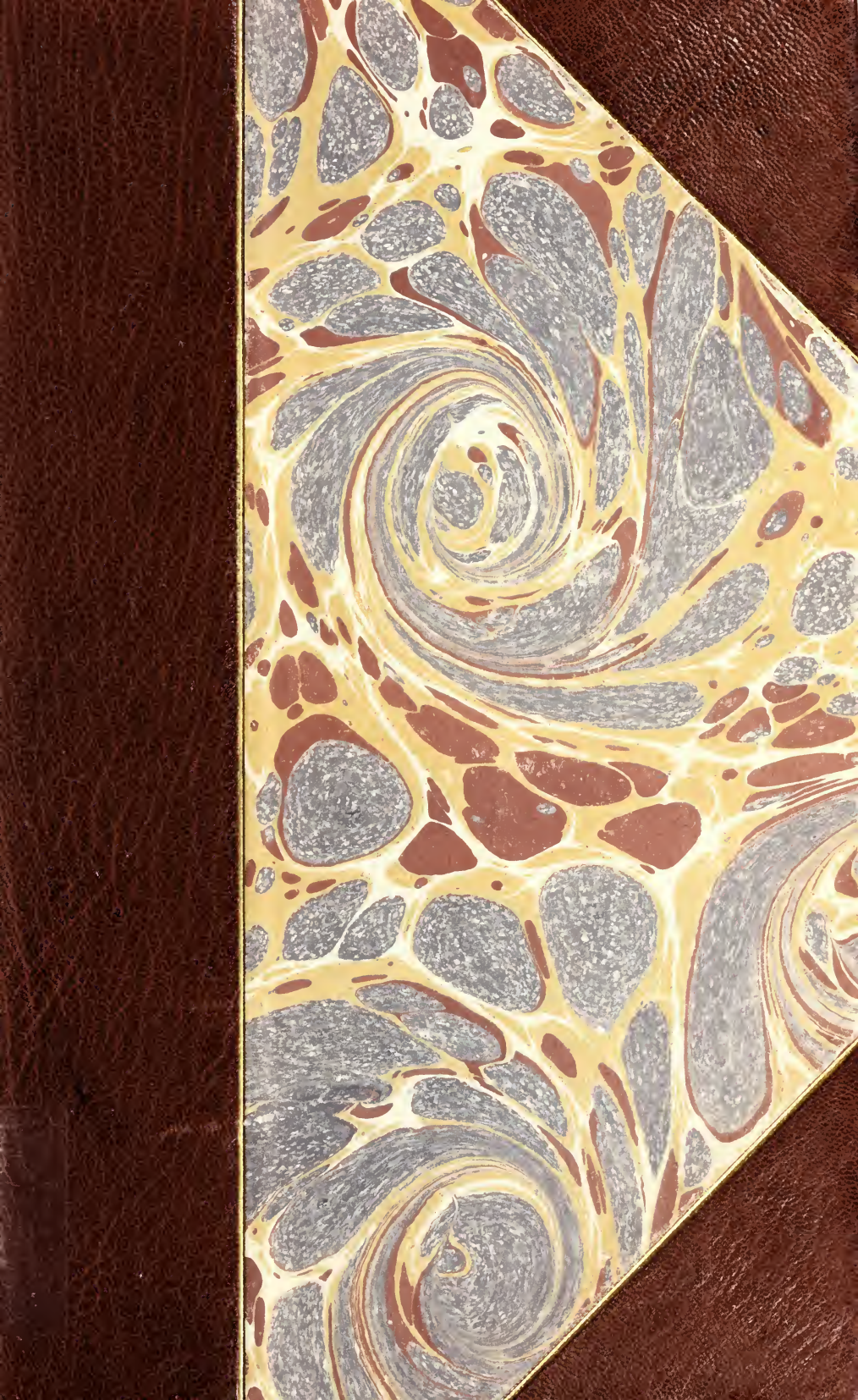
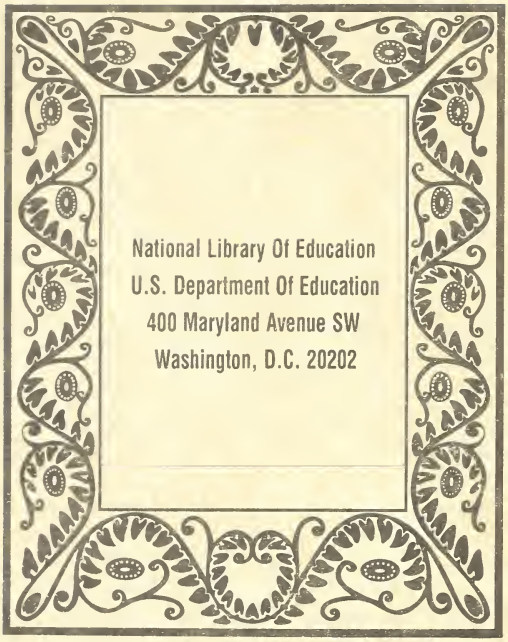




To the President-
Theodore Roosevelt-
With
the admiration & Esteem
of
the Author

Washington D.C.
1902

# Introduction

OF

# DOMESTIC REINDEER

INTO

# ALASKA

1890-'94.

---

SHELDON JACKSON

# PRELIMINARY REPORT

OF THE

# GENERAL AGENT OF EDUCATION FOR ALASKA

TO THE

# COMMISSIONER OF EDUCATION,

# 1890.

SHELDON JACKSON,
*General Agent of Education for Alaska.*

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1891.

DEPARTMENT OF THE INTERIOR,

BUREAU OF EDUCATION,

WASHINGTON, D. C., *December 26, 1890.*

*To the Honorable the Secretary of the Interior,*
*Washington, D. C.*

SIR: On the 5th instant I had the honor of transmitting to you a report from Dr. Sheldon Jackson, General Agent of Education for Alaska, in which he stated that the Eskimo of Arctic Alaska were on the verge of starvation, and recommended that we avail ourselves of the benefit of the several acts of Congress for promoting instruction in agriculture and the mechanic arts, and thereby provide a way of introducing into Alaska the domesticated reindeer of Siberia.

On the 15th instant you very kindly transmitted the above communications to Congress for such action as might be necessary, and on the 19th instant a joint resolution was introduced into the House of Representatives authorizing the Secretary of the Interior to extend to Alaska the benefits of the act approved March 2, 1887, creating "agricultural experiment stations," and of an act approved August 30, 1890, for the better support of agricultural schools in the several States and Territories.

If this very desirable legislation is granted, and under its provisions a suitable school is established, it will be a comparatively easy matter to purchase in Siberia a herd of domesticated reindeer, transport them to Alaska, and give instruction in their care and management.

This would be a great step forward in lifting the native races of that boreal region out of barbarism and starting them toward civilization, a step from the grade of wild hunter to the grade of herdsmen who live on domesticated cattle, and besides this furnish an article of exportation and commerce. The native tribes on the Siberian side are thriving with their herds of reindeer.

It seems that all Northern Alaska is filled with moss meadows (tundra) which furnish the very food that the reindeer requires.

Once started, the business would grow into large proportions, and the most serious problem that threatens Alaska will be solved.

Since the subject has been agitated a number of calls have been received by this Office for information with regard to it.

I would, therefore, respectfully request permission to publish in a small pamphlet the inclosed report of Dr. Sheldon Jackson with accompanying papers.

Respectfully, yours,

W. T. HARRIS,
*Commissioner.*

DEPARTMENT OF THE INTERIOR,

BUREAU OF EDUCATION,

*Alaska Division,*

*Washington, D. C., November 12, 1890.*

Hon. W. T. HARRIS, LL. D.,

*Commissioner of Education of the United States.*

DEAR SIR: In advance of a full report of operations in Alaska, I desire to call your attention to the need of legislation by Congress in order to secure for Alaska the benefits of the acts of Congress in 1887 and 1890 to promote instruction in agriculture and the mechanic arts.

And I do this now—

1. Because it is the short session of Congress, and whatever is done should be done at once; and

2. Because of the starving condition of the Eskimo on the Arctic coast of Alaska, which condition will be relieved by the proposed legislation (Appendixes A and B).

From time immemorial they have lived upon the whale, the walrus, and the seal of their coasts, the fish and aquatic birds of their rivers, and the caribou or wild reindeer of their vast inland plains.

The supply of these in years past was abundant, and furnished ample food for all the people. But fifty years ago American whalers, having largely exhausted the supply in other waters, found their way into the North Pacific Ocean. Then commenced for that section the slaughter and destruction of whales that went steadily forward at the rate of hundreds and thousands annually, until they were destroyed and driven out of the Pacific Ocean. They were then followed into Bering Sea, and the slaughter went on. The whales took refuge among the ice fields of the Arctic Ocean, and thither the whalers followed. In this relentless hunt the remnant have been driven still farther into the inaccessible regions around the north pole, and are no longer within reach of the natives. (Appendixes C, D, and E.)

As the great herds of buffalo that once roamed the western prairies have been exterminated for their pelts, so the whales have been sacrificed for the fat that encased their bodies, and the bone that hung in their mouths. With the destruction of the whale, one large source of food supply for the natives has been cut off.

Another large supply was derived from the walrus, which once swarmed in great numbers in those northern seas. But commerce wanted more ivory, and the whalers turned their attention to the walrus, destroying thousands annually for the sake of their tusks. Where a few years ago they were so numerous that their bellowings were heard above the roar of the waves and grinding and crashing of the ice fields, this year I cruised for weeks without seeing or hearing one. The walrus as a source of food supply is already practically extinct.

The seal and sea lion, once so common in Bering Sea, are now becoming so scarce that it is with difficulty that the natives procure a sufficient number of skins to cover their boats, and their flesh, on account of its rarity, has become a luxury.

In the past the natives, with tireless industry, caught and cured for use in their long winters great quantities of fish, but American canneries have already come to some of their streams, and will soon be found on all of them, both carrying the food out of the country and, by their wasteful methods, destroying the future supply. Five million cans of

salmon annually shipped away from Alaska—and the business still in its infancy—means starvation to the native races in the near future.

With the advent of improved breech-loading fire-arms the wild reindeer are both being killed off and frightened away to the remote and more inaccessible regions of the interior (Appendix K) and another source of food supply is diminishing.*

Thus the support of the people is largely gone, and the process of slow starvation and extermination has commenced along the whole Arctic coast of Alaska. Villages that once numbered thousands have been reduced to hundreds—of some tribes but two or three families remain. At Point Barrow, in 1828, Captain Beechey's expedition found Nuwuk a village of 1,000 people; in 1863 there were 309; now there are not over 100. In 1826 Captain Beechey speaks of finding a large population at Cape Franklin; to-day it is without an inhabitant. He also mentions a large village of 1,000 to 2,000 people on Schismareff Inlet; it has now but 3 houses.

According to Mr. John W. Kelly, who has written a monograph upon the Arctic Eskimo of Alaska, Point Hope, at the commencement of the century, had a population of 2,000; now it has about 350. Mr. Kelly further says: "The Kavea country is almost depopulated owing to the scarcity of game which has been killed or driven away. * * * The coast tribes between Point Hope and Point Barrow have been cut down in population so as to be almost obliterated. The Kookpovoros of Point Lay have only 3 huts left; the Ootookas of Icy Cape 1 hut; the Koogmute has 3 settlements of from 1 to 4 families; Sezaro has about eighty people."

Mr. Henry D. Woolfe, who has spent many years in the Arctic region, writes: "Along the sea coast from Wainright Inlet to Point Lay numerous remains of houses testify to the former number of the people. * * From Cape Seppings to Cape Krusenstern and inland to Nounatok River there still remain about forty people—the remnant of a tribe called Key-wah-ling-nach-ah-mutes. They will in a few years entirely disappear as a distinctive tribe."

I myself saw a number of abandoned villages and crumbling houses during the summer, and wherever I visited the people I heard the same tale of destitution.

On the island of Attou, once famous for the number of its sea otter skins, the catch for the past nine years has averaged but 3 sea otter and 25 fox skins, an annual income of about $2 for each person. The Alaska Commercial Company this past summer sent $1,300 worth of provisions to keep them from starving.

At Akutan the whole catch for the past summer was nineteen sea otters. This represents the entire support of 100 people for twelve months. At Unalashka both the agent of the Alaska Commercial Company and the teacher of the Government school testified that there would be great destitution among the people this winter because of the disappearance of the sea otter. At St. George Island the United States Treasury agent testified that there was not sufficient provision on the island to last through the season, and asked that a Government vessel might be sent with a full supply. At Cape Prince of Wales, Point Hope, and Point Barrow was the same account of short supply of food. At the latter place intimations were given that the natives in their dis-

* The reindeer have long since been driven away. (John W. Kelly, in Ethnographical Memoranda Concerning the Arctic Eskimos in Alaska, A. D. 1889, page 9.)

tress would break into the Government warehouse and help themselves to the supply that is in store for shipwrecked whalers. At Point Barrow, largely owing to the insufficient food supply, the death rate is reported to the birth rate as 15 to 1. It does not take long to figure out the end. They will die off more and more rapidly as the already insufficient food supply becomes less and less.

## INTRODUCTION OF REINDEER.

In this crisis it is important that steps should be taken at once to afford relief. Relief can, of course, be afforded by Congress voting an appropriation to feed them, as it has so many of the North American Indians. But I think that every one familiar with the feeding process among the Indians will devoutly wish that it may not be necessary to extend that system to the Eskimo of Alaska. It would cost hundreds of thousands of dollars annually, and, worse than that, degrade, pauperize, and finally exterminate the people. There is a better, cheaper, more practical, and more humane way, and that is to introduce into Northern Alaska the domesticated reindeer (Appendixes F and G) of Siberia, and train the Eskimo young men in their management, care, and propagation.

This would in a few years create as permanent and secure a food supply for the Eskimo, as cattle or sheep-raising in Texas or New Mexico does for the people of those sections.

It may be necessary to afford temporary relief for two or three years to the Eskimo, until the herds of domestic reindeer can be started, but after that the people will be self-supporting.

As you well know, in the Arctic and sub-Arctic regions of Lapland and Siberia, the domesticated reindeer is food, clothing, house, furniture, implements, and transportation to the people. Its milk and flesh furnish food; its marrow and tongue are considered choice delicacies; its blood mixed with the contents of its stomach is made into a favorite dish called in Siberia "manyalla"; its intestines are cleaned, filled with tallow, and eaten as a sausage; its skin is made into clothes, bedding, tent-covers, reindeer harness, ropes, cords, and fish lines; the hard skin of the forelegs makes an excellent covering for snow shoes.*

Its sinews are dried and pounded into a strong and lasting thread; its bones are soaked in seal oil and burned for fuel; its horns are made into various kinds of household implements—into weapons for hunting and war, and in the manufacture of sleds.

Indeed I know of no other animal that in so many different ways can minister to the comfort and well-being of man in the far northern regions of the earth as the reindeer.†

> "The reindeer form their riches; these their tents,
> Their robes, their beds, and all their homely wealth supply;
> Their wholesome fare and cheerful cups."

Under favorable circumstances a swift reindeer can traverse 150 miles in a day. A speed of 100 miles per day is easily made. As a beast of burden they can draw a load of 300 pounds. They yield a cup-full of milk at a milking; this small quantity however is so thick and rich that it needs to be diluted with nearly a quart of water to make it drinkable.

---

* Kennan's Tent Life in Siberia, page 188.

† Without the reindeer the Laplander could not exist in those northern regions; it is his horse, his beast of burden, his food, his clothing, his shoes, and his gloves. (Du Chaillu's Land of the Midnight Sun, vol. 2, page 199).

It has a strong flavor like goat's milk, and is more nutritious and nourishing than cow's milk. The Lapps manufacture from it butter and cheese. A dressed reindeer in Siberia weighs from 80 to 100 pounds. The reindeer feed upon the moss and other lichens that abound in the Arctic regions, and the farther north the larger and stronger the reindeer.

Now, in Central and Arctic Alaska are between 300,000 and 400,000 square miles (an area equal to the New England and Middle States combined, together with Ohio, Indiana, and Illinois) of moss-covered tundra and rolling plains of grass that are specially adapted by nature for the grazing of the reindeer and is practically useless for any other purpose.

If it is a sound public policy to bore artesian wells and build water-storage reservoirs, by which thousands of arid acres can be reclaimed from barrenness and made fruitful, it is equally a sound public policy to stock the plains of Alaska with herds of domesticated reindeer, and cause those vast, dreary, desolate, frozen, and storm-swept regions to minister to the wealth, happiness, comfort, and well-being of man. What stock-raising has been and is on the vast plains of Texas, Colorado, Wyoming, and Montana, reindeer-raising can be in Northern Alaska. In the corresponding regions of Lapland, in Arctic Norway, and in Sweden and Russia are 27,000 people supporting themselves (besides paying a tax to the government of $400,000, or $1 per head for their reindeer) and procuring their food and clothing largely from their 400,000 domesticated reindeer (Appendix H). Also in the corresponding regions of Siberia, with similar climate, soil, and environment (and only 40 miles distant at the straits), are thousands of Chukchees, Koraks, and other tribes fed and clothed by their tens of thousands of domesticated reindeer.

During the summer I visited four settlements of natives on the Siberian coast, the two extremes being 700 miles apart, and saw much of the people, both of the Koraks and Chukchees. I found them a good-sized, robust, fleshy, well-fed, pagan, half-civilized, nomad people, living largely on their herds of reindeer. Families own from 1,000 to 10,000 deer. These are divided into herds of from 1,000 to 1,500. One of these latter I visited on the beach near Cape Navarin. In Arctic Siberia the natives with their reindeer have plenty; in Arctic Alaska without the reindeer they are starving.

Then instead of feeding and pauperizing them, let us civilize, build up their manhood, and lift them into self-support by helping them to the reindeer. To stock Alaska with reindeer and make millions of acres of moss-covered tundra conducive to the wealth of the country, would be a great and worthy event under any circumstances.

But just now it is specially important and urgent from the fact, stated in the opening of this report, that the destruction of the whale and walrus has brought large numbers of Eskimo face to face with starvation and that something must be done promptly to save them.

The introduction of the reindeer would ultimately afford them a steady and permanent food supply.

## AGRICULTURAL EXPERIMENT STATION.

Passing from Northern Alaska with its adaptation to reindeer-raising, we find the whole southern coast, stretching for thousands of miles, to possess a temperate climate. This is due to the "Kuro-siwo" or "Japan Current" of the Pacific Ocean. In this "temperate belt" it is probable

that there are areas of greater or less extent that are adapted to agriculture. At least it is known that there are small farms or vegetable gardens on Kodiak and Afognak Islands, on the shores of Cook's Inlet, and in Southeastern Alaska. It is also known that wild berries grow in great profusion and abundance in many sections. But no intelligent and continued experiments have been made to test the agricultural and horticultural capabilities of the country.

Until a quite recent period (1867) the European population were fur-trading Russians. They were followed by fur-trading Americans, and more recently by the gold-seekers. No one expected to remain long in the country, and there has been no incentive to carry forward intelligent experiments in agriculture.

