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Memorandum to Mr. Palmer

Nome, Alaska
March 31, 1930

NUNIVAK ISLAND CARIBOU REINDEER ROUNDUP
1929

Loaned to Mr. R. E. Griffith, Section of Habitat Improvement
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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF BIOLOGICAL SURVEY

IN REPLY REFER TO

Memorandum to Mr. Palmer

Veterans' Hospital
Walla Walla, Washington
May 25, 1931

NUNIVAK ISLAND REINDEER-CARIBOU ROUNDUP 1930

On September 1, 1930, with two native assistants Albert Aukon and Billy Komakak from Golovin, Alaska, I boarded the S.S. Arthur J. Baldwin at 5 P.M. leaving Nome 11:30 P.M. enroute Nunivak Island. It had been hoped to get transportation direct to Nunivak in latter July from the Kuskokwim Region upon completion of range examination work there. A set of three Burdizzo castration pincers had been sent to Nunivak from the States early in the summer for use in the roundup work.

However as transportation had not been available from the Kuskokwim Region it had been necessary to return to Nome and from there to take the boat to Nunivak. While in Nome looking for means of transportation to Nunivak Island it was learned that three men, namely; Messrs, Shannon, Sully, and Gottschalk had procured a small boat, the "New York" of about six ton net capacity and were planning occupation of Nunivak Island presumably for trading operations about Etolin Straits.

Upon first interview, Messrs Shannon and Sully had not mentioned that Mr. Gottschalk was with them in the enterprise. I had explained to them that Nunivak Island had been established by Executive Order dated April 15, 1929 as a reservation and set apart for use of the Department of Agriculture in conducting experiments. And that it would be necessary for them to first procure permission from the Secretary of Agriculture. Otherwise that their occupancy of Nunivak would doubtless be considered as trespass.

It was then learned that these men were working under the incentive and initiative of Mr. Max Gottschalk, who with Messrs Warner and Brown had trespassed on St. Matthew Island in 1927-28 and who in process of court trial had been compelled to release furs unlawfully obtained there. Mr. Gottschalk also had a record of numerous other court trials. Enroute from

St. Matthew Island to the Kuskokwim Region aboard the motor sailer "Husky" with the contraband fur in 1928 Mr. Gottschalk had been about Nunivak Island with Messrs Brown and Warner contemplating extending operations there. However their plans were broken by the subsequent court proceedings in which Mr. Brown owner of the "Husky" was against Messrs Gottschalk and Warner.

When it was learned that Mr. Gottschalk was planning this expedition with the owners of the "New York" I therefore gave him notice through the U.S. Marshall's Office in Nome, of the status of Nunivak Island as a reservation and informed him that occupation there without first securing permission from the Secretary of Agriculture would doubtless be considered as trespass.

Mr. Gottschalk then told me that they intended to go to Nunivak never-the-less. But that they would probably occupy one of the very small unnamed islands adjacent to Nunivak. (These small islands are really a part of Nunivak Island and generally contiguous with the main island at low tide.)

My assistants and I were landed at the abandoned native village of Tachyhuimuit southward of Cape Mohican on Nunivak Island 7 A.M. September 3. A native family was camped at this place while fishing. From this camp, accompanied by a native guide, we crossed Nunivak Island arriving at Nash Harbor a distance of 20 miles at 6 P.M.

While at Nash Harbor I learned that Mr. Brown, owner of the motor sailer "Husky" of Seattle, had spent the previous winter (1929-30) with his boat in a small lagoon, Talungmiut, almost directly south of Nash Harbor on the southwest shore of Nunivak Island. Mr. Brown, with this same boat, accompanied by Messrs Max Gottschalk and Perry Warner trespassed on St. Matthew Island in 1927-28.

During the spring of 1930 Mr. Brown had left Nunivak Island. No one knows just where he contemplated going, but he had spoken of going southward about the Aleutian Peninsula. He had not been seen since. He carried some trading goods in his 50 foot boat and did some trading while on Nunivak Island.

On September 4, we tried to secure a boat at Nash Harbor with which to go around Cape Mohican for our equipment and thence to Mekorryok reindeer camp but none were available. We therefore walked to Mekorryok a distance of approximately 40 miles, arriving there 2 P.M. September 6.

Both native field assistants with me had received thorough training in the operation of Burdizzo castration pincers on reindeer from Dr. W. E. Dove, Bureau of Entomology, at Golovin. In addition to assisting in the work of rounding-up, these experienced men were brought to Nunivak Island for the purpose of operating the Burdizzo instruments as well as to teach some of the Nunivak natives the method of using these instruments in order that the work could henceforth be done yearly by Nunivak men.

