parts to orange rufous. The type and the other specimens in the mounted group in the Provincial Museum, Victoria, were taken in May; the present specimens, in October. It is, perhaps, reasonable to suppose that the buffy suffusion so conspicuous in October specimens may become somewhat faded later in the season; but the rich rufous tint of the head could hardly thus disappear.

So far as the pelage is concerned, these skins might readily be looked upon as albinistic examples of a normally dark-colored bear. The skull, however, presents distinctive characters of some importance, warranting the recognition, for the present at least, of *Ursus kermodei* as a strongly marked form, and possibly as a 'good species.'

The skull of the type was very imperfect (*cf.* Hornaday, *l. c.*), consisting of only a part of the rostrum and front part of the lower jaw, showing the dentition but not the general form of the skull. The teeth, as stated by Dr. Hornaday, "indicate relationship to the American Black Bear." In fact, the five specimens before me showing the dentition, present no tangible differences in the teeth from the Black Bear of the Kenai Peninsula, Alaska,

[1] In taking the photograph shown in Fig. 1, the light was equalized from both sides.

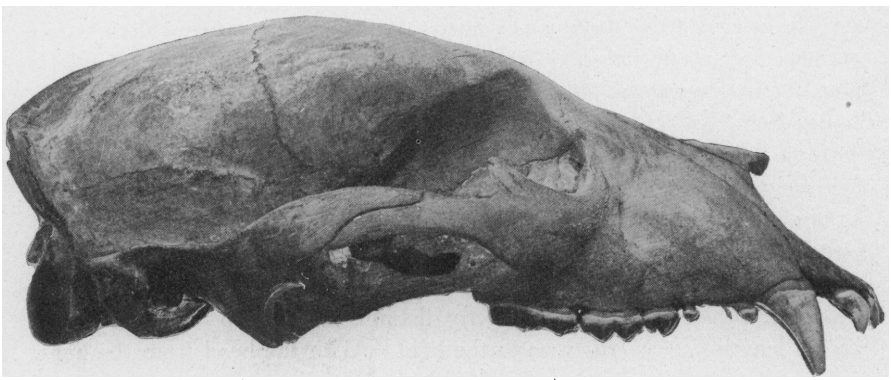

Fig. 2. *Ursus kermodei*, No. 34993, ♂ (?), Gribbel Island, British Columbia. ⅛ nat. size.

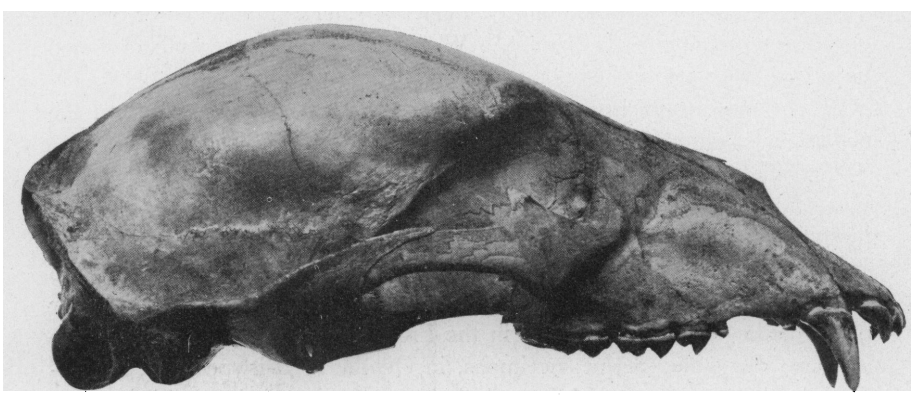

Fig. 3. *Ursus kermodei*, ♀. Gribbel Island, B. C. (Specimen in Provincial Museum, Victoria, B. C.) ⅛ nat. size.

Fig. 4. *Ursus americanus*, No. 16707, ♀, Kenai Peninsula, Alaska. ⅛ nat. size.

either in size or form. There is, however, a striking difference in the dorsal outline of the skull, which in Alaska specimens is nearly flat, but strongly convex in *U. kermodei,* the point of greatest height being at or slightly in front of the fronto-parietal suture, as shown in the accompanying illustrations (Figs. 2–4). The size of the skull in specimens from Alaska and Gribbel Island, strictly comparable as to age and sex, is nearly the same in both series, as shown in the subjoined table of measurements. So far as present material is available, *U. kermodei* is slightly smaller than the Alaska Black Bear, with a relatively narrower and longer skull, longer and narrower nasals, with the dorsal outline of the skull notably more convex. It differs from *U. carlottæ* in much smaller size, and in important cranial characters.

Measurements of Skulls.