As early as my first report to the Commissioner of Education (1885) I called attention to the fact that there was a very wide diversity of views concerning the agricultural and horticultural capabilities of Alaska, and necessarily very great ignorance; that no systematic effort intelligently prosecuted had ever been made to ascertain what could or what could not be raised to advantage; that it was of very great importance, both to the people of Alaska and the country at large, that careful experiments should be made, extending over a term of years, to ascertain the vegetables, grains, grasses, berries, apples, plums, trees, flowers, etc., best adapted to the country; the best methods of cultivating, gathering, and curing the same; the planting and grafting of fruit trees; the development of the wild cranberry; cattle, hog, and poultry raising; butter and cheese-making, etc. In 1886 my recommendation was taken up by the U. S. Commissioner of Agriculture, who, in his annual report for that year (page 20) says: "Something in the line of experimental work might also be undertaken in Alaska, possibly with profit. It is well known that the Department of the Interior has established an agency for the promotion of education in that territory.

"It has been suggested that a line of experiments, to be undertaken by this Department, would easily prove whatever of agricultural and horticultural capability may exist in the Territory. No careful attention seems to have been given there, as yet, to this branch of industry, and the resources of the country are quite unknown and undeveloped.

"The Industrial Training School at Sitka would furnish an admirable basis for a station, where could be conducted careful experiments to ascertain the agricultural products best adapted to the climate and soil of the Territory, and what breeds of cattle and other domestic animals are most suited to its climate and soil.

"Such an experiment ought to extend over a series of years, and the result would amply repay any expenditure that Congress may choose to make in this direction."

In view, therefore, of the national importance of introducing the domesticated reindeer of Siberia into Northern Alaska, and testing the agricultural capacity of Southern Alaska, I most earnestly recommend that you secure the establishment of an "Agricultural School and Experiment Station" in connection with the system of industrial education in Alaska.

By an act approved July 2, 1862, Congress made provision for schools for the "benefit of agriculture and the mechanic arts." By an act approved March 2, 1887, provision was made for "agricultural experiment stations" in connection with the agricultural schools. And by the act approved August 30, 1890, certain of the proceeds of the sale of public lands were set aside for the better support of these agricultural schools.

These acts of Congress require the assent of the legislature of the State or Territory in order that their provisions may become available.

But Alaska has no legislature, and is governed directly by Congress. On this account, and partly because nineteen-twentieths of the children to be benefited belong to the native races, Congress has committed to the Secretary of the Interior the duty of making "needful and proper provision for education in Alaska." It is, therefore, eminently proper that he should be authorized to extend to Alaska the benefits of the agricultural acts of 1887 and 1890, (Appendix J.), and secure the establishment of a school that can introduce reindeer into that region, and teach their management, care, and propagation, and also to conduct a series of experiments to determine the agricultural capabilities of the country.

To reclaim and make valuable vast areas of land otherwise worthless; to introduce large, permanent, and wealth-producing industries where none previously existed; to take a barbarian people on the verge of starvation and lift them up to a comfortable self-support and civilization, is certainly a work of national importance.

It was my good fortune to make my visit to the Eskimo in the United States revenue steamer *Bear*, commanded by Capt. Michael A. Healy, who has made an annual cruise in those waters for ten years past. Having seen much of the native population and taken a great interest in their welfare, he has probably a better knowledge of their condition and necessities than any other person. His attention was early called to the advantage that the introduction of domesticated reindeer would be to the inhabitants of Northern Alaska, and he has given the subject considerable thought.

When, therefore, I suggested the feasibility of introducing the domesticated reindeer of Siberia into Alaska in connection with the Government industrial schools, and my purpose to recommend it, he immediately indorsed the proposition, and rendered me much assistance in pursuing my inquiries with regard to the subject. He is also ready to co-operate in carrying out any plan that may be devised. Feeling sure that this important matter will have your hearty assistance,

I remain, with great respect, very truly, yours,

SHELDON JACKSON,
*U. S. General Agent of Education for Alaska.*

---

## Appendix A.

U. S. REVENUE STEAMER BEAR,
*San Francisco, Cal., December 6, 1890.*

Hon. W. T. HARRIS, LL.D.,
*U. S. Commissioner of Education,*
*Washington, D. C.*

DEAR SIR:

Under orders from the Secretary of the Treasury, I have been ten years on the Bering Sea and Arctic Ocean station of the U. S. Revenue Marine Service.

My duties have brought me very closely in contact with and greatly interested me in the native population.

On account of this interest, I have watched with pleasure the coming among them of the missionaries of the several churches and the teachers of the Government schools.

I have also seen with apprehension the gradual exhaustion of the native food supply.

From time immemorial they have lived principally on the whale, seal, walrus, salmon, and wild reindeer. But in the persistent hunt of white men for the whale and walrus, the latter has largely disappeared, and the former been driven beyond the reach of the natives. The white men are also erecting canneries on their best fishing streams, and the usual supply of fish is being cut off; and with the advent of improved fire-arms the wild reindeer are m grating farther and farther away.

With the disappearance of the whale, walrus, salmon, and reindeer, a very large portion of their food supply is taken away, and starvation and gradual extinction appear in the near future.

On my recent cruise I was accompanied by Dr. Sheldon Jackson, U. S. General Agent of Education, and together we have made the question of a future food supply the subject of special thought and investigation.

We have consulted with a few of the leading teachers, missionaries, traders, and whaling captains whom we have met, and they, without a single exception, agree with us that the most practical relief is the introduction of domesticated reindeer into that portion of Northern and Arctic Alaska adapted to them.

In Lapland there are 400,000 domesticated reindeer, sustaining a population of 27,000. In Siberia, but a few miles from Alaska, with climate and country of similar conditions, are tens of thousands of tame reindeer supporting thousands of people, and it will be a a very easy and comparatively cheap matter to introduce the tame reindeer of Siberia into Alaska and teach the natives the care and management of them.

This it is proposed to do in connection with the industrial schools established among the natives by the Bureau of Education. As in connection with the industrial schools in Dakota, Indian Territory, and elsewhere, the Indian boy is taught the raising of stock, so in the industrial schools of Alaska it is proposed to teach the Eskimo young men the raising of tame reindeer.

A few thousand dollars expended now in the establishment of this new industry will save hundreds of thousands hereafter. For if the time comes when the Government will be compelled to feed these Eskimo it will cost over $1,000,000.

In Northern Alaska there are about 400,000 square miles that are adapted to the reindeer and are unfit for anything else.

This region has a present population of about 20,000 all of whom will be ultimately benefited by the new industry.

With an assured support, such as will come from herds of tame reindeer, there is no reason why the present population shall not be increased in numbers and advanced to the position of civilized, wealth-producing American citizens.

Asking for your favorable consideration and earnest advocacy of this matter,

I remain, very respectfully,

M. A. HEALY,
*Captain, U. S. Revenue Marine.*

---

## Appendix B.

### DESTITUTION AMONG THE ALASKA ESKIMO.

*An interview with Capt. M. A. Healy, U. S. Revenue Marine Service, in San Francisco Chronicle, December 12, 1890.*

For several seasons past the Eskimo of Northwestern Alaska have experienced great hardships in obtaining a supply of deer meat for their winter stores. It is to be feared that when the *Bear* makes her annual visit to the Arctic next summer many of the villages will be found to have lost their residents from starvation. The latest advices from the Arctic report a failure not only in the autumn deer hunt, but in the entire catch of whales, walrus, and seals.

Naturally of a timid disposition the deer have learned that the natives with breech-loading arms are far more formidable foes than when bows, arrows, and spears were employed in the chase. Again, the Eskimo spare neither young or old when a herd is found, and little suckling fawns as well as does carrying young fall victims to their guns.

Formerly on the lower Yukon around St. Michael's, on Norton Sound, and in the country known as the Kotzebue Sound district, numbers of deer made yearly visits. Now it is rare to find that the natives living at these points have seen or tasted deer meat.

The Alaskan deer of the Arctic and sub-Arctic regions have been confounded with the reindeer of other localities, but while certainly belonging to the rangifer family, they are the true barren-ground caribou, differing from the upland caribou and domesticated reindeer of Lapland and Siberia in being smaller in body and horns. From July to September the instincts of the deer induce them to come from the interior to the sea coast to obtain rest and freedom from the tortures inflicted by the hordes of mosquitoes that infest the inland swamps, and also to get saline matter from the herbage and moss growing in proximity to the ocean. In September they commence their inland migration, and from July until the middle of October they are ruthlessly pursued by the natives. Some rest is afforded to the animals during the dark days that prevail in the Arctic zone from November until January, but as soon after the early part of February as the weather permits the food-

seekers again take the field. The does have their young during April, and by a provision of nature the horns of the female only attain size during the time she is suckling the fawn and until it reaches such an age that it can feed—about two months.

When it is considered that a deer weighing on an average 125 pounds is consumed at a single sitting by five or six natives it may be readily perceived that the average returns of a successful hunting party must be large to feed a village.

During the past season in the Arctic the attention of Captain Healy of the United States Revenue Steamer *Bear*, has been directed to a very pointed manner to the attainment of some method whereby the supply of deer for food and clothing purposes may be increased in Northwestern Alaska. This year, taking advantage of the presence on the *Bear* of Dr. Sheldon Jackson, U. S. Commissioner of Education for Alaska, the captain, in conjunction with Commissioner Jackson, intends to present to the Secretary of the Interior data upon the subject.

Within a radius of 100 miles inland from the shores of the ocean on the Siberian coast, from Cape Navarin to Plover Bay, there are a people known as deer men. They belong to the Chukchee tribe of Siberians, and are essentially a nomadic race, wandering from East Cape, on the northern coast, to Cape Navarin, southward. Accompanied by their herds of tame reindeer, aggregating in many instances thousands, they roam in search of food. These reindeer, while resembling the Alaskan species in the main, differ in the texture of their skins, the pelts being spotted brown and white, with a smooth surface. These deer men subsist mainly on the products of their herds, bartering the skins with the coast natives for tobacco, seal oil, walrus hides for their boot soles, and other minor commodities such as powder, shot, lead, and flour. At Cape Navarin and East Cape, Siberia, they sometimes meet the whaling ships and sell them deer meat and skins for tobacco, etc.

Captain Healy's ideas are to propose to the Government that he be empowered to purchase a number of these deer of both sexes and transport them on the *Bear* to some point on the Alaskan coast where moss and feed are plentiful. These deer are to form the nucleus of a herd, and from the yearly increase they can be distributed over other portions of the Northwest Territory. As the Alaskan Eskimo are not skilled in herding the deer, Captain Healy intends, if permission be granted by the Government, to endeavor to enlist the services of some experienced Siberian natives to instruct them.

Unless some measures be adopted, as suggested by Captain Healy, it is sure that a decade will witness the extermination of the people of our Arctic province on its northwest shores. The results of the active and unscrupulous chase of their pelagic food supplies by the whalemen have already become evident; walrus are almost invisible on the ice-floes within reach of the native hunters, while the flurried and galled whale makes its passage to the unknown regions of the Arctic ocean at a speed which defies the natives to capture it.

The proposition of Captain Healy will be communicated to the Washington authorities at an early date.

---

## Appendix C.

### DESTRUCTION OF THE WHALES.

*From Bancroft's History of Alaska, pages 668 and 669.*

Of whaling enterprise in the neighborhood of the Alaskan coast, mention has already been made; but a few statements that will serve to explain *the enormous decrease that has occurred in the catch within the last three decades* may not be out of place.

Of the 600 or 700 American whalers that were fitted out for the season of 1857, at least one-half, including most of the larger vessels, were engaged in the north Pacific. The presence of so vast a fleet tended of course to exhaust the whaling-grounds or to drive the fish into other waters, for there are no permanent whaling-grounds on any portions of the globe except those encircled by ice for about 10 months in the year. In the seas of Greenland, not many years ago, whales were rarely to be seen; in 1870 they were fairly plentiful. The sea of Okhotsk and the waters in the neighborhood of the Aleutian Islands were a few decades ago favorite hunting grounds but are now almost depleted, while in 1870 the coast of New Siberia was swarming with whales. Schools of sperm whale are occasionally seen between the Alaska Peninsula and Prince William Sound, and the hump-back sometimes makes its appearance as far north as Baranof Island. Between Bristol Bay and Bering Strait a fair catch is sometimes taken, but most of the vessels forming what is termed the north Pacific whaling fleet now pass into the Arctic Ocean in quest of their prey. Probably not more than 8 or 10 of them are employed on the whaling-grounds of the Alaskan coast.

In 1881 the whaling fleet of the north Pacific mustered only 30 and in the following year 40 craft, of which 4 were steamers. The catch for 1881 was one of the most profit-

able that has occurred since the date of the transfer, being valued at $1,139,000, or an average of about $57,000 for each vessel, some of them returning with cargoes worth $75,000 and few with cargoes worth less than $30,000. In 1883 the catch was inconsiderable, several of the whalers returning "clean," and few making a profit for their owners.

The threatened destruction of these fisheries is a matter that seems to deserve some attention. In 1850, as will be remembered, it was estimated that 300 whaling vessels visited Alaskan waters and the Okhotsk and Bering seas. Two years later the value of the catch of the north Pacific fleet was more than $14,000,000.

After 1852 it gradually decreased until in 1862 it was less than $800,000; for 1867 the amount was about $3,200,000; in 1881 it had again fallen to $1,139,000; and for the season of 1883 there was a still further reduction.

## Appendix D.

### DECREASE OF THE FOOD SUPPLY IN WESTERN ALASKA.

*From Petroff's census report, 1880.*

The whaling industry may be expected to decline gradually here as it has done in other sections of the globe. The danger indicated lies in the fact that the trading vessels coming to this region, chiefly from the Sandwich Islands, have carried such quantities of alcoholic liquor that the natives have acquired a craving for the same that can no longer be subdued, and this causes them to look for no other equivalent for their furs, oil, and ivory, than the means of intoxication. At the same time they become utterly reckless in their pursuit of fur-bearing and other animals, thinking only of satisfying their desire for the present without the slightest thought of the future; and if this state of affairs be continued *the extermination of the people, consequent upon the exhaustion of their means of subsistence, can only be a question of time.*

## Appendix E.

### CATCH OF WHALES IN ALASKAN WATERS.

*From Senate Executive Document No. 34. The Forty-second Congress, Second Session. Pages 4 and 5.*

| Year. | No. of ships. | Average barrels. | Total catch, oil, sperm and whale. | Total value, including bone. |
|---|---|---|---|---|
| | | | *Barrels.* | |
| 1845 | 163 | 953 | 250, 600 | $5, 337, 780 |
| 1846 | 192 | 869 | 253, 800 | 5, 542, 990 |
| 1847 | 177 | 1, 059 | 187, 443 | 4, 519, 330 |
| 1848 | 159 | 1, 164 | 185, 256 | 4, 198, 637 |
| 1849 | 155 | 1, 334 | 206, 850 | 5, 085, 716 |
| 1850 | 144 | 1, 692 | 243, 648 | 7, 186, 549 |
| 1851 | 138 | 626 | 86, 360 | 2, 812, 350 |
| 1852 | 278 | 1, 343 | 373, 450 | 14, 118, 900 |
| 1853 | 238 | 912 | 218, 135 | 7, 264, 470 |
| 1854 | 232 | 794 | 184, 063 | 6, 506, 976 |
| 1855 | 217 | 873 | 189, 579 | 8, 038, 914 |
| 1856 | 178 | 822 | 146, 410 | 6, 651, 156 |
| 1857 | 143 | 796 | 113, 900 | 5, 158, 760 |
| 1858 | 196 | 620 | 121, 650 | 4, 625, 620 |
| 1859 | 176 | 535 | 94, 160 | 3, 459, 060 |
| 1860 | 121 | 518 | 62, 678 | 2, 297, 511 |
| 1861 | 76 | 724 | 55, 024 | 1, 792, 900 |
| 1862 | 32 | 610 | 19, 525 | 785, 217 |
| 1863 | 42 | 857 | 36, 010 | 1, 855, 770 |
| 1864 | 68 | 522 | 35, 490 | 2, 725, 612 |
| 1865 | 59 | 617 | 36, 415 | 3, 092, 160 |
| 1866 | 95 | 598 | 56, 925 | 4, 301, 250 |
| 1867 | 90 | 640 | 57, 620 | 3, 192, 380 |
| 1885 | | | 20, 817 | |
| 1889 | 49 | | 12, 231 | |
| 1890 | 48 | | 7, 452 | |

## Appendix F.

### REINDEER.

*From Encyclopedia Britannica, volume 7, pages 24 and 25.*

The reindeer (*Tarandus rangifer*), the only domesticated species of deer, has a range somewhat similar to the elk, extending over the entire boreal region of both hemispheres, from Greenland and Spitzbergen in the north to New Brunswick in the south. There are several well-marked varieties differing greatly in size and in form of the antlers—the largest forms occurring furthest north, while by many writers the American reindeer, which has never been domesticated, is regarded as a distinct species. The antlers, which are long and branching, and considerably palmated, are present in both sexes, although in the female they are slender and less branched than in the males. In the latter they appear at a much earlier age than in any other species of deer, and Darwin conjectures that in this circumstance a key to their exceptional appearance in the female may be found. The reindeer has long been domesticated in Scandinavia, and is of indispensable importance to the Lapland race to whom it serves at once as a substitute for the horse, cow, sheep, and goat. As a beast of burden it is capable of drawing a weight of 300 pounds, while its fleetness and endurance are still more remarkable. Harnessed to a sledge it will travel without difficulty 100 miles a day over the frozen snow, its broad and deeply cleft hoofs being admirably adapted for travelling over such a surface. During summer the Lapland reindeer feeds chiefly on the young shoots of the willow and birch; and as this season migration to the coast seems necessary to the well-being of the species, the Laplander, with his family and herds, sojourns for several months in the neighborhood of the sea. In winter its food consists chiefly of the reindeer moss and other lichens, which it makes use of its hoofs in seeking for beneath the snow. The wild reindeer grows to a much greater size than the tame breed, but in Northern Europe the former are being gradually reduced through the natives entrapping and domesticating them. The tame breed found in Northern Asia is much larger than the Lapland form and is there used to ride on. There are two distinct varieties of the American reindeer, the barren-ground caribou and the woodland caribou. The former, which is larger and more widely distributed of the two, frequents in summer the shores of the Arctic Sea, retiring to the woods in autumn to feed on the tree and other lichens. The latter occupies a very limited tract of woodland country, and, unlike the barren-ground form, migrates southward in Spring. The American reindeer travel in great herds, and being both unsuspicious and curious they fall ready victims to the bow and arrow or the cunning snare of the Indian to whom their carcasses form the chief source of food, clothing, tents, and tools.

---

## Appendix G.

### WILD REINDEER IN ALASKA.

*Charles H. Townsend in the Report of the Cruise of the U. S. Revenue Marine Steamer Corwin, 1885, Captain M. A. Healy, commanding, pages 87 and 88.*

Reindeer are found more or less regularly throughout Alaska. They were found by Mr. McLenegan on the Noätak, as well as by our party on the Kowak. Traders in the service of the Alaska Commercial Company told me of their common distribution over the Yukon, Kuskokvim, and Aleutian divisions of the country. They have even been shot on Ounimak Island, at the end of the peninsula. But reindeer are restless animals, irregular in their migrations and habits. Sometimes they desert whole sections of the country for months together, and they appear to have withdrawn from many regions where fire-arms have been introduced. Notwithstanding the fact that large heards of reindeer are kept in a state of domestication by the Chukchees, at East Cape and other well known places on the Asiatic side of Bering Straits, with whom the natives of the Alaskan side communicate regularly, there appears to be no domestication of the species whatever in Alaska, nor indeed in any part of North America.