Upon our arrival at Mekorryok it was learned that Paul Ivanoff in charge of the reindeer-caribou herd on Nunivak Island had secured a successful roundup August 15-16, obtaining the following animals:

FEMALES	Adults	581
	Yearlings	113
	Fawns	263
STEERS	Adult	352
	Fawn	190
MALES	Adult Caribou	8
	Adult Cross	78
	Year. Cross	6
	Fawns	101
KILLED & INJURED		
	Bulls	2
	Steers	6
	Females	1
	Fawns	4
Total		1,705

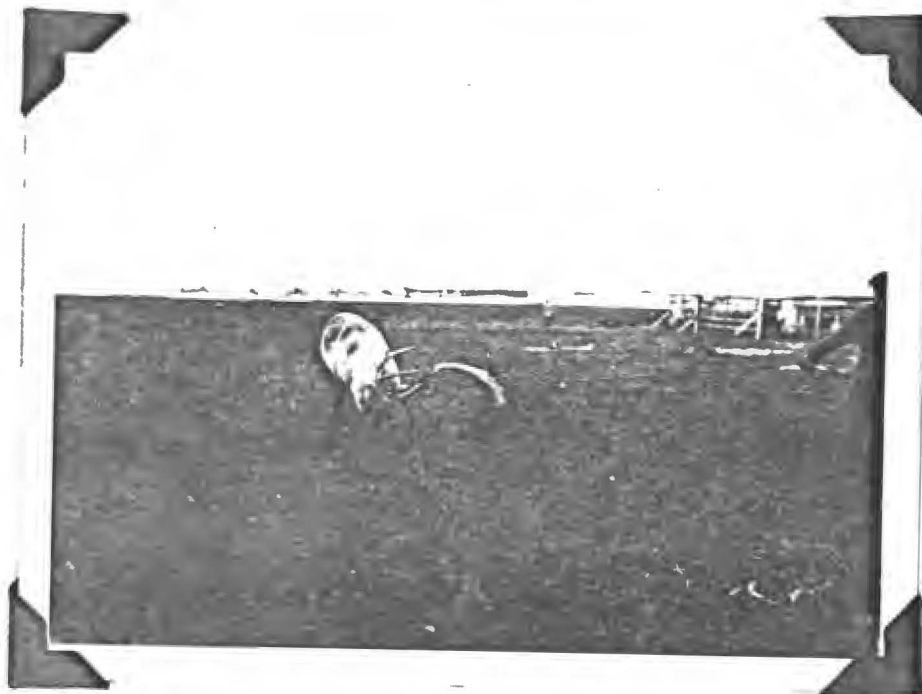
Including yearling females there was a fawning increase of 79.2 % on females. Of these 52.53 % were males and 47.47 % were females.

About 300 animals escaped before the corralling. Therefore there were approximately 2,000 head in the total herd as found.

Paul Ivanoff had used the Burdizzo instruments in making castrations during this work. We therefore planned rounding-up the herd again to check efficiency of the castration work done, while at the same time having my assistants teach a few of the natives at Mekorryok the method of using the Burdizzo instruments.



Nunivak Island Reindeer-Caribou herd in corral 1930.
Photo by Paul Ivanoff



Male Woodland Caribou, Nunivak Island September 17, 1930.

Weather was continuously stormy until September 13. This prevented travel with the M. S. Nunivak to distribute the roundup crew. The herders left Mekorryok reindeer camp on foot the morning of September 13. After three days of searching in stormy and rainy weather the herd was brought in.

When corralling was attempted the morning of September 16, natives from the village unknowingly frightened the herd so badly that they broke through the long wing. About 100 animals swam the river and escaped. Corraling was accomplished at 6 P.M. Due approaching darkness only 22 head were handled that evening.

Mr. M. S. Ivanoff, U. S. Office of Education Teacher, from Nash Harbor attended the corralling and kept records. The herd was handled September 17 from 7 A.M. to 6:02 P.M. A total of 1,339 animals were put through the chute as follows:

FEMALES	Adults	536
	Yearlings	27
	Fawns	251
STEERS	Adult	261
	Fawns	94
MALES	Adult Caribou	8
	Adult Cross	58
	Year. Cross	9
	Fawns Cross	83
Killed & Injured		11
Escaped		<u>1</u>
Total		1,339

Castration with Burdizzo Instruments.

Operation -- In 1929 Dr. W. E. Dove introduced the Burdizzo instruments in Alaska for use in castration of reindeer. He and Dr. J. S. Hwang experimented in the use of the instruments in the reindeer herds at Golovin and Egavik. The castration operations performed with use of Burdizzo instruments on Nunivak were done by the method which had proved most efficient from their experiments, and as the native assistants had been trained.

This method of operation on reindeer is performed in somewhat different manner than that indicated in the instructive circulars regarding use of the instruments on



Use of Burdizzo pincers in castration of reindeer-caribou cross males Nunivak Island 1930.
Upper - Placing the instrument preparatory to closing.
Lower - Completion of operation.

other classes of livestock, in that, after the pincers are shut on the cord, the rubbing of the cord between the thumb and forefinger and a slight pull are given on the side toward the testicle as included in the grasp of the instrument, instead of on the side toward the animal.