	U. kermodei.			U. americanus.		
		34993[2]	34992[3]		17789[5]	16708[6]
	♀[1]	♂?	♀	♀	♂	
Total length	243	240	—	250	245	250
Condylobasal length	214	223	—	220	250	213
Palatal length	121	133	—	123	125	126
Zygomatic breadth	134	135	—	145	—	143
Interorbital breadth	53	56	—	61	54	51
Across postorbital processes	75	79	—	84	79	73
Mastoid breadth	100	113	—	113	—	108
Palatal breadth at m^1	36	39	—	40	35	38
Length of upper tooth row (including canine)	87	91	97	92	96	90
Length of p^4–m^2	52	54	52	51	57	49
Length of last molar	25	25	25	25	27	23.3
Greatest breadth of last molar at cingulum	13.5	15	13.2	13.5	15	13
Length of lower jaw (front border to condyle)	167	174	—	173	172	162
Height, angle to top of coronoid	64	72	—	69	69	61
Length of lower toothrow (including canine)	99	104	107	104	104	102
P^4 to m_3	51.5	61	55	58	60	56
Length of m_2	17	19	17.5	17	19	17.5
Greatest width of m_2	10	11	11	11	12	11.4

The known range of *Ursus kermodei,* as shown from the information kindly furnished by Mr. Kermode, extends from the lower part of South Bentinck Arm, Bella Coola River (lat. 52°), north to Nass Bay, at the head of Portland Inlet (lat. 55°), and from Aristazable, Princess Royal, Gribbel, and Pitt Islands, on the coast, to a considerable distance into the interior. Mr. Kermode's records are as follows:

[1] Gribbel Isl.. Provincial Museum, Victoria, B. C., ♀.
[2] Gribbel Isl., Amer. Mus. No. 34993, ♂ (?).
[3] Gribbel Isl., Amer. Mus. No. 34992, ♀.
[4] Kenai Peninsula, Alaska, Amer. Mus. No. 16707, ♀.
[5] Kenai Peninsula, Alaska, Amer. Mus. No. 17789, ♂.
[6] Kenai Peninsula, Alaska, Amer. Mus. No. 16708, sex ?.

"Lindley and Foster of this city [Victoria] had two specimens in 1898 or 1899 from Gribbel Island; they were sold to some parties in England.

"Dr. W. T. Hornaday, of New York, bought one specimen from Boskowitz, a fur dealer in this city, in 1900, said to have come from Nass River.

"The type specimen, female, Provincial Museum, was killed on Gribbel Island in May, 1904.

"Two young cubs, male and female, in Provincial Museum, were killed at Kanoon River, Princess Royal Island, May, 1904.

"Another specimen, young male, Provincial Museum, was killed on Gribbel Island, May, 1906.

"Another specimen, Provincial Museum, killed on Gribbel Island, 27th May, 1907.

"The Rev. T. Collinson, of this city, also has one, that I have seen, said to have been killed on the Nass River about 1904.

"Mr. James Findley, of Vancouver, has another, that I have seen at his home, killed near his mine on Princess Royal Island, June, 1903.

"The two specimens recently sent by Mr. Lindley, of this city, to the American Museum of Natural History, New York, were killed on Gribbel Island between the 1st and 10th of October, 1908, as I had a letter from C. A. Robinson, Hartley Bay, on October 10, informing me of two that he had in his possession that had just been killed on Gribbel Island."

"There is still another specimen, not in fit condition for mounting, in the possession of Mr. Lindley, that was killed in the summer of 1908 .... up the coast, and must have been killed at this same locality ....

"In June, 1908, two friends of mine, P. Jacobson of Bella Coola, and C. A. Fields of this city, who were out timber cruising on South Bentinck Arm, saw one of these bears and were only thirty yards from it. I have seen both of them personally and both give the same account of it, so I believe it to be true.

"I have also heard from Dr. Holland, of the Carnegie Museum of Pittsburgh, that they have one in their Museum at the present time ....

"The late Robert Cunningham, a trader in furs, and who kept a large store at Port Essington for a great many years, told me that he had one or two of the white bears every year.

"Mr. George Robinson, missionary at Kitimat, who has lived in that vicinity for between sixteen and seventeen years, and traded with the Indians, says also that he has had some of these bears nearly every year. Mr. Robinson when in this city about two weeks ago [about Jan. 6, 1909,] left word that he has another in his possession killed this last fall."

Mr. Kermode refers further to two white bears seen last November on Pitt Island, and to two others killed in the mountains of Khutze Inlet in the fall of 1904; also to one killed on Swindle Island in 1902.

It is of interest to add that Mr. Kermode, in reply to inquiries as to the presence of other bears within the range of *U. kermodei*, states: "On the islands where the White Bear is found, Black Bears are also fairly common," and that "on the mainland Grizzly, Black, and the brown phase [of the Black] are found at the same localities as the white ones."