In time, when the general use of fire-arms by the natives of upper Alaska shall have reduced the numbers of this wary animal, the introduction of the tame variety, which is a substantial support to the people just across the Straits, among our own thriftless, alcohol-bewitched Eskimos, would be a philanthropic movement, contributing more toward their amelioration than any system of schools or kindred charities. The native boats could never accomplish the importation, which would, however, present no difficulty to ordinary seagoing vessels. The taming of the American reindeer is impracticable; for domestication, with this animal at least, is the result of subjection through many generations. Some-

thing tending to render a wild people pastoral or agricultural ought to be the first step toward their advancement. In our management of these people, "purchased from the Russians," we have an opportunity to atone, in a measure, for a century of dishonorable treatment of the Indian.

---

## Appendix H.

### DOMESTIC REINDEER IN LAPLAND.

*From Du Chaillu's Land of the Midnight Sun, volume 2, pages 167 and 168.*

The Fjeld Lapp's time is engaged in adding to his herd, to which he and his family devote all their energies, for their welfare depends on the growth of the animals. It is difficult to ascertain exactly the increase or decrease of reindeer according to the districts, for the people often change, and there has been of late years in the north a large immigration of Norwegian Lapps to the territory of Sweden, especially to Keresuando, but, taken as a whole, the population and the reindeer are increasing. There is a greater number in Norway than in Sweden, owing to the number of stationary bönder (farmer) and sea Lapps which far outnumber the nomads. According to the late census there are:

In Sweden (1870) 6,702 Laplanders, with 220,800 reindeer; in Norway (1865) 17,178 Laplanders, with 101,768 reindeer; in Finland (1865) 615 Laplanders, with 40,200 reindeer; in Russia (1859) 2,207 Laplanders, with 4,200 reindeer.

With those that belong to farmers and others I think we may safely say that the reindeer number about 400,000. The Samoïdes have the largest and finest breeds which are not numbered among those of the Lapps. In Kautokeino there are Lapps who own 2,000 reindeer; in Sorsele, in Sweden, one is said to own 5,000, and others 1,000 and 2,000. Some of the forest Lapps have 1,000. In Lulea Lappmark there are herds of over 2,000; in Finmarken, of 5,000; and some Lapps have owned as many as 10,000. A herd of 2,000 to 2,500 is said to give about 200 to 250 calves yearly.

Every owner has his own mark branded upon the ears of all his reindeers, and no other person has a right to have the same, as this is the lawful proof of ownership; otherwise, when several herds are mingled on the mountains, the separation would be impossible. According to custom no one can make a new mark but must buy that of an extinct herd; if these are scarce the price paid to the families that own them is often high; the name of the purchaser and each mark have to be recorded in court, like those of any other owner and property. The tax paid is according to the pasture land occupied.

---

## Appendix J.

### JOINT RESOLUTION

*To extend to Alaska the benefit of the laws encouraging in the several States and Territories instruction in agriculture and the mechanic arts.*

*Whereas* Congress passed an act, approved March second, eighteen hundred and eighty-seven, entitled "An act to establish agricultural experiment stations in connection with the colleges established in the several States under the provisions of an act approved July second, eighteen hundred and sixty-two, and of the acts supplementary thereto;" and an act approved August thirtieth, eighteen hundred and ninety, entitled "An act to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an act of Congress approved July second, eighteen hundred and sixty-two;" and

*Whereas* these several acts require the assent of the legislature of the State or Territory before their provisions become available; and

*Whereas* Alaska has no legislature, and on that account Congress has committed the charge of education in that section to the Secretary of the Interior: Therefore be it

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,* That the Secretary of the Interior is hereby authorized and empowered to extend to Alaska the benefits of the above-cited acts, and to receive and disburse through the Bureau of Education for the benefit of the said Territory all moneys now or hereafter appropriated under said acts.

## Appendix K.

San Francisco, *Dec. 18, 1890.*

Dr. Sheldon Jackson,
*Washington, D. C.*

Dear Sir:

Referring to your desire to obtain information relative to the introduction of reindeer into the northwest portion of the Territory of Alaska, I would say that in my opinion the project is entirely feasible. My experience in Alaska permits me to state on authority, that the next decade will witness the extinction of the American reindeer, or rather caribou. In 1881 when I first visited the district of Norton and Kotzebue Sounds and the lower Yukon, deer were plentiful. This past winter (1889) not a single animal had been seen within a radius of 200 miles. Similar conditions are coexisting from Port Clarence to Point Barrow, and where in former years the hunters had to travel but 50 miles to reach the deer haunts, to-day they traverse twice that distance. These contingencies arise from three causes:

1. The indiscriminate slaughter of young and old animals.
2. The use at the present day of improved weapons of the chase, in lieu of the primitive bows, arrows, and spears.
3. The conditions of wind prevailing at the seasons when the deer go to and from the coast. It must distinctly be understood that upon a supply of these animals our Alaskan Eskimo depend for clothing as well as their store of meat, should their pelagic sources of provender fail.

The proposition to introduce deer from the Siberian herds can be effected at a cost of but a few thousand dollars.

The location for the first experimental station should be on Choris Peninsula or the vicinity of Kotzebue Sound. This location has climatic similarities with Siberia. The food (moss) supply is abundant and herding easy.

As the results of this initial experiment become manifest, additional locations for herds can be established. Within two seasons the Chukchee herdsmen will be able to instruct the Eskimo in the style of herding.

I have made inquiries upon the subject and now give you the result. Ten years ago the Russian steamer *Alexander* went to the Kamchatka Peninsula, and officers of the Alaska Commercial Company bought 7 male and 7 female deer, transporting them to Bering Island (one of the islands leased by the company from Russia). Captains Blair and Greenberg, and Superintendent Lubegoil inform me that the herd now numbers 180. From this you can judge the rate of propagation.

The revenue steamer *Bear* can be utilized for transportation, and I know no man more capable of conducting the experiment than Captain Healy.

I hope that the small sum required will be voted by Congress, as unless something is done for these people their annihilation is only a question of a brief period.

The whalers have so frightened the big fish that the natives are unable to pursue them in their rapid passage, while the extermination of the walrus is almost a fact.

These remarks I present as requested.

Yours very truly,

HENRY D. WOOLFE.

[*Whole Number 215.*

U. S. BUREAU OF EDUCATION.

Reprint of Senate Executive Document No. 70, Fifty-third Congress, Second Session.

# REPORT

ON

# INTRODUCTION OF DOMESTICATED REINDEER INTO ALASKA,

WITH

## MAPS AND ILLUSTRATIONS,

BY

SHELDON JACKSON, D. D.,
GENERAL AGENT OF EDUCATION IN ALASKA.

1894.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1894.

# CONTENTS.



## APPENDIX.

# LIST OF ILLUSTRATIONS.

## MAPS.



## ILLUSTRATIONS.

# LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
*Washington, March 20, 1894.*

SIR: I am in receipt of Senate resolution of even date—

That the Secretary of the Interior be directed to transmit to the Senate a copy of the last report of Dr. Sheldon Jackson upon the "Introduction of Domesticated Reindeer into the District of Alaska."

In response thereto I have the honor to transmit herewith a copy of the report indicated in the foregoing resolution.

Very respectfully,

HOKE SMITH,
*Secretary.*

The PRESIDENT OF THE SENATE.

REVENUE-MARINE STEAMER "BEAR" MOORED TO A FIELD OF ICE, BERING SEA, JUNE 5, 1892.

# INTRODUCTION OF DOMESTICATED REINDEER INTO ALASKA.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
*Washington, D. C., March 1, 1894.*

SIR: I have the honor herewith to transmit to you my third annual report on the introduction of domesticated reindeer into Alaska.

In accordance with your instructions, I left Washington on the 13th of May, 1893, reaching Puget Sound six days later. On the 20th of May, by permission of the Secretary of the Treasury, I joined the U. S. revenue cutter *Bear* at Port Townsend, which sailed on the 26th. While awaiting the sailing of the vessel, I was able to secure two adult and four young collie dogs, to be used in herding the reindeer.

After a stormy passage of twelve days we dropped anchor in the harbor of Unalaska. While at anchor the Alaska Commercial Company's steamer *Bertha* arrived from San Francisco, with twenty-three missionaries for the Swedish, Roman Catholic, Episcopalian, Church of England, and Moravian stations in northern and central Alaska.

At 4 o'clock on the morning of June 12 the steamer *Bear* got under way for Siberia, and on the 15th reached and entered heavy fields of ice. On Friday, the 16th, having forced its way through the ice, the steamer at noon came to anchor off Eutoxia's Village, at the foot of Bald Mountain, one of the headlands of Plover Bay. Arrangements were made last season with Eutoxia, a native trader, for the purchase of reindeer through the winter and to have them in readiness for shipment upon the arrival of the *Bear*. The whalers, however, had reached the Siberian coast in advance of the *Bear*, and Eutoxia and other natives, with whom we expected to deal, were found to be intoxicated.

The next day the captain steamed over to St. Lawrence Island, where I inspected the school building. Returning again to the coast of Siberia, the ice becoming very heavy, the fog very dense, and the roar of the breakers distinctly audible, the captain concluded to drop anchor. Late in the afternoon, the fog having lifted, the anchor was hove and the ship went a few miles to the westward, coming to anchor 3 miles east of Bald Mountain. Lieut. Jarvis was sent ashore, and on the morning of the 19th returned with ten reindeer, which were taken aboard. Anchor was again hove, and at 6 a. m. the ship got under way

for Cape Aggen, where we were informed that there was a large herd of reindeer close to the shore. Encountering heavy ice, at noon the course was changed and the ship returned eastward and northward, off Indian Point, where we came to anchor at midnight of the 19th in a dense fog. At 7:30 the next morning, the fog having lifted, the *Bear* got under way for Ahkunee, on the south head of St. Lawrence Bay, Siberia. Forcing the ship through heavy drift ice, we came to anchor off Ahkunee at 6 o'clock in the afternoon. Again we found our native interpreter drunk, and but little progress was made in negotiating with the deer men for reindeer. However, next day Lieut. Jarvis succeeded in securing and bringing aboard twenty-seven reindeer, and at 8 o'clock on the 21st we were under way for North Head, Siberia; but later in the night, finding that the ice was so heavy that the place could not be reached, the course of the ship was changed eastward for King's Island, where we made fast to a large field of ice in front of the village at 10 o'clock on the 22d. At noon the ship was again under way, reaching Port Clarence at 4:25 p. m.

Upon arrival at the entrance to the port, we found eight whalers at anchor behind Point Spencer. That same evening, Mr. Miner W. Bruce, superintendent of the reindeer station, came on board the steamer and brought the news of the successful wintering of the herd at the Government station. Port Clarence was still a sheet of unbroken ice remaining from the previous winter. At 11 a. m., June 23, anchor was hove and the steamer started for the reindeer station, some 7 miles up the bay, forcing its way a portion of the distance through ice about 2 feet thick. The station being safely reached, the afternoon was spent in landing the reindeer and supplies for the station. June 24th was also spent in landing stores and supplies, looking over and inspecting the station, and taking account of the balance of supplies left over from the previous year. In the evening the four herders from Siberia and one Alaskan Eskimo were paid their salaries for the year. At 8 p. m. the steamer got under way again and returned to the mouth of the harbor, to rejoin the whaling fleet, but shortly after starting ran into drift ice, which became so solid and heavy that we were detained all night in the ice, reaching the fleet at 6:30 in the morning of the 25th. At noon on the 27th the steamer again got under way for Cape Prince of Wales, reaching the mission at 6 p. m. Many of the natives being asleep, it was some time before they came to the ship. Mr. Lopp and Mr. and Mrs. Thornton, teachers, came on board and received a large bundle of mail which the *Bear* had brought from their friends. About 9 p. m. we again got under way for Whalen, Siberia, encountering much drift ice during the passage, and also freshly formed mush ice. At 4:30 a. m. the ship was fastened to the ice off Whalen, and communication was had with the natives on shore with regard to the purchase of reindeer. Not being able to secure any there at that time, the reindeer from the interior not

having reached the coast, at 6 a. m. we cast loose from the ice and started southward through Bering Straits for South Head, encountering heavy ice all day. At 7 p. m., the fog lifting a little, land was sighted, and in half an hour we came to anchor in St. Lawrence Bay. Lieut. Jarvis, with the native interpreter, Enker, were sent ashore to communicate with the village at South Head. Upon his return to the ship at 3:15 a. m., we again got under way for the village on the southern side of Cape Kirleugoune, and in about an hour afterwards came to anchor off the village. This being the native village of one of the Siberian herders, whom we were returning home, we landed Enker and his supplies, after which we again sailed for Port Clarence, reaching there at 10 p. m.

On the 5th of July, having an opportunity to return to the Aleutian Islands via St. Michael, and thus reach the schools located between Unalaska and Sitka, and also the schools in southeastern Alaska, I availed myself of the opportunity. Upon my deciding to go south, Capt. M. A. Healy, commanding officer of the U. S. steamer *Bear*, very kindly consented to look after the reindeer station and purchase such additional reindeer during the year as he should have opportunity. In pursuance of this plan, he made a trip on the 8th of July to South Head, Siberia, where he procured thirty reindeer, which were landed at the station. He then started for Eutan and the Arctic shore of Siberia, but owing to heavy ice was unable to get beyond Enchowan. After spending a week battling with the ice and being unable to make any further progress, he concluded to change his course and visit Point Barrow, where, after inspection of the station, he could return southward and spend the month of August in procuring reindeer. Returning from Point Barrow to the Siberian coast he found that Capt. Wagner, of the schooner *Berwick*, had been over to Siberia to secure reindeer for Mr. Bruce to take to the States for exhibition purposes. It was reported by the natives that Capt. Wagner had represented that he was buying the reindeer for the Government, and had traded for the same, in part, 5 gallons of liquor, which demoralized the trade during the remainder of the season. Wherever Capt. Healy went and tried to trade for reindeer the first demand on the part of the natives was for whisky, and he reports that the unauthorized whisky trading of Capt. Wagner prevented the Government purchasing at least one hundred reindeer, besides increasing the price of those that were purchased.

Reaching Cape Serdze Kamen, August 14, the shore was found fairly clear of ice, but during the clear interval the Siberians refused to barter their reindeer, in hope of compelling the captain to sell whisky. Two of the leading reindeer men were on board four days, refusing to trade. As the ice began to come in and make it dangerous for the vessel to lie there any longer, and the natives saw that it was useless to hold out longer for whisky, they began to bargain, and the captain

was able to secure the promise of one hundred deer, but before they could be brought off from the shore to the vessel the ice compelled the captain to change his anchorage, having only twenty-six reindeer on board. He had already held on so long that he lost his propeller in forcing his way out. When clear of the ice he started for Kocodillin. Here he met with the same difficulty, the natives again refusing to trade, saying, "No whisky, no deer." While trying to secure the reindeer at this station, again the ice came in shore, seeing which the natives who had been holding out for whisky came to terms and hastened to sell. Lieut. Jarvis was despatched on shore to procure the reindeer as quickly as possible, but before the deer were all caught he was recalled on board on account of the dangerous proximity of the ice. Great fields of ice, owing to a northwestern gale, were crowding into the bay so that in a few hours the vessel was completely hemmed in. Then began the usual ramming and pushing to get the steamer free from the ice. Everybody was on deck and on the alert. It was a hard fight, and with the greatest of difficulty the ship was relieved from the pressure. No sooner was the ship free from the ice than there came a dense fog, with a heavy northerly gale, and the ship was obliged to heave to, with no chance for anchorage, and no food for the deer on board. The captain then determined to sail direct for Port Clarence, in order to land his deer, which place was reached the following day through wind and fog. Again returning to Siberia, the village at South Head was visited, and twenty-six deer were purchased, making the total number, for the season, landed at the station, one hundred and twenty-seven.

## REINDEER STATION.

On the 29th of June, 1892, I visited the head of Port Clarence, Alaska, in search of a suitable location for the establishment of a reindeer station. In making a location it was important to take into consideration nearness to the coast of Asia, character of harbor, position with reference to future distribution of reindeer, supply of good pasturage and water. Finding that all these conditions were best met at the watering station of the whaling fleet, on the extreme northeast corner of the bay, near Grantley Harbor, I selected that point for the reindeer station, and on the same day put up two tents, and landed from the steamer *Newport* the provisions and supplies for the station.

In view of the fact that the Hon. Henry M. Teller, of Colorado, as Secretary of the Interior, in the spring of 1885, authorized the establishment of the common school system of Alaska; and also in view of the fact that since the agitation commenced for the introduction of domesticated reindeer into Alaska, he has taken a leading part in securing the needed Congressional legislation, I have named the station the "Teller Reindeer Station."

Port Clarence was known to the Russians as Kaviayak Bay. It was

CAPT. MICHAEL A. HEALY, U. S. R. M., COMMANDER OF REVENUE CUTTER "BEAR," 1892.

explored by Captain Beechy of the British Navy in August, 1827, and was named by him after the British King, then Duke of Clarence. The inner harbor, opening into the northeast corner of the bay, was named after Lord Grantley, and the sand-spits at the opening of the bay were named Points Spencer and Jackson, after distinguished officers of the Royal Navy. Point Spencer, the extremity of the low sand-spit which extends some 10 miles from the coast, forms the south and west sides of the harbor. This sand-spit is low and marshy, with numerous lakes. Between Point Spencer and Point Jackson, a distance of 2 miles, is the entrance of the bay. The north and east shores of the bay arise from the sea to the mountains. Between the mountains and seashore are numerous lagoons and small lakes which in their season are covered with numerous wild fowl. The bay in extent is 12 miles from east to west, and 14 miles from north to south. At the extreme eastern end two narrow sand-spits, extending from the northern and southern shores, inclose an inner harbor called Grantley Harbor, the entrance to which is about one-third of a mile in width. Grantley Harbor is about 9 miles from east to west and 3 miles from north to south. At the extreme eastern end of Grantley Harbor is a second strait, about 300 yards wide, which connects with a third body of water, the inland lake called by the natives "Imourouk." Into this lake empty the Covvee-arak and Aghee-ee-puk rivers.

Along this line of water-courses is a native trail to Golovin Bay and Norton Sound. To the north of Grantley Harbor, Muck-a-Charlie Peak rises to the height of 1,600 feet. At the head of the sand-spit between Port Clarence and Grantley Harbor is a large lagoon, and between the reindeer station and the base of the hills on the north are about a dozen fresh-water ponds or small lakes.