Two men are employed in the operation of each instrument as follows:

After the animal is thrown one man reaches over the animal from the back. Grasping the scrotum with both hands, a hand holding either testicle, he then feels above the testicles and separates the cords to either side in the scrotum. The second man then clamps the jaws of the instrument squarely across one of the cords. The jaws are clamped about half inch above the testicle on fawns to an inch above on the larger animals. The first man then kneads the cord just inside the jaws and above the inclosed testicle for about two seconds, ending up with a slight pull toward the testicle. The instrument is then released and the operation completed on the second cord in like manner.

Men doing the castration work with Burdizzo instruments should be thoroughly trained. The instrument should be closed carefully and not too rapidly upon the scrotum and cord. The subsequent kneading and pull should not be too rough nor forceful yet the operation should be thorough.

Ordinarily the tendency with natives in using the Burdizzo instruments on reindeer is to perform the work too hastily. Dr. Cushing, of the Bureau of Entomology at Golovin, states that a check-up there shows about 90 % efficiency. With more care complete efficiency could as well be obtained. Both assistants from Golovin had been selected by Dr. Cushing as careful and efficient in the operation of Burdizzo instruments.

All animals operated on with Burdizzo castration pincers during the September roundup were tagged with Al-Wuz-On eartags in order to check up in future handlings the efficiency of Burdizzo castrations there as well as to compare relative growth of castrated and uncastrated animals of even age. A number of uncastrated fawns were also tagged to keep check on their age for these comparisons.

Many of the male fawns operated upon by Paul Ivanoff in August required further operation at this roundup, only one side having been effective. The fawns on which the operation had been entirely effective were easily recognized as their horns were now (September 17) entirely in the velvet. My assistants estimated that the castration work done in August by Paul Ivanoff with Burdizzo instruments was approximately only 50 % efficient.

Four of the Nunivak men were trained with great care by my assistants in operating with Burdizzo instruments. Emphasis was laid upon doing the work thoroughly.

Animals Tagged with Numbered Al-Wuz-On Metal Eartags (1930)

Tag No.	Animal (Males unless otherwise stated)	Operation
127	Fawn	Castrated, Burdizzo pincers, August roundup
132	Adult	" " " 9/17/30
133	Fawn	" " " Aug. $\frac{1}{2}$ effective, completed in Sept.
135	"	" " " 9/17/30
138	Adult	" " " " " "
139	Fawn	" " " August roundup
140	Adult	" " " 9/17/30
141	"	" " " " " "
142	Fawn	" " " " " "
143	"	" " " " " "
144	"	" " " " " "
145	"	" " " " " "
147	"	" " " " " "
*201	" (Cross)	Not castrated (tagged only)
202	Yearling	Castrated, Burdizzo pincers 9/17/30
203	Fawn	" " " " " "
204	"	" " " " " "
205	"	" " " August
206	"	" " " "
207	"	" " " Aug. $\frac{1}{2}$ effective, completed in Sept.
208	"	" " " August
209	"	" " " "
210	"	" " " 9/17/30
211	"	" " " " " "
213	"	" " " August
214	"	" " " 9/17/30
215	"	" " " " " "
217	Adult	" " " " " "
218	Fawn	" " " " " " (Lost Power to move, then died.)
219	2 yr. old	" " " " " "
220	Fawn	" " " August
221	"	" " " 9/17/30
*222	Yearling Cross	Not castrated (tagged only)
223	Fawn	Castrated, Burdizzo pincers " " "
224	"	" " " August
225	Adult	" " " 9/17/30
226	Fawn	" " " " " "
227	"	" " " " " "
228	"	" " " August
229	"	" " " 9/17/30

Animals Tagged with numbered Al-Wuz-On Metal Eartags (1930) Cont'd.

Tag No.	Animal (Males unless otherwise stated)	Operation	
230	Fawn	Castrated, Burdizzo pincers	9/17/30
*231	Adult Gross	Not castrated (Tagged only)	
232	Fawn	Castrated, Burdizzo pincers	" " "
233	"	" " "	" " "
*234	"	Not castrated (Tagged only)	
*235	"	" " "	
236	"	Castrated, Burdizzo Pincers	August
237	"	" " "	9/17/30
*238	"	Not castrated (Tagged only)	
239	"	Castrated, Burdizzo pincers	August
*240	"	Not castrated (Tagged only)	
241	"	" " "	
242	"	Castrated, Burdizzo pincers	9/17/30
*243	Yearling	Not castrated (Tagged only)	
244	Adult	Castrated, Burdizzo pincers	9/17/30
245	Fawn	" " "	August
247	"	" " "	"
248	Yearling	" " "	9/17/30
249	Fawn	" " "	August
250	"	" " "	"
251	"	" " "	9/17/30
252	"	" " "	" " "
253	"	" " "	August
254	"	" " "	"
255	"	" " "	"
256	"	" " "	9/17/30
258	"	" " "	" " "
259	Female fawn	Broken horn removed by pruning shears	
260	Fawn	Castrated, Burdizzo pincers	August
*261	"	Not castrated (Tagged only)	
262	"	Castrated, Burdizzo pincers	9/17/30
263	"	" " "	August
264	"	" " "	"
265	"	" " "	"
266	"	" " "	"
267	"	" " "	"
268	"	" " "	9/17/30
269	"	" " "	August
270	"	" " "	9/17/30
271	"	" " "	" " "
272	"	" " "	August
273	Adult	" " "	9/17/30
274	"	" " "	" " "
275	Fawn	" " "	" " "
276	"	" " "	August
277	"	" " "	9/17/30
278	"	" " "	" " "