The shores of the bay on the spit and reindeer station are formed of shingle or water-worn stones. These shingle beaches are a marked characteristic of large sections of the coast in northern Bering Sea and the Arctic Ocean. The shores of Port Clarence are lined with driftwood, presumably from the Yukon River. Port Clarence is the best harbor on the American side of Bering Sea, north of the Aleutian Islands, and, being but 40 or 50 miles from Bering Straits, it forms a convenient stopping place for whalers before entering the Arctic Ocean. Of late years it has become the favorite rendezvous of the whaling fleet that gathers here about July 1 to await the arrival of a vessel from San Francisco, with fresh provisions, coal, etc. It also enables the fleet to ship their spring catch of whalebone to San Francisco, before entering the dangerous Arctic. Upon my first visit, July 3, 1890, twenty-five whalers were at anchor off Point Spencer, awaiting the arrival of the annual supply ship.

At the extreme northeast corner of Port Clarence, near Grantley Harbor, and upon a small mountain creek, is the place that I selected for the headquarters of the reindeer station. A few miles to the east

of the station on Grantley Harbor was the location of the headquarters, for this region, of the Russo-American Telegraph Expedition of 1865 and 1867.

On the bluff above the beach, at the place selected for the reindeer station, stood a log of driftwood upon which had been placed an empty barrel to indicate the location of a watering station. To the top of this post we hoisted the United States flag.

A few days after taking possession, the lumber and building materials for the station having been landed, Capt. Healy very kindly sent his carpenters and a portion of his crew on shore and erected a good, substantial frame house, 20 by 60 feet in size. The supply of lumber, however, gave out before it was fully completed, so that it was not as comfortable for an Arctic winter as was intended. Before the completion of the frame building, Mr. Bruce, the superintendent, had constructed a "dugout" for himself and assistant and another for the Siberian herders. These "dugouts" were occupied during the severity of the winter weather. During the summer of 1893 additional lumber and material were sent to the station, and Capt. Healy again kindly sent his carpenters and sailors on shore to do the needed work of placing the main station building in complete order for comfortable use. The whole house has double sides and double floor, with tarred paper between. A large "lean-to" was erected in the rear of the house for the use of the herders.

## PERSONNEL.

At the opening of the reindeer station in 1892, Mr. Miner W. Bruce, of Nebraska, was appointed superintendent, and Mr. Bruce Gibson, of California, assistant superintendent. During the season, four Siberians were secured and brought over by Capt. Healy, as the principal herders. With these were placed several Eskimo men, who were to learn the trade of herding reindeer. Upon the 30th of June, 1893, the incumbency of Messrs. Bruce and Gibson having terminated, Mr. W. T. Lopp, of the American Missionary Association station, at Cape Prince of Wales, was appointed superintendent of the reindeer station. As he could not immediately remove from the mission station to the reindeer station, Capt. Healy very considerately at my request detailed Lieut. C. M. White, U. S. Revenue Marine, as acting superintendent, until Mr. Lopp could take charge. Being unable to secure an assistant from the States, Mr. John Grubin, quartermaster on the U. S. steamer *Bear* was allowed his discharge papers and made assistant superintendent of the station. The four Siberian herders during the summer were returned to their homes, and one of them, after a visit, returned for a second year. With him we secured three others who came over for the first time. Last fall nine Eskimo apprentices entered upon a course of instruction.

Owing to the murder of Mr. Harrison R. Thornton, missionary at

Cape Prince of Wales, on the 19th of August, 1893, by two hoodlum Eskimos, the mission station was closed for the year. Under the circumstances, Mr. W. T. Lopp, who had accepted the position of superintendent at the reindeer station, felt called upon to offer his services to the American Missionary Association of the Congregational Church, and return to Cape Prince of Wales in the summer of 1894, if it was thought desirable. In order to secure some intelligent Norwegian or Swede, accustomed to the methods employed in the care of reindeer in Lapland, on December 15, 1893, I sent a notice to the Scandinavian papers of the United States, that we wished to secure the services of men acquainted with the management of reindeer. The Scandinavian papers entered very heartily into the project and gave their space without compensation. About 250 replies were received. From among this number, largely upon the recommendation of Prof. Rasmus B. Anderson, Mr. William A. Kjelmann, of Madison, Wis., was selected as the next superintendent of the reindeer station. Mr. Kjelmann is a Norwegian, 32 years of age, of robust health and excellent habits. He has a good business education, writes an elegant Norwegian, and speaks the English language fluently. He can also write English fairly well. He was born in Taloik, in Finmarken; and as soon as he was old enough was set at work herding reindeer, at which he continued until he was 22 years of age. He was then taken up by a mercantile firm, and for six years had experience in buying and selling reindeer and reindeer products between Alten and Kantetein and Karasjok, in Lapland. For the past three years he has been a resident of Madison, Wis., where he has a family.

The 250 replies were from Scandinavians in the United States who in their boyhood had been brought up on the edge of Lapland and had served an apprenticeship in the herding of reindeer. With great unanimity they wrote that there are no full-blooded Lapps in the United States and that it was essential to the success of the movement that a few families of Lapps should be secured to do the herding and also to give instruction to the Eskimo young men. They also, with great unanimity, expressed the opinion that the trained dogs of Lapland were necessary for herding. They further took the position that the Lapps have methods for the care of reindeer superior to the customs of the Siberians. Upon the selection of Mr. Kjelmann as superintendent of the station, I sent him at once to Lapland for the necessary Lapps and their dogs. The reindeer fund of Congress for 1894 being exhausted, it became necessary to again appeal to private individuals for $1,000, to defray the expenses of sending Mr. Kjelmann to Lapland, and to pay the transportation of the Lapps and their families to the United States.

## HERD.

During the summer of 1892 171 reindeer were purchased in Siberia and landed at the station. At the time of landing at Port Clarence

2 were lost by straying away. Twelve were so injured by transportation from Siberia that they either died or had to be killed. During the year 13 others died from injuries received while fighting, slipping upon the ice, etc., making a total loss of 27. On the other hand, there has been a gain of 79 fawns, born in the spring of 1893, leaving, on June 30, 1893, 222 reindeer in the herd. During the summer 127 additional reindeer were purchased in Siberia, of which 124 were safely landed at the station, making a total, in September, 1893, of 346. During the winter the superintendent of the station trained 12 deer to draw sleds, and with his two teams of reindeer made a successful trip to the mission station at Cape Prince of Wales, 60 miles distant.

For further details concerning the herd and its management during its first winter on the Alaska side, see the very full report, in the appendix, of Mr. Miner W. Bruce, the superintendent of the station.

It is proposed to take another step forward, during the summer of 1894, in the progress of the reindeer movement. As the first herd was purchased by the Government from private funds, contributed for that purpose, it is proposed to give 100 head of reindeer to each of the following stations: The Congregationalists, at Cape Prince of Wales; the Swedish Evangelical Church, at Golovin Bay; the Roman Catholic Church, on the Yukon River, and the Presbyterian Church, at St. Lawrence Island, thus making four additional herds. With the increase of the herd it is proposed to offer a similar number of reindeer to other Christian denominations at work in that region who may wish to receive and care for them.

The presence of the herd attracted very great attention from the natives, and scarcely a day passed during the winter that delegations did not visit and inspect the herd, some of them coming from the inland 300 or 400 miles for that purpose. The herd is an object-lesson which has created a strong desire on the part of the natives for the time when they can have herds of their own. One man, at Cape Prince of Wales, who had some whalebone to sell, offered to sell it to the captain of a whaler on condition that he would go over to Siberia and bring him a certain number of reindeer.

The fears that had been freely expressed, that the reindeer would be destroyed by the native dogs, were not realized. The herders were armed and had strict orders to fire upon any dog interfering with the herd, and then to report the same to the superintendent, who had instructions to send for the owner of the dog and compensate him for the loss. During the entire year it became necessary to shoot but five dogs that were interfering with the herd. During the sledge trip of the superintendent to Cape Prince of Wales, two or three times he staked out the deer in the neighborhood of villages with from 100 to 300 native dogs, and in no instance were they molested. Thus the difficulties that were anticipated in the introduction of reindeer into Alaska, have, one by one, been met and solved.

TAKING POSSESSION OF TELLER REINDEER STATION, JUNE 29, 1892.
Photograph by M. A. Bruce.

It was persistently said at the beginning, that, in the first place, owing to the superstition of the Siberian natives, live deer could not be purchased; in the second place, that the habits of the deer were such that they could not stand transportation; in the third place, that the environments in Alaska would be so different from those of Siberia that they would not thrive; and, in the fourth place, that the Alaskan dogs would scatter and destroy the herd. Each one of these objections has been disproved by actual experience, and now the whole subject resolves itself into a question of time and money. If liberal appropriations can be had from Congress the work of introduction and distribution will go forward with great rapidity. If, however, the appropriations are to continue small the success will be none the less sure, but the progress much slower. The present and ever increasing scarcity of the food supply of the region would seem to make it important that the work be pushed as rapidly as is consistent with thoroughness.

As already stated, in July last Capt. Wagner purchased a few reindeer in Siberia, giving among other articles some whisky.

The result was that when the *Bear* returned to the Siberian coast after more reindeer, the natives refused to trade unless they could be paid partly in whiskey.

As Capt. Healy could not concede that to them, the Government lost the purchase of one hundred reindeer that could otherwise have been secured.

This incident is a seasonable warning to the friends of the movement to introduce reindeer into Alaska, that regulations and safe-guards must be provided by which no private parties, except the Eskimo, shall be allowed to trade for reindeer, for a term of years, and until the Government undertaking is well established.

If private parties are allowed to purchase reindeer, the price will be advanced from three to fourfold beyond their real value; and while the Government, unable to barter with liquor, will be compelled to pay the increased and exhorbitant charges or go without, private parties trading whisky will procure them at a mere nominal price.

Again, if white men are allowed to establish herds, they will not get into the hands of the natives, and the main object in the enterprise will be defeated.

I would, therefore, recommend that legislation be secured for the protection of the Government in the laudable effort to introduce domesticated reindeer as the commencement of civilization among the Eskimo of Alaska.

In 1891 small herds of reindeer were turned loose upon the islands of Unalaska and Amaknak, of the Aleutian group; and it is desirable that in the near future all the larger islands of the Aleutian group should be stocked with reindeer. I would, therefore, further recommend

that there should be a Congressional act protecting reindeer for a term of years, and placing them under the control of the Secretary of the Treasury.

EXPERIMENT STATION.

As bills are before Congress for the extension to Alaska of the provisions of the agricultural college and experiment station acts of 1862, 1887, and 1890, I would call attention to the necessities of northern and Arctic Alaska. In the ordinary experiment station investigations are pursued with regard to the best methods of rearing and caring for horses, cattle, hogs, and sheep; but in Arctic Alaska there are hundreds of thousands of square miles of area that can never be utilized for the raising of cattle, horses, or sheep; but this large area is especially adapted for the support of the reindeer. I would, therefore, respectfully urge that provision be made in the experiment act of 1890 for the establishment of an experiment station at Port Clarence, Alaska, where the principal industry shall be the propagation, management, and care of the reindeer. In southeastern Alaska the natives that are being advanced to civilization and citizenship are taught, for a living, to be carpenters, boot and shoemakers, coopers, blacksmiths, etc., but as none of these are needed in Arctic Alaska, the only pursuit to which the young men of that region can look in their progress towards civilization is the care of reindeer. To stock Alaska with reindeer, to reclaim and make valuable millions of acres of moss-covered tundra, to introduce a large, permanent, and wealth-producing industry where none previously existed, to take a barbarian people, on the verge of starvation, and lift them up to comfortable self-support and civilization, is certainly a work of national importance.

As a number of Eskimo young men should be turned out from the proposed experiment station from year to year fully prepared to take charge of and manage herds of reindeer, the industry will naturally increase and the herds become more and more distributed throughout the country until that whole northern region shall be covered with them, as similar regions of Siberia and Lapland are now covered.

The question having been raised with regard to the introduction of skilled labor into the United States, the Superintendent of Immigration for the Treasury Department was conferred with, and it was found that the laws and regulations covering immigration did not stand in the way of introduction of the Laps for the purpose of taking charge of the reindeer station for the Government.

It is hoped that the present colony of Lapps may find such advantages in Alaska for going into the reindeer business on their own account that they will become permanent citizens of the United States, and will eventually attract to Alaska an emigration from Lapland, where the restrictions thrown around the reindeer industry in some localities are such as to have created great dissatisfaction, and caused the business to be unprofitable.[1]

[1] See letters of N. Width, p. 162, and of W. Bergstrom, p. 163.

## FINANCES.

When it became apparent that no appropriation could be secured from the Fifty-first Congress, I made an appeal in the Mail and Express, of New York City, the Boston Transcript, the Philadelphia Ledger, the Chicago Inter-Ocean, and Washington Star, as well as in a number of the leading religious newspapers of the country, for contributions to this object. The response was prompt and generous; $2,156 were received.

As the natives of northern Alaska and Siberia have no knowledge of the value of money, it became necessary to change the above sum into barter goods, which was done.

These were expended as follows:

### 1891.

| | |
|---|---|
| 20 reindeer | $180.90 |
| Trip of exploration north of Bering Straits to investigate the character of the pasturage | 10.70 |

### 1892.

| | |
|---|---|
| 171 reindeer | 623.30 |
| Pay of six interpreters | 53.68 |
| Pay of superintendent from November 1, 1892, to March 1, 1893 | 558.30 |
| Provisions for herders and employés (ten men, one year) | 489.00 |
| Lamps and kerosene oil | 30.95 |
| House furniture, dishes, etc | 5.80 |
| Carpenter tools | 18.12 |
| 27 fur coats | 33.75 |
| 42 pairs of skin and fur pants | 35.50 |
| 24 Kamileka or rain-proof coats | 24.00 |
| 39 pairs of boots | 15.50 |
| 32 pairs of fur mittens | 7.40 |
| 16 pairs of fur socks | 3.65 |
| 51 reindeer skins | 38.25 |
| 62 seal skins | 27.20 |
| | 2,156.00 |

*Reindeer account, 1893-'94.*

| | |
|---|---|
| Appropriation by Congress | $6,000.00 |
| Lumber and material for building | 546.35 |
| Furniture, stoves, dishes, and supplies for building | 265.62 |
| Salary for superintendent | 540.58 |
| Provisions and supplies for employés | 1,110.58 |
| Medicine chest and medicines | 127.54 |
| Coal and incidental expenses for transportation of reindeer | 757.36 |
| Five shepherd dogs for use of herd | 152.50 |

BARTER GOODS.

| | | |
|---|---|---|
| Guns, ammunition, and traps | $1,385.35 | |
| Hardware | 223.51 | |
| Flour and provisions | 219.51 | |
| Clothes, cotton goods, and tents | 300.70 | |
| Dishes, beads, and trinkets | 167.90 | |
| Tobacco | 202.50 | |
| | | 2,499.47 |
| | | 6,000.00 |

**Reindeer purchased, 127.**

It gives me great pleasure to again acknowledge the hearty cooperation received from Capt. L. G. Shepard, acting chief of the revenue-marine division of the Treasury Department; also the valuable assistance rendered by Capt. M. A. Healy, commanding the U. S. S. *Bear*, Lieuts. Jarvis and White, and also the officers and crew. The additional duties and responsibilities that have been laid upon them, in being detailed to the transportation of the reindeer from Siberia, have added greatly to their labors, and this without extra compensation. As experience in this line becomes increasingly valuable from year to year, it is greatly desired that when any officers of the Revenue-Marine Service take a special interest in the enterprise they shall be continued in the service from year to year. I am sure that the officers who have so uncomplainingly and cheerfully cooperated in this movement will feel well repaid for the same when in after years they see the great results that have been attained.

I also desire to call attention to the very valuable monographs on the reindeer in Lapland furnished by the Hon. Rasmus B. Anderson and Mr. N. Width, which I have incorporated in the appendix to this report.

The applications received from various Scandinavians for positions at the reindeer herd have incidentally furnished much information concerning the treatment of reindeer in Lapland. As the experience of Lapland will be of great assistance in the commencement of the reindeer enterprise in Alaska, I have made extracts from the same and thrown them into the form of a symposium, which also is included in the appendix.

Thanks are also due to the U. S. Coast and Geodetic Survey for the accurate maps which they have furnished for this report.

The illustrations are from photographs taken by Engineer A. L. Broadbent, Surgeon S. J. Call, and Mr. Miner W. Bruce.

Also as illustrating the native skill in drawing and their methods of travel and hunting the wild reindeer I inclose a few pencilings made by Eskimos at the Reindeer Station.

Very respectfully, yours,

SHELDON JACKSON,
*U. S. General Agent of Education in Alaska.*

Hon. W. T. HARRIS, LL. D.,
*Commissioner of Education.*

# APPENDIX.

# Sketch Map of ALASKA

Prepared for U.S. Bureau of Education

By the U.S. Coast and Geodetic Survey

To accompany Reindeer Report by Sheldon Jackson, D.D.

U.S. General Agent of Education

in Alaska

1894

EASTERN SIBERIA

Herds of Domesticated Reindeer

Land of the Reindeer Reindeer

Herds of Domesticated Reindeer

Land of Koraks

Gulf of Anadir

BERING SEA

POLAR SEA

ALASKA

Good Pasturage for Reindeer

Pasturage for Reindeer

MEXICO

Wrangel I.

Herald I.

C. Olliutorsk

C. Navarin

St. Lawrence

St. Matthew

Nunivak I.

St. Paul

Pribilof Ids.

St. George

Attu

Agattu

Aleutian Islands

Kyska

Amchitka

Tanaga

Kanaga

Adakh

Atka

Unalaska

Umnak I.

Shumagin Ids.

To San Francisco 2369 Statute Miles

Pt. Barrow (Presbyterian)

Pt. Belcher

Herschel I.

Mackenzie R.

Ft. McPherson

La Pierre House

Pt. Hope (Episcopal)

C. Lisburne

Kotzebue Sound

Cape Blossom

Cape Prince of Wales (Congregational)

Teller Reindeer Station

Port Clarence

Arctic Circle

Yukon R.

Porcupine River

Rampart House (Ch. of England)

Buxton (Ch. of England)

Ft. Reliance

St. James Mission (Episcopal)

Nulato (Roman Catholic)

Tanana R.

Koyukuk R.

Ft. St. Mark (Ch. of England)

Unalaklik (Swedish Evangelical)

St. Michaels (Greek Catholic)

Anvik (Episcopal)

Koserefska (Roman Catholic)

Kusilvak (Roman Catholic)

Ikogmut Miss. (Roman Catholic)

Okhuganmute (Roman Catholic)

Oqogvigamute (Greek Catholic)

Oqavigamute (Moravian)

C. Vancouver (Roman Catholic)

Bethel (Moravian)

Quinehoha (Moravian)

Carmel (Moravian)

Kenai

Kutlaken

Yakutat (Swedish Evangelical)

Mt. St. Elias 18000 Ft.

Chilkat

Haines (Presbyterian)

Chilkoot

Pyramid Harbor (Presbyterian & Roman Catholic)

Douglas (Quaker)

Hoonah (Presbyterian)

Hutchinson (Presbyterian & Greek Catholic)

Wrangell (Presbyterian)

Sitka (Greek Catholic)

Fort Wrangell (Presbyterian)

Metlakahtla (Episcopal)

Jackson (Presbyterian)

Kasaan (Presbyterian)

Queen Charlotte Islands

Kodiak (Baptist)

Wood I.