Animals Tagged with numbered Al-Wuz-On Metal Eartags (1930) Concluded

Tag No.	Animal (Males unless otherwise stated)	Operation	
279	Fawn	Castrated, Burdizzo pincers	9/17/30
280	"	" " "	August
281	"	" " "	"
282	"	" " "	9/17/30
283	"	" " "	" " " Also pruned horns
284	Adult	" " "	" " "
285	Fawn	" " "	" " "
286	"	" " "	" " "
287	"	" " "	Aug. $\frac{1}{2}$ effective, completed in Sept.
288	"	" " "	9/17/30
289	"	" " "	Aug. $\frac{1}{2}$ effective, completed in Sept.
290	"	" " "	" " " " " "
*291	Yearling Cross	Not castrated (tagged only)	
*292	Fawn	" " "	Scrub turned loose by mistake.
294	Adult	Castrated, Burdizzo pincers	9/17/30
295	"	" " "	August
296	Fawn	" " "	9/17/30
297	"	" " "	Aug. $\frac{1}{2}$ effective, completed in Sept.
298	"	" " "	August
299	"	" " "	9/17/30
300	"	" " "	" " "

As will be noted one male fawn (Tag No. 218), after the operation with Burdizzo instruments had been completed, became completely paralyzed and died almost immediately.

To serve as a check on weights, measurements, and other future data, with castrated animals of the different age classes, a number of uncastrated animals were also tagged as indicated in the above table.

Data on Animals Tagged in 1929 with
Numbered Al-Wuz-On Eartags.

During the roundup work of July 1929 a number of animals had also been tagged with Al-Wuz-On eartags.

Use of Leavitt Dehorner on Fawns -- Twelve fawns with horns broken into the skull had been dehorned with Leavitt dehorner and eartagged for future observation. During roundup and corral work in the marking season many fawns have their horns broken. At this time the horns are soft, distended with blood, sensitive, tender, and easily broken. Horns are most often broken when the herd is milling or tightly bunched. Usually the horns become broken outside the skull and the broken portion can be readily removed by cutting with a knife the skin of the velvet by which it is still held.

Occasionally however a portion of the skull is broken around the base of the horn causing the fawn severe pain. These fawns are customarily killed as handled, for cutting the horn loose with the skull portion remaining leaves the head exposed to infection, or infestation by insects. The Leavitt dehorner was used to clip such horns off just above the skull. Thus the horns would no longer dangle and irritate the broken skull portion. After the operation pine tar was applied at the base from which the horn had been removed.

During the 1930 roundup six of these (now yearling) animals came through the chute as follows:

A yearling female (tag No. 116) had no ill results from having the horn thus cut off. A male yearling (tag No. 118) had no ill results and weighed 295 pounds. A yearling steer (tag 126) which had been an exceptionally small fawn when castrated in addition to removal of the broken horn now weighed 230 pounds. Two yearling females (Nos. 119 and 121) weighed 202 pounds and 200 pounds, respectively, and appeared perfectly normal. One yearling steer (tag No. 124 recorded as a male 1929) had grown a stunted and imperfect horn on the side operated upon the year before, and at this time (9/17/30) the stunted horn was soft instead of having hardened. At the base it was swollen and suppurated entirely into the skull. The animal was in very poor condition and badly stunted. It was therefore killed.

The experiment indicates that, when horns of fawns are broken into the skull, by clipping the broken horn near the head and applying pine tar thereafter the animal will have a fair chance of recovery, and probability of normal growth.

A pruning shears was tried in lieu of the Leavitt dehorner during the (9/17/30) roundup, but at this time the fawns horns were entirely too hard to make the operation practicable.

In herds where the fawnskins are in demand and of practically as much value as grown butcher stock it would doubtless be good practice to kill fawns thus injured, except to operate on horns to save the better sized female fawns.



Male woodland caribou Nunivak Island
September 17, 1930, thrown for
measuring and to hog-tie for weighing.

2 year old male caribou reindeer
Nunivak Island Sept 17, 1930.