Bristol Bay

Nushagak R.

Kuskokwim R.

Togiak

Kuskokwim Bay

Nelson Island

Nunivak I.

Norton Sound

Port Clarence

Indian Pt.

St. Lawrence

Village

Lights Cove Bay

Mt. Edgecumbe

Statute Miles

SEx. 70 53 2

TELLER REINDEER STATION, PORT CLARENCE, ALASKA, 1893.
Photograph by A. L. Broadbent, U. S. R. M.

# REPORT OF MINER W. BRUCE.

TELLER REINDEER STATION,
*Port Clarence, Alaska, June 30, 1893.*

DR. SHELDON JACKSON,
*U. S. General Agent of Education in Alaska.*

SIR: I have the honor to send herewith for your consideration my report for the fiscal year ending June 30, 1893, concerning the affairs of the Reindeer Station, together with other matters that came to my notice, some of which I trust may be interesting to you.

My first impression of the selection made by you for the location of the Reindeer Station, as viewed from the entrance to Port Clarence one year ago, was a favorable one, and after a residence here of one year, although within one degree of the arctic circle, I am fully convinced that a better selection could not have been made.

Besides being within a few hours' sail of the point on the Siberian coast from which reindeer are shipped, the natural lay of the country makes it easy of access from all directions. This is a most important feature, should it become necessary for any cause to drive the herd away, or for the distribution of reindeer to different points on the coast and into the interior, as is contemplated in the future.

It is located on the only good harbor between Golovin Bay and Kotzebue Sound, and the fact that the whaling fleet rendezvous here causes natives to come annually from the different settlements many miles away, thus affording them an opportunity to see the reindeer and get acquainted with the object contemplated; and there are other features which another location might not afford.

The location of the Reindeer Station is a beautiful one, and when viewed in midsummer is very picturesque. It is situated on the mainland, on the north side of what is known as Clarence Bay or Port Clarence, a body of water of about 20 miles east and west, and 5 miles north and south. The water on the south side washes upon a narrow sand spit, taken out from the mainland in a sort of semicircle, the western end of which curves toward the northwest until it approaches within about 2 miles of the coast, thus forming practically a landlocked harbor, within which vessels find a safe and quiet anchorage from the often rough and turbid waters of Bering Sea.

Mountains rise abruptly from Cape Prince of Wales, the most westerly point of this continent and about 60 miles east of the station.

The highest of these will not exceed 1,500 feet, and they form a bleak and rocky coast, which gives way to sandy beaches for 4 or 5 miles only, the rest of the coast being rugged for 35 miles east. Here they recede to the north, gradually merging into hills which form a background to a level stretch of country from one-half to 1 mile wide and about 30 miles long, near the center of which stand the reindeer headquarters.

The hills immediately north of the station rise to a height of 400 or 500 feet, some of which are nearly barren, caused probably from the severe winds that prevail in the summer, which, taken in connection with the long spells of rain in that season, seem to have destroyed the vegetation that on the sides of the others has taken deep root.

Toward the eastern end of the level country the hills gradually diminish in height and recede to the north in graceful waves of rolling uplands for many miles.

To the east a range of mountains rises more or less abruptly to a height of 1,000 or 2,000 feet, and from the natives I learn that the same character of rough country extends eastward into the interior 50 or 60 miles.

In August last, in accordance with your instructions, I made a trip into the country northeast of the station, and reached a point perhaps 40 miles distant. I traveled by water, in an Eskimo oomiak or skin boat, and our course lay through what is known as Grantley Harbor, a body of water 6 or 8 miles long by about 3 wide. It has depth of water sufficient to float a large ship, and opens out from Clarence Bay by an arm 20 or 30 rods wide. This harbor connects on its eastern side with a channel of water but a few rods wide and 3 or 4 miles long, which winds gracefully through hills a hundred feet or more high on both sides, and, judging from appearances, it has an average depth of 20 feet or more.

The channel is remarkable for its gentle curves, and as it winds between the hills with an almost uniform breadth it has more the appearance of a canal carefully cut by the hand of man than being the work of nature.

At its northern extremity it opens into a basin of water a mile or so wide, and upon the northwest shore we found an excellent camp for the first night out.

Several times during the day we made a landing, and, ascending the top of the embankment, found a thick growth of grasses and flowers, among which moss grew in abundance. The contour of the country to the north was a gently undulating plateau, stretching out as far as the eye could reach.

The following morning I ascended the hill, at whose base we had camped, for the purpose of obtaining a view from that point. It was about 500 feet to the top, and, although somewhat abrupt, the sides were covered with short willow and alder bushes, grass, and undergrowth similar to that found the day before. Flowers were every-

where abundant, and of many varieties. Birds sang and flitted among the bushes, coveys of ptarmigan sprang out at my approach, and the sun, which at times shone through lowering clouds, helped to make the day such an one as is often experienced in summer among New England hills.

When the top of the hill was reached a view to the north was had for 20 miles or more. The rolling uplands gradually receded until they reached a low, flat marsh through which the stream known as the Kar-avaxarak River was seen wending its way southward. As far north as the eye could reach not a mountain was to be seen, and the bank of the river gradually rose on each side to higher land until it disappeared from view in gentle undulations many miles to the north.

From the point from which I made my observations to Kotzebue Sound, 60 or 70 miles north, I am told by natives the country is comparatively level, no mountains being encountered until within a few miles of the sound, and they are not higher than those east of Cape Prince of Wales.

To the east and southeast, but 6 or 8 miles away, lie the mountains visible from the station, and not a particle of snow was to be seen upon their highest tops.

Among the grasses were found bunches of redtop and patches of timothy, while on the lower lands soft and nutritious grass, resembling blue joint, was in places abundant.

In the whole aspect of the country, its soil and verdure, there was not the remotest appearance of anything that would suggest that we were within less than one degree of the line which defines the arctic circle.

After traversing the sides and top of this hill and viewing the country until I became satisfied that deer food was abundant, I took to the oomiak and crossed to the opposite shore.

Here the lowlands reach the base of the mountains in from 2 to 3 miles, and the country is lower than upon the west side. The same abundance of feed exists, however, and moss perhaps in greater quantity. In one locality it grew to such extent that four of my natives scraped up with their hands in a few moments enough to make a pile 6 or 8 feet high and as many feet through.

Moss grows with little depth of root and is easily plucked from the loose soil. I here state that moss is, strictly speaking, a winter food. It seems to acquire its nutritive quality as the cold season advances and possesses it to such an extent that reindeer thrive upon it as well as upon the grass, willow, and other feed for which they abandon it at the first appearance of spring.

I will further state in this connection that the surface of the country which I have described, and which has the appearance of being smooth, is an endless succession of broken surfaces or low mounds varying from a few feet to as many yards across, the spaces between being

filled with water. The ground is loose and spongy, and in stepping upon it one will sometimes sink down several inches. It is what is known as tundra.

The character of soil among the tundra is generally a dark, sandy loam, sometimes having sand or gravel for subsoil, but gray or bluish clay is often found. In places where I have drained off the water the soil seems to settle, and in a short time has the appearance of prairie land with more or less tenacity of sod.

While exploring the country to the east on this trip, I dug into the earth several times, and found the soil to be dark, sandy loam. In one place it was over 4 feet deep, having blue clay for subsoil, and not a stone was encountered.

The result of my explorations on this trip showed an inexhaustible supply of reindeer food everywhere. I had one of our Siberian herders with me, and he gave me to understand that the advantages of this country for grazing purposes were far in excess of those with which he was familiar in Siberia. The question yet to solve was whether the food was accessible to reindeer in the winter, or whether the snow would cover it to such a depth, and crust form over it so hard as to make it impossible for them to paw through it for food.

During the summer, Mr. Gibson, the assistant superintendent of the station, explored the country to the north and northwest of here, reaching a point about 25 miles toward Kotzebue Sound. He found the country a little more hilly than I encountered east, but possessing an abundance of grass and moss. He had one of the Siberian herders with him, and he expressed himself as satisfied with the appearance of the country for grazing purposes, and that it possessed far greater abundance of feed than that of the reindeer ranges in Siberia.

In March last Mr. Gibson also made a trip south of the station along the coast, reaching a point as far as Golovin Bay, and in his absence of three weeks viewed considerable country and talked with many natives concerning that back in the interior. The result of his observations confirmed my hopes in regard to the country in that direction.

During the past winter the station was visited by a Mr. John A. Dexter, who has spent the last two years in mining in the vicinity of Golovin Bay and has explored a considerable part of the country between that point and St. Michaels, and also into the interior towards the Yukon. From him I learn that that section compares favorably with the one already described in its advantages as a grazing country, besides possessing what may prove to be an additional advantage, namely, the existence of several varieties of timber in greater or less quantities.

Mr. Thomas Lopp, one of the teachers at Cape Prince of Wales, who has spent three years in this country, made a trip during last winter as far north as Point Hope. He had visited this station the summer before and was familiar with the objects contemplated in its establish-

LANDING THE FIRST BATCH OF REINDEER AT TELLER STATION, JULY 4, 1892.

ment. His knowledge of the native language made him especially competent to pursue inquiries in regard to the country back from the coast along which he traveled, and I am glad to be able to state that his report confirmed my hopes in regard to that region as a good reindeer country.

Thus, it is fair to presume that the country in which competent and reliable investigation has been made during the past year possesses an abundance of food and is capable of supporting many thousands of reindeer. Taken in connection with what information has heretofore been obtained concerning the country still further north, and also east into the interior, almost without limit, the whole section known as Arctic Alaska is a vast natural reindeer range and capable of supplying food for thousands of these valuable animals that are calculated to supply the great needs of the native inhabitants and it is to be hoped in the not far future contribute to their comfort and civilization.

During the past year we have been thrown constantly in contact with the natives of this country. The inaugurating of an enterprise involving so much importance to these people, and its future depending so much upon the first year's venture, made our association with them at times very close, and afforded us an opportunity to learn many of their customs and much of their history that otherwise might not be obtained in a number of years.

Our nearest white neighbors are two teachers and their wives 60 miles west and one white man 150 miles south. The only time during the past year that we have heard an English word spoken was on two occasions, when we visited those in the west for a few days and when our neighbor on the south visited us.

One of the great difficulties we have had to contend with has been our utter ignorance of the native language, but at this writing I am happy to state we are able to speak and understand it sufficiently for all practical purposes.

## REINDEER.

In this report I will first discuss the reindeer, following which will appear affairs concerning the station and, last, my recommendations.

There were 171 reindeer landed at the station, purchased by yourself and brought hither from Siberia on the U. S. revenue steamer *Bear*, Capt. M. A. Healy, commanding, as follows:

| | |
|---|---|
| July 4, 1892 | 53 |
| July 10, 1892 | 14 |
| July 22, 1892 | 27 |
| July 29, 1892 | 65 |
| August 10, 1892 | 12 |
| Total | 171 |

*Reindeer lost by death or otherwise during fiscal year ending June 30, 1893.*

| How lost. | Number. | Date. | Sex. | |
|---|---|---|---|---|
| | | | Male. | Female. |
| Strayed | 2 | July 4 | 1 | 1 |
| Lying near station with back injured (killed by dogs) | 1 | July 6 | ..... | 1 |
| Fatally injured in shipping (died) | 1 | July 26 | ..... | 1 |
| Do | 2 | July 29 | ..... | ..... |
| Fatally injured in shipping, from being hobbled (died) | 1 | ...do.... | 1 | ..... |
| Hoof rotted off, from being hobbled (killed) | 1 | Aug. 8 | ..... | 1 |
| Fatally injured in shipping (died) | 1 | ...do .... | ..... | ..... |
| Do | 1 | Aug. 10 | 1 | ..... |
| Fatally injured in shipping (killed) | 1 | ...do .... | ..... | ..... |
| Fatally injured in shipping (died) | 1 | Aug. 11 | ..... | 1 |
| Fatally injured by bull (died) | 1 | Aug. 18 | 1 | ..... |
| Fatally injured in shipping (died) | 1 | Aug. 19 | ..... | 1 |
| Fatally injured in fighting bull (killed) | 1 | Sept. 2 | 1 | 1 |
| Fatally injured in fighting bull (died) | 1 | ...do .... | 1 | ..... |
| Delivered to U. S. revenue steamer Bear, by order of Dr. Jackson | 4 | Sept. 4 | 3 | 1 |
| Injured by bull (died) | 1 | Oct. 2 | ..... | 1 |
| Died, cause unknown | 1 | Oct. 27 | 1 | ..... |
| Died, neck broken accidentally | 1 | Nov. 3 | 1 | ..... |
| Hip broken in fighting (killed) | 1 | Nov. 22 | 1 | ..... |
| Slipped on ice while chased by bull and leg broken (killed) | 1 | Jan. 2 | ..... | 1 |
| Slipped on ice while breaking to sled, leg broken (killed) | 1 | Feb. 17 | 1 | ..... |
| Neck broken by fall while being chased by bull (died) | 1 | Mar. 6 | 1 | ..... |
| Leg broken by slipping when chased by bull (killed) | 1 | Mar. 27 | ..... | 1 |
| Hurt by slipping down on ice (died) | 1 | May 2 | ..... | 1 |
| Ailing some weeks, probably injured in giving birth (died) | 1 | June 2 | ..... | 1 |
| Ailing some weeks, probably injured in transportation (died); found with four ribs broken | 1 | June 11 | ..... | 1 |
| Taken from deer (died) | 1 | Mar. 8 | 1 | ..... |
| Found in deer | 1 | Mar. 27 | 1 | ..... |
| Stillborn | 1 | Apr. 5 | ..... .... | 1 |
| Do | 2 | Apr. 20 | ..... | 2 |
| Do | 1 | Apr. 22 | ..... | 1 |
| Do | 1 | Apr. 23 | ..... | 1 |
| Found in deer | 1 | May 2 | 1 | ..... |

SUMMARY.

| Reindeer. | Sex. | | Total. |
|---|---|---|---|
| | Male. | Female. | |
| Number originally in herd | ..... | ..... | 171 |
| Shipped per U. S. revenue steamer Bear Sept. 4, 1892 | 3 | 1 | 4 |
| Strayed away during quarter ending Sept. 30, 1892 | 1 | 1 | 2 |
| Died during quarter ending— | | | |
| Sept. 30, 1892 | 6 | 5 | 11 |
| Dec. 31, 1892 | 3 | 1 | 4 |
| Mar. 31, 1893 | 2 | 2 | 4 |
| June 30, 1893 | ..... | 3 | 3 |
| Total | 15 | 13 | 28 |
| Total number of original deer in herd June 30, 1893 | ..... | ..... | 143 |
| Fawns stillborn and taken from deer during quarter ending June 30, 1893 | 3 | 5 | 8 |
| Fawns born * during months of— | | | |
| April | ..... | ..... | 68 |
| May | ..... | ..... | 10 |
| June | ..... | ..... | 1 |
| Total | 28 | 51 | 79 |

* Births all occurred from April 13 to June 2, inclusive.

Bulls castrated during months of May and June, 1893: 1 year old, 6; 2 years old, 7.

*Number of each sex and age June 30, 1893.*

| Reindeer. | Fawns. | 1 year. | 2 years. | Total. |
|---|---|---|---|---|
| Bulls | 28 | 8 | 2 | 38 |
| Geldings | ..... | 12 | 15 | 27 |
| Females | 51 | 21 | 84 | 156 |
| Total number of reindeer in herd June 30, 1893 | 79 | 41 | 101 | 221 |

In the table given it will be observed that of the total number of thirty-one lost during the year, the deaths of twelve were caused from injuries sustained in transportation.

The reindeer were first tied with leather straps around their feet just above the hoofs. In this condition they were lifted by hand into one of the boats belonging to the *Bear* and hoisted on board that vessel by block and tackle, when the hobbles were removed, and they were then turned loose in a pen made on one of the lower decks.

The transportation from the point of shipment to the station involved but a few hours, when the reindeer were again hobbled, lowered into the small boat, rowed ashore, lifted to the beach by hand, and the hobbles removed, when they were finally turned loose.

While the greatest care was exercised by the men of the *Bear* in handling the reindeer, it is reasonable to suppose that, in their struggle during the operation of tying them and their efforts to free themselves when tied, together with the cramped condition they were in while in the small boat, more or less lameness would naturally be caused, and in some instances serious injury.

While I might suggest some method of transportation that would involve less chance of injury to the reindeer, such, for instance, as towing them in a large barge across the straits, and, when the station is reached, driving them off it into the water to the shore, Capt. Healy has doubtless reasoned out some plan that would prove more practicable and one that would fully meet the present objections.

In the confusion attendant upon the establishment of the station, together with the scarcity of lumber with which to construct a corral, it was impossible to arrive at anything like a correct account of the number of females in the herd. We were certain of one fact, however, namely, that the proportion of bulls was largely in excess of what it should have been, and to this cause may be ascribed the loss of at least eight reindeer from injuries received, while some of the stillborn may have been from the same cause.

The reindeer, I am glad to be able to state, were in splendid condition throughout the long and severe winter.

In this connection I will state that although reindeer possess endurance to a remarkable extent, notably the withstanding long and severe spells of cold and stormy weather, they are in some respects as tender as a child. Their flesh is easily torn, the bones of their legs break

almost as easily as pipe-stems, and their spinal columns will not bear the weight of a few pounds, if suddenly placed upon them. Indeed, the favorite manner of throwing a reindeer down is for a man to lean across its back, gradually laying on his whole weight, until it drops to its knees and then to the ground. We have found also that a slight injury to the back is more serious than a broken leg, for in the case of several that we have tried to nurse back to vigor that have been injured in this way, in every instance they have had to be killed.

A full grown reindeer—and they may be considered full grown at the age of three years—is about 4½ feet high and about 7 feet long from its nose to its tail.

One will weigh at this age, when in good condition, about 250 pounds, and will girth about 5½ feet. There is little difference in size between a male and female, but a gelding is a trifle heavier.