Years Growth Increase 1929-30 of Animals Tagged 1929

Several animals which were weighed in 1929 were also tagged with Al-Wuz-On tags. Some of these were again weighed in 1930 to determine increased growth of individual animals in a year, as follows:

Animal	Date	Weight Pounds	(ft. & tenths) Body Measurement				Horn Measurement		
			Length	Height	Hindfoot	Tail	Spread	Length	Tines
Fawn cross castrated to yearling male Tag No. 107	7/11/29	115	4.20	2.94	1.36	.40			
	8/15/30	280	5.42	3.66	1.66	.46	2.42	2.17	1.25
	Growth	165	1.22	.72	.30	.06			
Fawn cross female to yearling " " Tag No. 109	7/11/29	107	4.30	2.84	1.35	.32			
	8/15/30	230	5.25	3.58	1.58	.45	1.25	1.50	.66
	Growth	123	.95	.74	.23	.13			
Yearling cross male to 2 yr. " " Tag No. 104	7/11/29	182.5	5.20	3.50	1.55	.40	1.72	2.85	1.26
	9/17/30	()	6.68	3.99	1.68	.43	2.48	3.68	1.30
	Growth		1.48	.49	.13	.03	.76	.83	.04
Yearling cross male to 2 yr. " " Tag No. 105	7/11/29	194	5.40	3.46	1.56	.41	2.10	2.86	1.10
	8/15/30	360	6.00	3.83	1.62	.42	2.66	2.42	1.08
	Growth	66	.60	.37	.06	.01	.56	.44	.02
Yearling cross male to 2 yr. " " Tag No. 106	7/11/29	211	5.42	3.58	1.60	.47	2.90	2.74	1.05
	8/15/30	350	6.33	4.08	1.66	.47	2.58	2.92	1.21
	Growth	139	.91	.50	.06	.00	.32	.18	.16
Female adult cross Tag No. 110	7/11/29	239.5	5.50	3.52	1.61	.38			
	9/17/30	305	5.70	3.95	1.55	.38	2.10	2.4	1.25
	8/15/30	300	5.70	3.90	1.58	.375	2.42	2.9	1.25
	Growth	66.5	.20	.43	.06	.00	.32	.05	.00
4 yr. cross male Tag No. 101	7/11/29	397.25	6.79	4.07	1.74	.52	2.66	3.64	1.43
	8/15/30	400	6.80	4.50	1.75	.46	3.50	4.67	1.25
	Growth	2.75	.01	.43	.01	-.06	.84	1.03	.18

Further Weights and Measurements

Animal	Tag No.	Date	Weight Pounds	Body Measurement (ft. & tenths)				Horn Measurement		
				Length	Height	Hindfoot	Tail	Spread	Length	Tines
Caribou male		9/17/30	436	6.98	3.95	1.65	.35	2.95	3.45	1.10
		"	408	6.75	4.15	1.78	.415	3.35	3.86	1.30
		"	377	7.00	4.30	1.70	.42	3.70	3.95	1.39
		"	328	6.59	4.07	1.70	.49			
		"	390	7.34	4.13	1.70	.41	Horns missing		
		"	328	6.45	3.99	1.69	.48	2.66	3.05	1.59
	Average		378	6.84	4.09	1.70	.42	3.16	3.58	1.34
Adult male cross 5 yr. old	(246)	9/17/30	375	6.40	4.09	1.69	.45	2.60	3.00	1.25
	(212)	"	445	7.40	4.10	1.70	.44	3.97	4.64	1.25
		"	357	7.20	4.09	1.68	.43	2.93	3.17	1.32
	(104)	8/15/30	330	6.08	4.25	1.67	.47	2.67	3.42	1.16
	(103)	"	415	6.50	4.33	1.67	.50	3.42	3.92	1.16
	Average		384	6.71	4.17	1.68	.46	3.12	3.63	1.23
Steer adult cross		9/17/30	378	6.56	4.41	1.70	.39			
Adult female cross	(293)	"	282	6.18	3.72	1.58	.38	1.77	2.61	.98
Yr. cross male	118*	8/15/30	295	5.50	3.91	1.66	.42	2.33	2.58	1.25
	126*	"	230	5.75	3.92	1.67	.47	2.08	2.25	1.08
	120*	"	260	5.91	3.91	1.67	.42	2.75	2.66	.83
	Average		262	5.72	3.91	1.67	.44	2.39	2.50	1.05
Yr. female cross	119*	8/15/30	202	5.33	3.58	1.58	.374	1.5	1.58	.66
	121*	"	200	5.25	3.75	1.58	.42	1.83	1.83	.75
	Average		201	5.29	3.66	1.58	.396	1.66	1.70	.70

* Had horn broken into skull and operated Leavitt dehorner 7/11/29.

Male fawn cross	9/17/30	164	5.05	3.48	1.48	.35
	"	173	5.00	3.50	1.48	.35
Average		168	5.02	3.49	1.48	.35
Female fawn cross	9/17/30	179	5.00	3.22	1.42	.33



Weighing crossbreed caribou-reindeer male on platform scales, Nunivak Island September 17, 1930.



Showing the fine quality meat from caribou-reindeer crossbreed steer killed in handling September 17, 1930.

From the weights and measurements obtained at these roundups in 1930 and also in 1929 it is evident that the caribou-reindeer crossbreed herd on Nunivak Island is composed of superior animals in each age class.

The adult crossbreed steer for which weight and measurements are given in the above table, was killed in the roundup 9/17/30. Its weight when dressed was 257 pounds or 68 per cent of the live weight. As this animal weighed 378 pounds when killed after 24 hours in the corral it would doubtless have weighed over 400 pounds when first entering the corral.