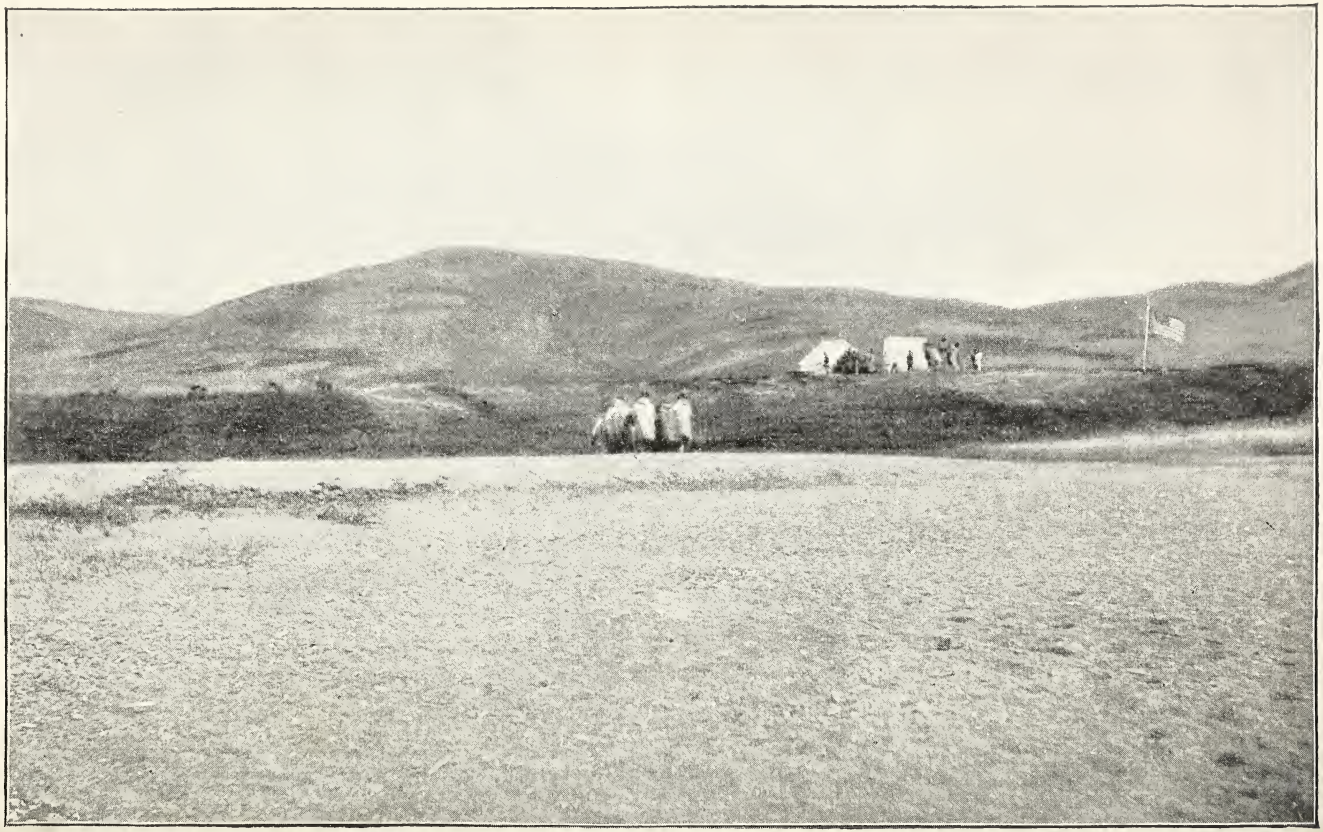
The horns of the reindeer, when full grown, measure about 2½ feet from tip to tip, and there is but little difference between those of the male and female. Those of the male are a little larger around. Sometimes there is a fan-shaped horn extending from the inside of one or the other, about a foot in length. If it has any special use, such as digging into the snow for food, we have never been able to witness it, and if used by them when amid dense undergrowth, we are unable to say in what manner, as this country is destitute of anything in the way of trees, except a few scattering alder and willow bushes of stunted growth.

The horns of the 1-year old are usually of but one prong on both sides of the head, 18 inches or so long, having a sprout or two on each 2 or 3 inches long. In the 2-years old the horns are more fully developed, and, like other animals, there are cases where full growth occurs in some earlier than in others.

It is a very common thing for a reindeer to have a horn broken off, and it is very easily done. Indeed, by the middle of winter nearly every reindeer had lost one or both of its horns, or fragments only were left. In two or three instances where a sled deer had lost one horn, we sawed the other off within a few inches of its head, and it occasioned no pain.

The reindeer that had lost its horns commenced to sprout new ones as early as April 7, and within a couple of weeks they were 4 or 5 inches long, of a dark brown color, and well covered with short fuzzy fur. All deer shed their horns soon after spring comes, and by the first of June the new ones are from 1 to 2 feet in length, being yet in the velvet, but rapidly harden as soon as the cold weather approaches.

The horns of the reindeer are of very little use to the natives. Their greatest thickness is only about 2 inches at the head, and they gradually taper to a point. The only use we have seen them put to is for bents to a sled. They are cut so as to preserve the curve, the ends resting on the runners, and the middle supporting the strips of wood on the top of the sled.



CARRYING REINDEER FROM BEACH TO STATION.

The color of the fur of the reindeer is varied. Perhaps the most common is the seal-brown, and when free from other shades is decidedly rich in appearance. The fur, for such it may properly be called, after it has taken on its summer coat is soft and glossy and about the length of that of the fur-seal. When taken at this season, if properly dressed, it sheds very little, if any at all. The skin is soft and pliable, and but little thicker than that of the fur-seal of the same size.

Of the spotted reindeer, perhaps the next prettiest is that having large white spots among the deep brown, but of course this is a matter of taste. Occasionally one is found almost entirely white, or with white streaks extending lengthwise or around the body, and sometimes with white spots of a uniform size completely covering the skin. Reindeer commence to shed their coats as soon as the snow begins to thaw in the spring, and in a short time they look ragged, and have much the same slovenly appearance that domestic animals do at that season.

The method adopted by the natives in dressing skins is to first rub water all over the surface. Sometimes human urine is used instead of water, but it does not appear to be the common practice. It is said that a skin dressed in this way closes more firmly on the fur, thus preventing its shedding; but I have discovered little or no difference between skins dressed in this manner and where water is used.

After the skin is wet down it is tightly rolled up and tied. In this condition it is allowed to go through a sort of sweating process for a day or two, when it is spread upon a smooth surface, and the native, sitting astride of the skin, scrapes it with a sharp instrument until the thick substance and fat are all scraped off. When the skin is thoroughly scraped it is rubbed with the hand until it is soft and pliable. Sometimes powdered stone is sprinkled over the skin after being scraped in order to give it a softer and prettier finish.

The reindeer skin was at one time the common one used by the natives for their clothing, tents, and everything else, but now the seal and ground-squirrel skins play an important part.

From Point Hope on the north to St. Michael's on the south, natives have visited the station during the past year, and among all these, except the natives coming from Cape Prince of Wales, reindeer-skin clothing has been the rare exception. They were clothed generally in squirrel skins and occasionally in rabbit and seal. Reindeer skins have become a matter of luxury with the natives, and only those who deny themselves other things that they need for their comfort wear reindeer clothing.

In the country about Kotzebue Sound occasionally a skin is secured from a wild reindeer, but it so rare that it assumes somewhat the nature of a curiosity. Thus it will be seen that, practically, all the reindeer skins used by the Alaskan Eskimo come from Siberia.

When it is understood that the proper clothing for a native to be dressed in consists of two suits, worn at the same time, one with the

fur side to the body, the other with the fur outside, a pair of skin socks, a pair of boots, and a pair of mittens, the whole probably requiring ten skins, it will be seen that a small fortune, in the way Eskimo estimate capital, is necessary to procure them.

The price demanded by the Siberians for skins makes them a luxury, as they must be paid for in furs, and this will be more readily understood after reference to that portion of my report respecting the scarcity of fur-bearing animals in this country.

The light or summer skins are used for the under suit, gloves, mittens, legs of boots, and fancy articles; the heavy or winter skin for outside clothing and for bedding.

Among the most valuable parts of the reindeer skin is that of the legs from the knees to the hoofs. The skin is tough and can be dressed very thin, even if taken in winter. The fur is fine, thick, and short, and, when made up, is impervious to cold. Besides being so very warm, the snow does not adhere to them as to the rest of the skin.

The teeth of the reindeer consist of a row on the front of the lower jaw and a row of back teeth on both upper and lower jaws. Those in front are used with the upper lip to pull off feed and the back ones for masticating it and for chewing the cud. They are able to pick off grass and willow sprouts with considerable ease, and moss lies so loosely on the ground that it offers but little resistance.

Occasionally a belt is seen worn by a native woman made from the teeth of the reindeer. But they were gathered at a time when they were a trophy of the hunt and chase.

The hoof of the reindeer seems at a glance to be too large for the animal, in proportion to its body and legs, but when traveling in damp snow, or where the soil is miry, it is seen they were given him for a wise purpose.

At the bottom they are as wide as a good-sized steer's, and spread over a surface sufficient to prevent him from settling down to any depth.

It is known how useful an ox is in soft ground, and how easily he can pull a load where a horse would give up in despair; and the same good purpose serves the reindeer in what appears to be a clumsy and awkward extremity to the delicately formed legs of this fleet animal.

One thing that struck me strangely when the first consignment of reindeer was received at the station was the quickness with which a small bunch of them would get back to the main herd after they had become separated, and this peculiarity, I am glad to say, seems to be intuitive.

The reindeer were landed on the beach, their feet tied with straps, and they were either led up to the level land back of the station, or carried there, and then set free. They no sooner found themselves at liberty than they started at a breakneck speed in whichever direction their dazed condition suggested. After they had run a mile or so they gradually slackened their pace, and, after stopping to take their bear-

ings, as it were, in which they sighted the others quietly feeding, they slowly and cautiously approached them.

When all together, one of the herders could approach within 50 feet or so without occasioning any alarm or uneasiness. If a part of the herd got separated, as sometimes occurred through fright, after they had dashed off a mile or so with the fleetness of the wind, and it looked as if a chase of several miles would have to be made to bring them back, if, indeed, they were ever found, they would almost as certainly circle around, and in a short time rejoin the rest.

It is from this peculiarity that the herders are able to herd the deer together. Although the four Siberians brought here with the reindeer are all fleet of foot, they could no more overtake a bunch of frightened reindeer than a stage horse could a lightning express train; but they keep on running, and gradually get to the other side of them, when, either by shouting or whistling, they get them headed back, when all that is necessary is to quietly saunter along, and the reindeer will find their way back to the herd.

The force employed as herders consists of four Siberians and four Alaskan Eskimos. Two of the latter belong to Cape Prince of Wales and two to the village near the station. Up to the 21st of last November they were divided into two watches of twenty-four hours each, two of the Siberians being placed with two of our natives. On that date the watches were changed to three, so as to give them twelve hours on and twenty-four hours off. This made their duties less irksome through the long nights of winter, and only placed each watch in the field each third night.

As winter approached, an abundance of reindeer clothing was prepared for the herders, and when one was fully dressed, he looked double his natural size, and during the severest weather he could stand for hours, almost, in one position, facing the keen wind with the fur trimming of his hood drawn over his face, and be as oblivous to the cold as though the mercury were only at freezing point.

Besides dressing our herders so they would not suffer from cold while in the field, we wanted to impress the natives who saw them with the fact that the employés at the station were well clothed, and that in this respect at least the position of herder was a desirable one. The same principle was carried out in the matter of their food. Their diet consisted of good, nourishing food, and plenty of it, and one of our herders looked, as he really was, well clothed and well fed. This fact was by no means overlooked by the natives, as was evidenced by the many applications for positions on the force.

It may be proper to state here that, in the light of the past year's experience, a force of eight or nine herders is amply sufficient for the safe care of a herd of a thousand or more reindeer. Of course an occasion might arise when an additional number would be necessary, but careful observation of the habits of the reindeer certainly justifies

the belief that the number given above is amply sufficient. I will even go further, and say that the same number of herders could safely care for two or three thousand. Indeed, it has appeared to us that the larger the number of reindeer the more easily they were handled in the field.

Another point in this connection is that if for any cause a larger force were required, as, for instance, looking for stray deer, or getting them closely bunched together, there are always natives enough about who would cheerfully render any help needed, and in this, like every other kind of work, they are easily paid with a liberal supply of food.

While in some respects the employment of Siberians could easily be dispensed with, there are features connected with the business that perhaps make it best to continue the practice for the present. The mere matter of herding reindeer is one that the Alaskan Eskimos are just as competent to discharge as the Siberians and when they have learned to throw the lasso and harness a reindeer they have accomplished the hardest part of the work. The presence of the Siberians made the men in charge feel more secure, and when winter once sets in they are as much separated from Siberia as though they were in another world, for there is absolutely no communication between the two sides for eight months, or until the ice disappears from the straits in the summer. They therefore realize that their only real friends are the white men at the station. If from any cause the Alaskans are disposed to give up the work, the Siberians can care for the deer until other help is secured.

In the course of four or five years there ought to be a sufficient number of Alaskans who have gleaned a knowledge of the business to make it possible to dispense with Siberians entirely, and the $75 per year paid each of them could be used for some other purpose.

The duties of a herder, except when one or more reindeer are wanted to be broken to the sled, are by no means laborious. The reindeer are so quiet and cause them so little trouble that they find ample time to sleep, as is shown by the fact that, even after their watch in a long winter night, they return to the station in the morning apparently as fresh as if they had just crawled out of a sleeping bag.

In summer they are so clothed that, although it may be raining, they can sit down and enjoy a comfortable snooze, and in mid-winter, unless the wind howls pretty fiercely, they crouch down on the snow, much as an Eskimo dog does, and sleep soundly.

The reindeer seldom wander around, and will feed in one locality for days. They eat awhile and then lie down, and when their appetite again moves them they go to eating again, and this may be said to be their only diversion from one year's end to another. The females are a little inclined to rove about toward spring, but this disposition is quieted as soon as the young ones are born.

The Siberians tell me that reindeer are more easily herded here than in their country, which is doubtless accounted for by the fact that they

TELLER REINDEER STATION. RAISING THE FLAGSTAFF, JULY 5, 1892.

Photograph by M. W. Bruce.

find food so easily that they do not have to travel a long distance before getting enough to satisfy them.

In the past year's experience we found that some things in which we anticipated the greatest difficulties were passed over with the least trouble; such, for instance, as the straying off or stampeding of the reindeer in snowstorms.

Winter may be said to have set in on September 14, the date on which snow first fell at the station, although it was first seen on the tops of the mountains east on August 28. No severe storm occurred, however, until November 8, when we experienced the first blizzard. It was quite severe, although the mercury showed 4° above, and lasted two days. The reindeer stood it splendidly, and when it cleared up it was found that none had strayed away.

This may be taken as a fair illustration of the experience with the many storms that occured, until the midnight sun may be said to have made them impossible, with but one exception. On February 12 a severe blizzard commenced about 5 o'clock p. m., with the mercury standing at 5° below zero, and it raged furiously for forty-eight hours. Shortly after the storm commenced the herders could see but a few feet from them and when it finally calmed down a part of the herd were found to be missing. After looking for them a couple of hours, they were seen being driven toward the herd by a native who had found them quietly feeding about 3 miles away. There were thirty-nine of the strayed ones, and it was evident they had not stampeded and traveled with the storm, as cattle do, but had simply wandered away from the main herd, probably without being conscious of it.

In a few hours the storm again commenced, and it may be said to have continued until February 26, there being only a few hours now and then when a blizzard was not raging.

In storms of this character there is nothing the herders can do but pass the time as best they can. They can not leave the herd to return to camp until the relief watch arrives, and sometimes it is several hours before they can find the herd, when those who have been exposed to the storm return to the station as quickly as the state of the weather will permit.

I will say in this connection that not a single case of freezing occurred among the herders during the winter, while it was a common thing for natives to be seen frost-bitten.

Another trouble which we anticipated and which occasioned us constant anxiety was that the ground would be covered with snow to such a depth that, should a crust form, the reindeer could not paw through it for feed.

From all we are able to learn, perhaps more snow fell last winter than usual. In ravines and gulleys having embankments 15 and 20 feet high, by the 1st of February they were filled to the top, and crust formed several inches deep, nearly as hard as ice. On level ground in many places only 3 or 4 inches of snow fell.

One of the disagreeable features of this country is the severe winds that prevail both summer and winter. In the former season they are mostly from the south, while in the winter the prevailing wind is from the north. They seem to rise without regard to the time of day, and cease without being influenced by the sun, as usually occurs in most countries. But we have learned to look upon the winds more in the light of a blessing than otherwise. It is seldom that a snowstorm prevails here when the flakes fall quietly; but it is accompanied by more or less wind. It is thus hurled in clouds or rolled across the level country until it finds a resting place in some hollow or is banked against the side of a hill. More or less ground is thus left so nearly bare that the reindeer have no trouble to find the feed. They dig away the snow with one or other of their fore feet, and usually one or two scrapes lay the feed bare. After they have nibbled at this patch, they move on a few feet and attack a new spot.

On each occasion when I have gone out to the herd during the past winter, I have found the condition of the snow such that no trouble was experienced by them in getting feed, and this was true not only on the level land, but upon the sides of the hills.

Thus it is reasonably safe to conclude that in any part of this country where it is not too rugged or mountainous, and where the wind has full scope, feed for reindeer can be had with little or no trouble. It is so abundant that it is doubtful if the occasion will ever occur when it will become necessary to move the herd to such distance as would furnish them a better supply of feed than the ground they have ranged over.

The blinding snow clouds seem to have no effect upon the reindeer other than to completely cover them. When it is driven into their fur and they become too heavily loaded they shake themselves from it as easily as a duck will water.

I will say in this connection that, anticipating that it might become necessary to move the herd in search of food, preparations were made early in the winter which put us in condition to move at an hour's notice. Sleds were made and tents constructed out of reindeer skins, and we could have traveled a hundred miles or more with little trouble other than that occasioned in transporting our supplies.

The birth of the first fawn occurred on April 1. One of the herders came into the schoolroom during the session and suddenly made known the fact, and the announcement of the arrival of a new baby would not occasion more joy among the children in a white family than was evinced by the little Eskimos. They seemed to lose all interest in their studies, and, when dismissed, a number of them walked out to the herd. My first impression was that it was an "April fool" joke sought to be played on me, and I did not enthuse much over the news on that account, until the report was verified when the children returned. It proved to be true, and I concluded to christen it April Fool in honor of the day of its birth.

The wind commenced to blow hard toward dark, and some snow was flying. I asked the herders if there was not danger of the young one dying from cold, and thought, if there was, we would have it brought to the house. The idea was scoffed at by the Siberians, and their folly cost us our firstborn. In the morning it was found to have perished from cold.

On March 8 a female got injured, probably in trying to escape from a bull. The head of a fawn protruded from her womb, but it was lifeless, and she was unable to give birth to it. So it was taken from her. Another fawn was found in a female killed on account of a broken leg. In both instances the fawns would have been born within two months.

On April 6 a female that was feeding some distance from the herd gave birth to a fawn during the night and it was found dead. The mother had broken one of her hind legs some weeks before, and after splinting and bandaging it, she was turned loose. The fawn was doubtless a premature birth, as it was very thin. Further reference will be made to this deer in another part of my report.

The first birth that occurred naturally that lived was on the night of April 13, and the following day four more were born. Although freezing cold, and the ground was covered with snow, the weather was pleasant, and the youngsters seemed to be doing so nicely that it was thought best to let them remain with the herd. They all survived and gained strength rapidly. Between this date and the 23d of the month twenty-three were born, and at the close of the month the number had increased to sixty, and not a death occurred among them. The weather had moderated, and the sun had shown with so much warmth toward the end of the month that for a few hours each day the snow had thawed.

In a number of instances the fawns were dropped where the snow was several inches deep, and they did not seem to chill or suffer any inconvenience. When a few hours old, and it had been suckled by its mother, it would quietly lie down on the snow and sleep as calmly as if its bed had been of down. When a few days old it was a common thing to see one or more of them capering over the snow with a pace its mother could not equal, and they would frolic in this way for some minutes, and then drop down on the snow and quietly sleep off their fatigue.