The introduction of woodland caribou blood into the Nunivak Island herd together with the optimum conditions which obtain there have greatly increased the size and weight of animals. This increase will average fully 50 pounds per animal on the adult butcher stock. This development can be maintained as long as the herd is properly handled and managed.

In discussing recently the reindeer situation in Alaska with Dr. Anderson the Sociologist from Stanford University who is investigating the educational system employed in government schools for natives, he stated that he visited Mountain Village during the winter butchering work there. The reindeer butchered in that native herd were small, he said, the dressed weight being little over 100 pounds each. This condition is brought about by the native policy of always taking the best, leaving only the inferior animals as breeding stock which results in rapid deterioration of the herd.

Many years ago there were numerous wild caribou on Nunivak Island. Doubtless the original animals drifted to Nunivak on the spring ice pack from the rivers of the mainland. Occasionally a wolverine is found on Nunivak having drifted there on the ice. A native from Unalakleet now living on the island also observed one muskrat at a stream near Nash Harbor on the north shore of Nunivak during the past season.

When the wild caribou were on Nunivak, the natives of the mainland would come from the Yukon region and kill these animals by the hundreds, primarily for their skins alone, only taking a very little of the choicest meat. It was comparatively a simple matter to bunch them up and slaughter them to the last animal encountered during the hunt. Mr. Paul Ivanoff, who is now in charge of the reindeer caribou herd on Nunivak, has found during his trips over the island, great heaps of the old horns and bones.

Eventually by this rapid slaughter the caribou became very scarce on Nunivak Island. In the winter of 1903-4 the last caribou was seen. The Nunivak natives have two stories of their final disappearance. Some aver that the tracks of a single male



Considerable time is required in throwing, measuring, hog-tying, and weighing the larger animals.

caribou, the last remaining animal, were seen leading out upon the heavy ice toward the mainland of the Alaskan coast, and that thereafter no further tracks were ever seen. The other story is that the last animals disappeared into the ground.

During this last roundup work Paul Ivanoff and my assistants who understand the Nunivak language heard some of the older natives discussing the animals; one saying.

"You see that one. Him caribou. Come back out of ground. Now we hunt caribou."

To which another added.

"Yes they just like picture my father draw and show me of caribou here long ago."

The natives fail to recognize or else forget that the caribou landed there and turned loose in 1925 are the same animals having now grown to great size. And also that the blood of these animals has wrought the caribou appearance of animals in the herd. Their own superstitious ideas seem more logical to them.

Thus it is necessary for the man in charge of the herd to be watchful or the native may commence killing animals. Mr. Misha Ivanoff the U. S. school teacher at Nash Harbor said that there were quite a number of dead reindeer reported found about the island during the preceeding winter by natives trapping.

Should natives commence killing animals, with their tendency for taking only the best, it would be disastrous in this fine herd. Nunivak Island is the only place in Alaska having an isolated reindeer herd small enough and with other conditions optimum, whereby controlled crossbreeding with caribou under range conditions is possible and also where the highest ultimate possibilities of proper herd management may be attained.

The woodland caribou blood is well distributed in the herd. The principal feature is increased size, weight, and strength. A great percentage of the animals show caribou characteristics. However there are many of the largest crosses in each age class also having principally reindeer characteristics as to shape and appearance. This is doubtless due to the prepotency possessed by the female reindeer.

In placing this excellent Nunivak stock for breeding in herds elsewhere it should first be ascertained that a suitable form of management is and has been in effect at these places. Particularly should the natives be taught and supervised in management of their herds that the best animals remain as breed-

ing stock and that small inferior, or crippled animals are to be weeded out for use.

On completion of the roundup work we were to go to Tachyhuimuit by September 25 at the place the S. S. Arthur J. Baldwin had left us; there to be picked up on the northward trip to Nome. Accordingly we left Mekorryok 2:20 P.M. September 20 and arrived at Nash Harbor the following morning after anchoring in a small cove during the night. At Nash Harbor we obtained a Columbia River type motor boat with which to take our provisions and equipment around Cape Mohican to our camp as the M. S. Munivak is not seaworthy now in rough weather.

Rough weather, however, prevented our rounding Cape Mohican. We therefore camped at Mâksagamuit the night of September 21 and from there we packed our provisions across the island about 20 miles to Tachyhuimuit, making two trips. The equinoxial storms were occurring at this time, with intermittent squalls of snow, rain, and hail, with freezing weather. Day and night watch was kept for the S. S. Arthur J. Baldwin. At night a lantern arranged with a gasoline can for reflector and mounted on a tall pole was kept continuously burning as a beacon of our location.

Finally on October 4, at 11 A.M we sighted smoke from a three masted ship to the southward. This we took to be the S. S. Arthur J. Baldwin and it later proved to be. We packed the camp goods and equipment in preparation for going aboard, but the ship passed on by. It was later learned that due the rough sea a hole had been smashed in the side of their large motor boat while launching, making it therefore impossible to come for us in the strong southerly gale. We had a bonfire on the beach at this time and used two or three gallons of kerosine and a great deal of grass with which to make a smoke signal, but the wind flattened the smoke to the ground where it disappeared up the draw of a small stream.