The Siberian herders say that a female does not give birth to her fawn until she has shed her horns. This was not brought to my attention until most of the fawns were born, and I can not say whether it is always the case or not. In a half dozen instances in which I watched for such a result, however, it proved to be true.

It seems that the danger of young dying is when exposed to cold wind or snowstorms soon after it is born, or in cold, rainy weather. The dampness penetrates to the flesh and chills them to death.

The color of a fawn when born is generally of a dark brown, but they

are often light colored and have white spots. The natural color is shown at its birth, and does not change as it grows older, as in the case of a colt and some other animals.

The legs of the fawn are long and very crooked, and it seems to be ill proportioned. It looks, as it really is for a few days, top-heavy, and either from this cause or that it becomes giddy headed in looking down from what may appear to be a dizzy height, it will suddenly pitch forward and drop all in a heap. It soon gets used to the lay of the land, as it were, and gets up and lies down with perfect ease.

Fawns commence to sprout their horns within a month after birth, and by the 1st of September the horns are a foot or so long.

Males are old enough to serve as bulls when 1 year old, and a 2-year-old bull can serve about twenty females. Females bear young at the age of two years. A female gives birth to its young from nine to ten months after she has taken the bull. It sometimes happens that a female will give birth to twins, but it is of very rare occurrence.

It sometimes happens that a female can not give birth to its fawn, and this has occurred in two cases with us. In both instances they were taken from them dead, but the mothers survived uninjured. In both instances it was the first young the mothers had carried.

The cry of the old deer resembles the grunt of the hog, and that of the fawn the same, only not so deep in tone.

The care of a fawn after birth is very similar to that of a cow for its calf. The fawn is licked all over until perfectly dry, when it will struggle to its feet and finally find its mother's bag. The mother eats every particle of her afterbirth, and in three or four days there are no evidences from her appearance that she has recently given birth to a fawn, except a slight swelling of the womb. That slovenly and unsightly appearance which always follows in the cow after calving is entirely absent in the reindeer after the second day.

On April 3, I thought it would be a good time to experiment on milking reindeer, and had a doe that had lost her fawn brought to the station with the rest of the herd.

Day broke on that morning at 4:15 a. m., and the sun had been up about two hours when the herd arrived. The air was crisp and sharp, and the thermometer registered about zero. Half of the natives from the village were at the station, looking at the herd and assisting the herders in rounding up the deer. The snow was frozen to a crust, and in some places it was as smooth as glass. As the herd ran over it, a sharp metallic sound was emitted, which was really musical. The deer were all in good condition, and, although always quick and active, especially when the herders are trying to lasso one, they seemed more frisky than usual this morning.

Several attempts were made to lasso the female wanted, without success, but she was finally caught in the rope; but a series of slidings and tumblings was indulged in before the other herders could get to

HEADQUARTERS BUILDING, TELLER REINDEER STATION, ALASKA.

Photograph by S. J. Call, U. S. R. M.

the assistance of the one who had caught her. She was finally thrown down and held by one man sitting astride of her neck, and another holding on to one each of her fore and hind feet.

In lassoing a reindeer, a seal thong, 50 or 60 feet long, is used. A piece of ivory is attached to one end, with a hole in it large enough to permit the rope to slide through freely. It is then gathered up in much the same manner as is the case in lassoing a steer, and thrown in about the same way. Two or more herders will take a position about 30 feet apart, and the herd is driven so as to pass between them. When the one wanted approaches the lasso is thrown, and one or the other usually succeeds in getting the loop over the horns, but sometimes one or two legs get tangled up in it.

A full-grown deer is not able to drag a man holding on to one end of his rope very far before another herder comes to his relief, when, by a series of overhand falls, they quickly get near enough to the head of the deer to hold it until they can throw it by pulling its feet from under it, or, if it will stand still, it is gradually made to drop to the ground by one of them bearing his weight on its back.

A reindeer plunges about considerably when caught, and if he is at all vicious will strike with his fore feet, but the rope over his horns is usually sufficient to prevent his striking with any accuracy, for he is quickly thrown off his balance by a quick jerk. A reindeer rarely attempts to use his horns, and the only danger of injury from them is in getting so near as to be struck while he is plunging about. When once a hold is had on the horns by a strong man, he is easily prevented from doing any damage in this way. The only accident that occurred to any of the herders while catching deer was to one of the Siberians, whose nose was struck by one, and a slight scar will always remind him of the occurrence. When a deer is once down, he is entirely conquered and lies as quietly as a kitten.

When the female was thrown down, I was disappointed in the size of her bag, for I found it would not contain probably exceeding a pint of milk. The teats were not more than 1 inch in length, but would doubtless become longer after nursing a fawn for a while, as I afterwards observed was the case in others.

I found it impossible to get any milk from her, and was not much surprised at it, for she was doubtless holding it up from fright. After several unsuccessful attempts, I gave it up, and this experience, with one other of a reindeer nature later on in the season, convinced me that successful milking of reindeer could not be accomplished until they had become used to the process in a standing position and had become thoroughly domesticated by feeding and handling. Our poor accommodations and facilities for experimenting in the matter of seeing what can be done with reindeer in this particular did not enable us to give it the attention desired, but we hope to be able to do so more thoroughly another spring.

When I had concluded my investigations, I ordered the deer turned loose, but the Siberians said they wanted some milk, and forthwith one of them put his face to the bag of the doe, and lying there fully two minutes, seemed to be extracting a good deal of nourishment. When he got up he spat a mouthfull out, and it looked like almost pure cream. Another Siberian quickly took his place, and was at once quaffing it with as much enjoyment as if it had been pure nectar. His place was given to a third Siberian, who gave way to one of our native herders, who announced himself much pleased with the drink, that he now enjoyed for the first time.

The Siberians all took another turn at nursing, after which the deer was set at liberty, scampering back to the herd at a pace that showed she felt pleased to be relieved from her strange predicament.

As has been before stated, wild reindeer are scarce in this portion of Alaska, and in the past year but three have been seen in the vicinity of the station. Soon after the reindeer were landed, three were seen to approach within a mile of the herd, but they fled immediately on the approach of the herders, and, although several of the natives from the village started out in pursuit of them, they fled quickly, and after some hours the natives returned without having obtained a shot at them.

Among all the natives that have visited the station from the various sections during the past year, not an instance of seeing wild reindeer has been reported. The captain and officers of the whaling ship *Mary D. Hume*, that sailed into the harbor on its way to San Francisco last September, reported that they are killed in large numbers by the natives in the vicinity of Herschel Island, but that they are rapidly becoming scarce.

The only wild animals that have been seen in the vicinity of the herd at any time were occasional red foxes. If drawn to them from a desire for fresh meat, he was not to be feared, for a single deer could protect itself from this harmless animal very easily.

Probably the most serious apprehension felt by us at the station as to the various obstacles we would have to contend with was trouble from dogs. Indeed, from what I had heard concerning their blood-thirsty greed for fresh venison, this fear was made the subject of my thoughts by day and my dreams by night. Perhaps my dread of this animal was made more serious because some who claim to be authority on all matters concerning Alaska have uttered an emphatic protest against the project of domesticating reindeer, because the dogs of the Eskimo would eat them up.

I know this fear was shared by you to some extent, although you thought the evil could be avoided by exercising proper care and watchfulness, and I am glad to be able to state that but one deer was lost from being attacked by dogs, although on many occasions they were exposed to them in their savage state. In the light of a varied experience in this particular, which will appear further on in my report,

I do not think there is nearly as much to be dreaded from dogs injuring reindeer as there would be from a flock of sheep being injured by dogs in the States.

In the former case, nature has provided antlers with which to gore and fore feet with which to strike, besides limbs with the fleetness of the wind to carry him out of harm's way, if free to go at his pleasure, while the latter are weak, innocent things, that only have to be attacked to yield themselves a ready sacrifice.

Within a half mile of the station headquarters is a native village of one hundred persons, and on the first impulse, I would say, as many dogs. It is safe to fix the number at fifty, however, and only on five or six occasions have the dogs made an attempt to reach the reindeer. On these occasions the dogs were shot by the herders before they reached the reindeer, and at other times they were frightened away by the shouts of the herders.

On many occasions the reindeer have grazed so near the village that the whites of their eyes could almost be seen by the dogs lying about untied, and they seemed as oblivious to danger as the herders were unconscious of any harm that could possibly happen to them.

I will state here that in a number of instances risks were purposely taken in order to test this matter, and the accidents that did occur might have been averted by simply exercising that caution one would naturally bring into play when in the vicinity of a known danger.

Reindeer are afraid of dogs naturally, and upon several occasions, when driving them in the sled, I have gone near enough to a team of dogs to give them a smell of what a feast they might enjoy if they could but fasten their molars into the flesh of the reindeer; when off they would start, and in a race of 2 or 3 miles it would be nip and tuck, but the dogs were first winded and were gradually hauled up.

On March 1, I started for Cape Prince of Wales, in company with a white man who brought some mail from the station from St. Michael's a short time before. Each of us had a pair of deer, and were driving quietly along, when I, who happened to be in the rear, heard my name called and, looking around, saw a native sitting astride of a light sled drawn by four dogs, and they were coming toward us full tilt. The native was pulling on the line by which the sled was drawn, as hard as he could, but was powerless to hold them. The deer suddenly started, and it looked as if it would be a matter of endurance as to whether we would be overtaken by the dogs or not. The dogs were so near us when they were first observed that in a few jumps they were just behind my sled. I thought I would rather risk an encounter with them than be chased 4 or 5 miles, and then have to fight it out, and perhaps be left with a team too tired to continue the long journey before us. I therefore suddenly wheeled them about and jumped to their heads. As the dogs came up the reindeer struck at them, and I used my whip while the native pulled and tugged at the reins, but

before we got them separated I had been thrown under the reindeer and did not get to my feet again until three of the dogs had hold of one of the deer between the fore and hind legs.

We finally got them separated, however, and upon examination I found the only damage done was a few mouthsfull of hair that had been pulled off from the side of one of the reindeer, and, after straightening out the harness, we again started on our journey, none the worse off for our little excitement. The reindeer became quiet at once, and traveled 20 miles further that day without apparent fatigue.

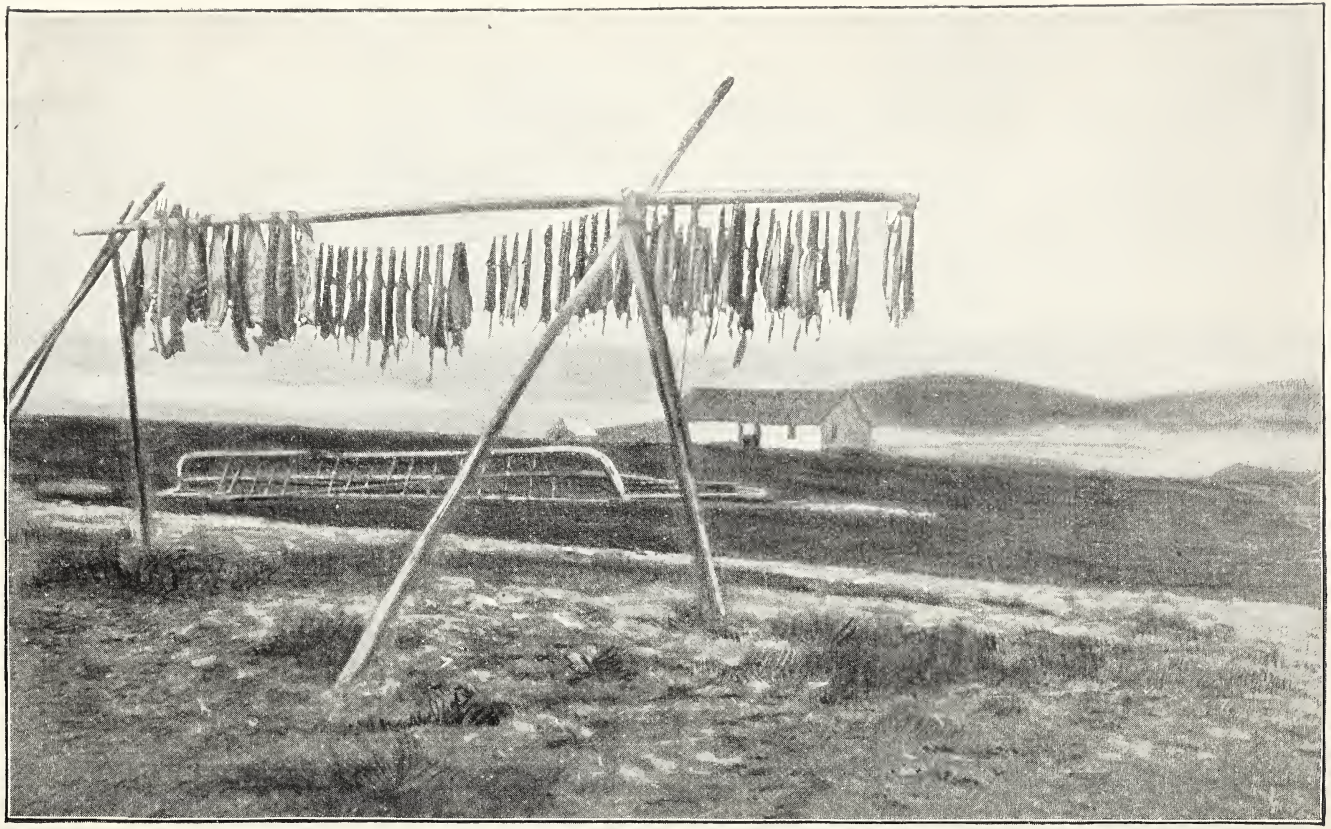
In the various experiences I have had of this character, I have come to the conclusion that the best thing to do at such a time is to get to the heads of the reindeer and hold them by the head-stall with one hand and beat back the dogs with the other. Standing at the heads seems to give the reindeer confidence, and, when closely pressed, they always face the dogs and are of considerable service in keeping them back by striking with their fore feet.

Thirty minutes further on our journey we were overtaken by a blizzard, and had to remain at a native settlement for three days. There were probably thirty persons here and as many dogs. The reindeer were picketed out within 50 yards of the village during the whole time we remained there, and, although some of the dogs were running loose, not one ventured to disturb the deer.

I will here state that, when traveling with reindeer, they are staked out at night at the end of a seal rope about 50 or 60 feet long. One end is securely tied about the neck of the reindeer and the other end around a chunk or mound of earth that has first been chopped with a hatchet so as to leave a head on it, over which the rope will not slip. It is impossible to drive a stake into the ground in this country between the 1st of November and the 1st or middle of May; it is frozen so hard. Reindeer take kindly to the lariat, and several times I fastened reindeer in this manner that had never spent a night away from the herd, and they remained perfectly quiet.

As soon as the storm abated, we continued on our journey to Cape Prince of Wales settlement, the largest native settlement on the coast for a distance of several hundred miles. Its inhabitants number about 600 persons, and it is safe to estimate the number of dogs to be 200. They were nearly all running loose on our arrival, and during our stay there for eight days, although the reindeer were staked within a half a mile of the village, which at times seemed alive with dogs, not an instance occurred when they were molested.

On a few occasions, one or two started towards the reindeer, but were frightened back by some natives that saw them start. I will state here that the dogs of the Eskimo are, as a rule, very poorly fed, and, as they get little food except such as is given them by their owners, whose constant struggle through the long winter months is to find food sufficient to sustain life, it can be imagined that their dogs would enjoy a feast of venison with a relish.



DRYING FISH, TELLER REINDEER STATION, ALASKA.

Photograph by M. W. Bruce.

I will observe further that Eskimo dogs learn easily to obey their masters, and in point of intelligence will certainly compare favorably with others of their species the world over. I have noticed many times that they quickly understand that they are not to molest the reindeer when staked out or roving about near them. This may look like a strange assertion to make about a half-starved Eskimo dog, but it is nevertheless true.

On our return trip from Cape Prince of Wales settlement we stopped for an hour to take dinner at the village where we were detained by the storm on our way up. It was a lovely day, and we started to continue our journey about noon. We were driving leisurely along ahead of our team of eight dogs which accompanied us from the station for the purpose of carrying our luggage, and which I believe I have not referred to before. Suddenly the lead dog got free from his harness and trotted toward the team driven by my companion. He got to the head of his reindeer and easily drove him away, when he came toward my team, but I caught him without any trouble and held him until the native came up and took him back to the sled. In the meantime four of the other dogs in some manner got loose from the sled and started for my companion's team. He seemed to become bewildered, for he did not attempt to get to the heads of the reindeer, and when they saw the dogs coming they started to run back toward the settlement, about 2 miles away. Instead of holding to the lines and beating the dogs back, he slipped his hands out of the loops, and away the reindeer jumped, with the dogs in hot pursuit.

I started back with my team and when I arrived at the village found the natives had stopped the reindeer, but could not drive off the dogs before both the deer had been bitten, one of them severely behind the fore leg. The flesh was badly torn, and it became evident he would not be able to resume the journey for several days, if indeed he would ever recover the use of his leg.

The other one, although lame, could possibly have traveled back to the station, but I concluded to let them rest for a few days, and made arrangements to have them brought in as soon as they were able to travel. In about ten days they arrived, the one that had been so badly hurt having been hauled the entire distance on the sled, and when he was taken off at the station he limped badly. In a few weeks, however, he was apparently as well as ever.

I have forgotten to mention that, on continuing our journey back to the station, I drove my team within a few feet of the dogs a number of times, and in occasional halts for rest, and not a start was made for the deer. A sharp word seemed to give them to understand that they were not to trouble them.

A short time after we resumed our journey after the accident, I took a view of the deer standing within a few feet of the dogs, some of them lying down as quietly as if they were a hundred miles from them.

I have related this incident simply to show, first, that Eskimo dogs, after once having tasted reindeer meat, are easily taught to leave it alone, even before the morsel has barely had time to be digested; second, that although a deer may be badly bitten by a dog, he is very liable to recover; and third, that in traveling with reindeer the driver may, by keeping his wits about him, save them from injury if attacked by dogs.

The time for castrating bulls is in the spring, when the sun gets high enough to thaw a little and freeze a little at night. We castrated our first bulls on May 2, and by the middle of the month had got through with the work, having altered nine two-year olds and nine one-year olds, and all of them got through nicely. I will add that each of our native herders performed the operation on two bulls, thus receiving a practical idea of the work.

As soon as the reindeer begins to shed his coat in the spring little ridges appear on the body, more or less thick, and they indicate the location of lice. They are about an inch long, of a grayish or milky white color, with a skin that partakes something of the scaly order, and around a body about one-half inch in diameter are little ridges. They are soft, and unless care is used in pulling them off will burst, and the contents, nearly all liquid, will ooze out. They stick to the skin of the reindeer very much as wood-ticks do to cattle. I am told that in summer they fall off or assume wings and fly away, and that a new crop is deposited by the old females during warm weather, when they fly about the reindeer, and, when near enough, throw the young into the fur by striking it with their tail. The Siberians eat the lice with a relish, and seldom catch a deer in the spring without exploring for a few of these repulsive-looking insects that appear to be to them something of a luxury.