Thereafter we remained on Munivak Island until October 26, when the U. S. C. G. C. Northland bound for Nash Harbor took us aboard at Mekorryok reindeer camp. We had packed to Nash Harbor October 8 and 9, then October 12 had travelled by motor boat to Mekorryok.

At Mekorryok it was learned that the small boat "New York" with Messrs Gottschalk, Shannon, and Sully had arrived at Nunivak October 3. They had stopped at a small island north of Cape Corwin on which they unloaded their cargo and had then left presumably for Nome.

While enroute Dutch Harbor on the U. S. C. G. C. Northland it was learned that the New York had made two trips from Nome. landing a cargo of goods on Nelson Island the first trip. Their

arrival on Nunivak Island October 3 had been the second trip. On leaving Nunivak Island on that date they had doubtless gone again to Nelson Island. Later they would probably return to Nunivak Island to do trading with the goods landed. As the freezeup was now at hand it was impossible to search for them about Etolin Straits in the foggy and stormy weather. Commander E. D. Jones therefore proceeded for Dutch Harbor with the U.S.C.G.C. Northland. We arrived there 7:00 P.M. October 30.

As no boats were proceeding northward in Bering Sea at this season, we boarded the S.S. Starr November 2 arriving at Seward November 8 at 9 P.M. We left Seward via the Alaska Railroad November 16 at 7:30 A.M. arriving at Fairbanks the following day at 5:30 P.M. Thence my assistants left by airplane November 18 arriving at Golovin November 20. I remained in Fairbanks for conference with Mr. Palmer until November 23, boarding the airplane November 24 at 10 A.M. and arriving in Nome 1:25 P.M. November 25.

CONCLUSION

Reindeer were introduced on Nunivak Island in September 1920 by the Lomen Reindeer and Trading Company when 200 selected animals were brought from Golovin, Alaska aboard the S.S. Ketchikan. The ship was held many days in doing this. The herd was established on Nunivak Island at great expense.

In July 1925 the Biological Survey established a cross-breeding experiment with reindeer and caribou on Nunivak Island by castrating the male reindeer and turning ten male woodland caribou with the herd. The object of this experiment was to determine possible improvement of stock as to size, weight, quality, strength and hardiness. The results have been very successful showing great increase in size of animals, the live weight of adult butcher stock averaging about 50 pounds greater than found in herds of pure reindeer blood. The animals being hardier will withstand handling with less injury and breakage of bones, other conditions being equal. This improvement can be maintained as long as proper management and handling are continued. Since more female reindeer were placed on Nunivak Island from Golovin in 1928, a further improvement could doubtless be secured by placing 40 additional male woodland caribou on the island.

Nunivak Island is the only place available in Alaska where such experiments may be successfully conducted with control under range conditions. It is furthermore ideal for experiments with the musk-oxen and other arctic animals such as Siberian and Iceland Ponies.

As has been stated previously the natives of Nunivak Island now numbering 200 persons in all, are a very primitive people. However, their method of living in earth igloos with a long protective tunnel entrance, together with their seasonal routine of hunting, trapping, fishing, and use of herbs presents the only means of livelihood and survival under the conditions which have existed for perhaps centuries. In autumn after the huts have been torn apart, reconstructed, and covered with new sod preparatory for winter, the natives set out their seal nets of rawhide (principally of walrus skin) catching many hundreds of seals from which the blubber and oil is extracted for winter use, while the meat is usually used for dog feed. In the same season during freezeup the natives catch thousands of tomcods for drying. Also during the late run of salmon trout many huge hollow cairns are constructed of stones along the river banks, filled with frozen salmon trout, and covered over with stone to prevent foxes from eating these caches of fish. During this time the natives are living principally on ducks and geese then flying southward. Much time is also spent by

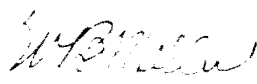
describes in, Travel June 1931, very pointedly the tastes and tendencies of the Eskimos, the statements being more applicable concerning the natives of Nunivak Island, in part as follows.

"Lack of ventilation", in huts, "with usual pulmonary troubles that result therefrom have created a condition which may be better imagined than described. --Native men are good carvers. They are keen and clever folk and interested in almost anything but sanitation. --Primarily the Eskimo depends on whale blubber, or muktuk, which is his favorite dish. Next in order comes the seal and particularly its oil. Third in importance comes the reindeer for which he cares least of all. For his dog feed he hunts the walrus, which answers for himself as well when no other food is available."

Fish both fresh and dried are of first importance to the Nunivak natives, the whale being unavailable there. Furthermore the Nunivak people eat almost fully as much vegetation as other foods.

As a further example, natives of the Kuskokwim River have been given reindeer. They have not the seal, excepting a few at the mouth of the river, but catch only fish and trap foxes, beavers and muskrats. They are not interested in their reindeer and are indifferent about maintaining herders and caring for the herd. In many instances they regard the reindeer as rather a nuisance than a benefit at the present time. Their summer is taken up with catching and drying fish and motor boating on the river. They are occupied during winter by trapping and hunting furbearing animals while traveling with dogteam. True, they visit the herd of reindeer from time to time selecting the finer animals for consumption or trap bait. They are not interested in remaining with the herd to care for it. It could not be expected that the more primitive Nunivak natives would give any care to reindeer.

Natives of Nunivak as well as elsewhere along the Alaskan coast are loath or indifferent about herding reindeer even when paid \$ 75.00 to \$ 100.00 per month for doing so. In many herds owned by both whites and natives, the natives do not feel like bearing their share of the actual expense of handling, considering their ownership of reindeer as a burden rather than a help. In herds owned entirely by natives no handling, care, or management is given the reindeer, unless compelled by Office of Education teachers leading and directing the work.


W. B. Miller
Associate Range Examiner.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF BIOLOGICAL SURVEY

IN REPLY REFER TO

Veterans' Hospital
Walla Walla, Washington
June 24, 1931

*Dr. Bell
For proper
action
P.R.*

Chief, Bureau of Biological Survey

Washington, D. C.

Dear Sir:

Herewith I am inclosing a report of the Nunivak Island Caribou-Reindeer Roundup 1930. Reference is also made to Dr. Bell's "S" letter of April 10, to Mr. Palmer which has been forwarded to me.

I am sorry that the Biological Survey has been so severely criticized by Mr. Sutherland in connection with the hearings of the reindeer committee for the course pursued in establishing our experimental crossbreeding work at Nunivak Island with the Lomen reindeer herd. This criticism which is met with is not based upon the desire for welfare of natives so much as it is the action of Anti-Lomen political, commercial, and government interests which are in part also political. Propaganda has been spread among the natives, and everything which is possible to harass and embarrass the white owners and particularly the leaders of the reindeer industry, is being brought about. This is caused by fear in the commercial interests and jealousy of control by government and political interests.

Thus the guise of appearing in the interests of the social and economic welfare of the Nunivak natives who are not in actual need, is an entering wedge to obtain sufficient control of Nunivak Island to further forestall the possibility of uninterfered management of the reindeer herd which now has prospects of success.

In fact the entire scheme of giving the natives of Alaska the reindeer has not been so great a success as it is lauded. Dr. Anderson, the Sociologist from Stanford University, describes the natives of St. Lawrence Island as an unadjusted population. In this particular instance the natives have things too easy. Their wealth is beyond their needs. No people have

progressed in such plenty. They may possess all the luxuries of civilization but they do not fit in that civilization. About Nome exactly the opposite prevails, where numerous natives spend the summer months about the streets of town, while the streams are full of fish which they could as well be catching, depending on the government destitution supplies to be furnished them during winter. One way or another things are made too easy, competition is omitted and progress is thwarted. The incentive to work is taken from industrious natives when they see lazy and indifferent people obtaining the destitution supplies.

The natives really need the competition and leadership resulting from white ownership of reindeer. The industry would progress at a much greater pace if a herd under white ownership were adjacent to each native herd..

Whenever a question has arisen concerning the relations of white and native reindeer owners, or other business enterprises in regions where the natives are found, someone invariably brings the charge that these enterprises are exploiting the native population. By this inference the commercial activities are criticized as entirely selfish on their part and degrading to the people who come in contact with them.

This charge has no general application. These business men go thus into regions that have had no progress for hundreds of years. They give employment to natives, build improvements, advance the scale of living and establish sanitation. Their presence, their capital, and training in skill have given the natives their main impetus¹ rise in the scale of civilization.

The large investments are not yet repaid. They have done much more for the natives with whom they have come in contact than the natives have done for them. If, up to the present time a balancing of accounts were made, it would probably show that the investors in reindeer and projects by white owners in Alaska are the ones who have been exploited. It is the natives that benefit by the white ownership.

Among the more enlightened people of Alaska Mr. Sutherland is called the "Squaw-man's friend". His political office is obtained by votes of the squaw-men, and those of kindred interests and sentiments, as well as by the native voters. It is through control of this vote that his political place is held. His principal motive is to appear on the good side of these voters in the guise of fighting a noble cause in their interests, also to assist the agencies who feel that their positions will be jeopardized through loss of control of the reindeer industry by its passage into white ownership. As a matter of fact the control

of the reindeer situation by these agencies has been held rather through control of the natives than by actual handling and management of reindeer on the range. The remarkable increase and growth of reindeer in natives herds have occurred largely in spite of and not because of the system practiced under the past regulations.

The result would prove distasteful to our crossbreeding experiments, as well as to the well being of the Nunivak herd, should a recommendation be made and carried through by the reindeer council, for ownership of reindeer by natives on Nunivak Island. It is suggested rather that the sale of reindeer to Nunivak natives be made by the Nunivak Development Company on a nominal basis. Full opportunity can be given for earning animals for meat and skins by such natives as desire work in handling and caring for the herd. Thus the management and work can be properly handled for the continual welfare of the herd.

Yours truly,



W. B. Miller.

Associate Range Examiner.