During the past year we have pretty thoroughly demonstrated the capacity of reindeer, both as draft animals and as travelers. As packers or saddle animals we have not had time to experiment fully enough to ascertain what they are capable of doing in this direction; but, while I feel assured they are valuable for packing, I am afraid they are not suitable for riding. In using them for either purpose, the load must rest on their shoulders, and, while a pack could be made to ride without sliding off, by lashing or holding on while the reindeer is moving, a man must be constantly on the lookout or he will fall off. Besides, an ordinary sized man, sitting astride of a reindeer would nearly touch the ground with his feet, and while the reindeer, would hold him up without any trouble, he could not travel faster than a walk, and ordinarily he would prefer walking himself.

A reindeer is at the right age to break to harness when two years old. He is most tractable for breaking when a gelding, and the argument in favor of horses being better for work after they have been castrated will apply to reindeer, although there seems to be no good reason

why bulls could not be effectively broken and about as easily handled The same can doubtless be said of females, but perhaps the occasion would seldom occur when one of this sex would be required for work, and her best sphere in life is doubtless for breeding purposes.

The favorite manner of driving deer among the Siberians, and the only one used at the station, is singly or two abreast. Driving one ahead of another is something our herders know nothing of, and although such is the fashion, I understand, among the Laplanders, I can see no advantage in it, unless in a heavily timbered country, or where the road traveled is narrow. Indeed, a driver can not use a whip to advantage unless he can reach the reindeer with it at short range, and I apprehend they are more easily controlled when they are abreast of each other. This argument will not hold good for draft purposes, however, for often they can pull better one ahead of another; and when the driver is walking beside his load he can easily get to a contrary deer and make him do his share of the work.

The harness used is the same for draft as for driving, and, to say the least, is of a style that an ingenious Yankee could improve on very much.

No bit is used, and the animal is controlled by a noose slipped over the nose, resting on the forehead in front of the horns, and another piece is passed back of the horns and confined to the one in front. The rein is attached to the right side of this headgear or headstall, and on the other end is a loop large enough to slip over the hand and rest on the wrist.

The sled is drawn by means of a rope attached to a strap which is passed over the neck and rests on the shoulders, very much the same as a breast-strap is used on a horse, only one end of the strap passes under the breast and between the forelegs. The ends of this breast-strap come together and hold a single tug which goes back to the sled on the right side of the deer. It will thus be seen that the off or right-hand deer travels on a line between the runners of the sled, and the near or left-hand deer travels entirely to one side.

In the case of young deer, or until they have become used to being driven, each wears a sort of girth from one of which is a rope, the other end being tied to the halter of the opposite deer, and the girth rope of the other deer is tied to the girth of his mate. This is for the purpose of tying them together. The harness is made entirely from the skin of the hair seal and is stronger than leather. A complete harness will weigh about 2 pounds.

No shafts or pole is used, and the sled is close to the heels of the deer, or back when the tugs are drawn taut, according to the nature of the road over which the deer are traveling.

The style of sled used with reindeer is very similar to that used with dogs for light loads. It stands about 1 foot high, 18 inches wide, and 8 or 10 feet long. The runners are made to turn up in front so as to

act as fenders if an obstruction is met with, and a back-rest is raised up on the hind end of the sled. The bottom of the runners are 3 inches wide and are shod with bone taken from the whale. The bone has no commercial value, but is a good substitute for iron or steel, and, although heavy and clumsy, it slips over the snow quite smoothly.

The braces which support the runners of the sled as well as all the woodwork about it are fastened together with seal thongs. Not a nail is used in its construction, but the thongs are so nicely woven and interlaced around the underwork that scarcely a joint is loose, and were the wood hickory or some other good quality of timber it would be practically indestructible. But the natives have to depend upon driftwood for everything from which to make their implements, and it is generally water-soaked or partly decayed, and as a result their sleds are constantly being broken.

The style of whip used with reindeer is a stock or straight piece of wood wound with seal-thong for the purpose of making it stronger. It is about 6 feet long, and on the end is fastened a piece of ivory about 2 inches long, and it is tied on crosswise, both ends being pointed. The whip is carried in the left hand and answers a very good purpose if the deer are inclined to lag.

The first thing done with a deer that is to be broken is to teach him to lead with the headstall or halter on. Afterwards he is fully harnessed and led around in this condition. An old sled-deer is now brought up, and the two are securely tied together by means of ropes extending from the girths as described above. The young deer is placed on the opposite side from that in which the old one is in the habit of working, and when another young one is broken he is usually hitched up with the old one's mate, so that when the two young ones are hitched together they occupy the same position in which they were broken. They are now ready for the first drive, and if the old one is steady he usually has to drag the young one around or else hold him back. If he is inclined to be frisky, however, and they both take it into their heads to run there is generally a parrot and monkey time of it, in which the driver has not only his hands full, but his eyes, ears, and nose, and more or less snow is deposited under his clothing as he is being dragged about, completely at the mercy of his team.

It sometimes happens, however, that a young deer will go off on the start as quietly as an old hand at the business; but I have found that, like colts, the best driving team is one that will start off at a rush. When this occurs, if one is fond of excitement, he will find enough to satisfy him before the team has got quieted down.

It is not, however, until the two young ones are considered sufficiently well broken to be driven together that real, downright, fine enjoyment is to be had. It is of a kind that intoxicates one and makes his head grow dizzy; that concentrates all his thoughts, if he can be said to have any at such a time, into the single one if, when the deer finally

SIBERIAN HERDERS. TELLER REINDEER STATION.

Photograph by S. J. Call, U. S. R. M.

stop, there will be a piece of him left large enough for decent mince-meat.

I have always had a weakness for riding behind a lively team, and my experience with bronchos, Indian ponies, and wild steers dashing across a level stretch of country has afforded sufficient excitement to satisfy me on more than one occasion; but they all fade into insignificance when compared with a ride behind a pair of lively reindeer.

In riding a broncho or Indian pony one realizes that all he has to do is to keep his seat in the saddle and he will eventually haul up all right, or, if he is thrown off, he can lie quietly on the ground and think it all over; and in a wagon behind a pair of runaway steers, if killed at all it will probably occur suddenly, and he can take his chances with a broken limb by jumping out. But in driving reindeer the lines, looped over his wrists, make him a secure prisoner, and he is just as certain to continue a part of the load the team will carry until they stop, as the lines are sure not to break, something that rarely if ever occurs.

On the morning of November 6, I experienced my first drive with reindeer. The mercury stood at about zero, and the ground was pretty well covered with snow. In some places a hard crust had formed, and in others lay drifts a foot or so deep, of newly fallen snow, while in spots, where the wind had a little freer scope, mounds or little hillocks among the tundra were entirely bare.

I did not announce my intention to drive alone until the team was all ready to start, and when the Siberians learned my intention they seemed horrified and expostulated with me. I did not see anything so dreadful about it and finally slipped the reins over my hands.

The proper position to assume before mounting a sled is to have it drawn up on the right side of the off deer, the driver to hold that one by the head stall, and when he is all ready, let go, and by lifting up his right leg and dropping down at the same time he is pretty apt to find a seat on the sled, for no sooner does he let go from the deer he is holding than off they go.

I got thus far in the preliminary exercises all right, but in a moment I did not know whether I was on the sled or not, being conscious only of being jerked along at a furious rate, and clouds of snow hurled all about me. For some moments I kept my seat, but suddenly a frozen snowdrift was encountered when over I went, and was dragged through drifts and over frozen heaps until the deer finally stopped from exhaustion.

As soon as I got upon my feet I took a view of my surroundings. I was completely covered with snow, and just over my right temple there was a stinging pain, caused by being struck with one of the runners of the sled. I looked toward the station to see if anyone was coming to my rescue, and saw what appeared to be all the natives from the village watching me, and I thought I could hear them laughing. This settled it, and when the deer were ready I was ready also, and

over my leg went and down I dropped, and off we went again with a jerk.

This time the deer made for the direction of the tundra, and when we struck it I felt as if the next moment would be my last. At first the sled ran on one runner; then a slight turn made by the deer threw it over so it ran on the other; then it took a dive forward, the bows striking the feet of the deer, who by this time were as badly frightened as myself, and brought every muscle into play, and for a mile I kept on the sled, but we were traveling with the speed of a lightning express. The deer had by this time changed their course and were going in the direction of the station, and, when within a few rods of it, suddenly made a turn, as I thought, to show the natives how easily they could upset me, and I was again dragged through snowdrifts until they stopped from fatigue.

By this time I had got thoroughly worked up, and made up my mind that I would either conquer my team or break something, and started them immediately for another spurt. They appeared as fresh as ever now and took a turn over to the beach, the shores of which were lined with drift logs of all sizes. It was a course of about 3 miles straight away, and as we went, bumping against one log and jumping over another, at a furious gait, I felt that if my neck was not soon broken my legs would be. I managed to keep the sled right side up until we had gone about one-half the distance, when the deer gradually slackened their pace, and for the first time answered to my pulling on the lines.

It now became my turn to do a little forcing, and I belabored the animals with my lines, my whip having been left somewhere in a drift at the outset, until I saw that they preferred a good honest pace to a rollicking gallop.

After allowing them a short breathing spell they started on again like a good sensible pair of reindeer, and for a couple of hours I enjoyed the most pleasant ride I have ever experienced.

In due time we reached the station none the worse off for my first ride, except the smarting blow received after my first upset and a little soreness in my limbs and back.

I christened my team "Thomas and Jeremiah" before I turned them over to the herders, and they became my favorite deer and the ones I always drove when I went on a long journey. They never got over their habit of running with me at the start, however; but I soon learned that by keeping well astride the sled with the heels of both feet spread well out ahead of me, I could generally keep the sled right side up, and in soft snow could plow them so deep into it that the deer soon preferred to slacken their pace rather than drag so heavy a load.

There is much to learn before one can feel at home behind reindeer, but it can only be had from experience. I believe it essential to give the deer to understand that you propose to drive them, and if they upset you twenty times, as I was in one day with another team, stick to them,

and the bright, intelligent eyes of this useful animal will soon convey to the brain behind them the fact that you are their master; and the worst is over.

After a great many trials during the past winter, in which the capacity of reindeer for traveling was pretty thoroughly demonstrated, I feel that it is safe to say that, with good roads and the deer in good condition, 25 miles a day for a journey of a couple of hundred miles or so is about what they are capable of doing. I do not think they should be urged on a journey of this distance to a pace exceeding 3 or 4 miles an hour, and this would give them an opportunity to pick their feed and rest.

I have heard of reindeer in Lapland making 18 miles an hour and 100 miles a day, but I believe it is an extraordinary statement. They may be able to travel at the rate of 18 miles an hour, or even 30, but it would only be for a short distance, and I doubt if, except under exceptionally fine conditions, 100 miles could be made in one day, and the deer even then would be of little value, except for their hide.[1]

The longest distance I have made in one day was about 30 miles. It was along the northern shore of Bering Sea, where the ice was very rough, obliging us to walk the deer most of the way and pick our way over the rough places. Fully ten hours were consumed in making the distance, and had the roads been good we could have probably made 10 miles farther much easier and in the same time. It was a day following one in which they traveled 20 miles, and on that day, before I finally got them turned in the right direction, they ran away several times, and for an hour or more wore themselves out and myself, too, in their efforts to get away from me.

I will here state that it is very seldom, in making a start with deer, however well broken they may be to drive, that they do not start away on a dead run, and for a little while it is next to impossible to control them at such times. The only thing to do is to devote all your energies to keep on the sled, and sooner or later the deer will slacken their pace and respond to your pull on the lines.

Undoubtedly the canter or loping gait is the natural one for reindeer, but in driving to the sled they trot as squarely as a pair of thoroughbred horses. They hold their nozes on a straight line with their backs, and the hind feet overreach the fore ones with every stride, thus making better time than they appear to be doing.

It is certainly a pretty sight to witness two or three reindeer teams trotting along, one ahead of the other, on a bright, frosty morning. Their gait is so smooth and even that the motion of the sled is hardly felt as it glides over the hard crust, and when the deer obey the pulling on the lines, as they easily learn to do, a pleasanter team to drive could hardly be desired.

[1] Mr. Bruce was inexperienced in driving reindeer and did not secure good average results.—Editor.

For the first 2 or 3 miles, the deer pant considerably, and if closely pressed loll like cattle when warm, but they soon get their lungs full of air and do not seem to labor afterwards. When traveling along they reach down and scoop up snow to quench their thirst, without slackening their pace.

One man on a sled, with 50 or 75 pounds, is as much of a load as a team of reindeer should carry for any distance. A single deer will haul a man and make very good time for a short distance, and for 25 or 30 miles would cover the distance in eight or ten hours.

There is one advantage in traveling with deer over dogs, namely, with deer no fish or other food has to be carried, while with dogs a native never thinks of starting out on a journey without dried or frozen fish or seal meat, and often this constitutes a considerable portion of the load he carries. In my experience I have found also that a team of two deer will make quite as good time and travel as far in the same length of time as a good team of six or eight dogs.

While it is true, perhaps, that dogs will go further for a day or two, they will have to rest long enough to put them in condition for traveling again, for the deer to overtake them. Although a dog team can sometimes make 70 or 80 miles in one day, they should not be driven over 25 or 30.

Reindeer easily tire when driven in soft snow, and even when driven on a walk, if the snow is 6 or 8 inches deep in an hour or two they will lie down, and when they do this they are as hard to start up as a balky mule. When they have rested, however, they get up and are ready to go on again.

On the ice they are as bad as oxen, their hoofs being similarly formed, serving them no better purpose.

Wood was used for fuel in the school room and in the house occupied by the herders, and during most of the winter it was hauled by our dogs, six or eight constituting a team.

On March 19 Mr. Gibson left on a trip south, taking the dog team, and I at once started hauling wood with reindeer.

Of the ten sled-deer at the station all but three were 2 years old or younger, and were broken to drive by our herders. The 3-year old deer had evidently been driven to the sled but little, and, it is safe to say, never had done any heavy hauling.

On March 22 the first wood was hauled by three deer, each harnessed singly to a sled, and in this condition, each accompanied by a herder, they went 2 miles up the beach, loaded the sleds, and returned to the station in the same time consumed by the dogs in making the trip, and each deer hauled about as much wood as our full team of dogs were in the habit of hauling.

We usually sent three men with the dogs, and thus it will be seen that about three times as much was accomplished with the deer. When their work was done they were simply turned loose, when they found

THE HERD AT TELLER REINDEER STATION.

their way back to the herd without further attention. They made these trips on an average about every third day until the middle of April, and in that time had hauled enough wood for present needs, besides a number of logs for building purposes.

In hauling wood the herders walked near the first deer, the others being tied to the sled in front and in single file, trudging along with their loads. The teams were changed about sometimes, four being sent, but there was no occasion to force the work or overload the deer, and they were given only such loads as they could walk along with comfortably.

They took to the work as naturally as a duck does to water, and not a single instance of balking occurred. They pulled as steadily, and much resembled an ox in their movements. If for any cause a halt was made, on starting up again each herder went to his sled, pulling it a little to one side, when the deer at once set himself in the traces, and on he went.

This experiment was one of the most satisfactory of any trials during the year, and one that the natives looked upon with wonder. They would watch and walk beside them as they trudged along, and doubtless many of them thought, if they only had a house like the white men, with a stove in it, and deer to haul their wood what comforts they could enjoy.

## AFFAIRS AT THE STATION.

The reindeer station was selected and formally established by yourself on June 29, 1892, at 10 o'clock a. m., sun time, by raising the stars and stripes and firing a salute with rifles as the flag gracefully filled to the breeze.

A few feet from the southeastern corner of the house, known as the headquarters building, as it now stands, was an empty pork barrel, minus head and bottom, and through this protruded a log that had been picked up on the beach and buried in the ground about 2 feet. This log was about 15 feet long, and on the top was originally nailed the empty pork barrel, but it had become loosened and fallen to the ground. It was erected some five or six years before by some men belonging to the U. S. revenue steamer *Bear*, Capt. M. A. Healy, commanding, for the purpose of making an object that could be seen from the entrance to the harbor, about 12 miles distant, to designate the spot where whaling vessels could procure an abundance of fresh water.

The stores and supplies for the use of the station, brought from San Francisco, were landed on the beach at 2 o'clock p. m. of the same day, a tent being erected in which they were stored, and one also for the accommodation of myself and assistant until other quarters could be provided. In consequence of the arrival of the lumber intended for the building being delayed, we were obliged to occupy the tent for nearly three weeks.

The sun set on the day on which the station was established at 11 p. m., and rose the following morning at 1.45.

On the 3d day of July, feeling some apprehension about the safety of the vessel on which our lumber was shipped, we started a number of natives digging an excavation in the side of the hill for the purpose of building a dugout, to be occupied as a house, in the event of nothing better being available.

For several days work was done with a single spade, a broken long-handled miner's shovel belonging to a native, an axe, a clinch bar, at one time belonging to some steam vessel, and a piece of flat iron, the last two being used in the place of crowbars. Pieces of driftwood were cut and their ends sharpened, and with these tools the earth was dug out and pried off in chunks and lifted out of the excavation with a patience that only an Eskimo can exercise.

In less than 2 feet from the surface frost and ice were encountered, but, when exposed a few hours to the air, the ground thawed sufficiently for us to continue our work.

In a few days the *Bear* returned from the Siberian side with some reindeer, and left other tools, with which in a day or two the excavation was so far completed as to be ready for the logs.

The only timber growing in this country are scattering willow and alder bushes, but nature has provided these people with fuel by bringing to the beach almost to their very feet, logs of good size and in abundance. It finds its way here by the motion of wind and tide from the mouth of the Yukon River. From this driftwood we obtained logs sufficient to construct a dugout 18 by 24 and when completed we occupied it until the frame building was ready, and we moved into it about the last of August.

The idea of building a dugout proved to be a most fortunate one, for it became our habitation on the 5th day of October, and we remained in it throughout the long months of winter, and not until the snow and ice disappeared in the spring did we go back into the frame building.

By some means little if any of the lumber received at the station was of proper dimensions for the plan of the building selected for the station and although an apartment 20 feet square was set aside for living quarters there was not enough finishing lumber or ceiling to make it habitable. Before it froze out in the fall sods were laid up on the three sides exposed to the weather, and on the other side of the living room inside of the building was also piled sod.

The walls were about 5 feet at the base, gradually sloping so as to leave the top layers about 2 feet thick, but they were water-soaked, and when frozen left cracks and seams through which the snow and frost penetrated. The roof consisted of but one layer of matched flooring, covered with sail canvass and painted, and although water-tight, the frost penetrated through it like water through a seive. Toward spring, or when the weather moderated sufficiently to warm the living

room with a fire, the ceiling and walls sweated so badly that everything on the inside got damp and mouldy.

The whole expense of building the dugout, including lumber and labor, would not exceed $50, and the experience of the past winter has shown that it is the only sensible kind of habitation for this country.

At Cape Prince of Wales, in a letter received from one of the teachers the last of February, he wrote: "We are cooking, eating, and sleeping in one room, while in those adjoining the mercury is down to 32 degrees below zero."

The other teacher, who, while on a visit to Point Hope during the winter, visited some whalers who were living in a dugout, said it was the right kind of a house for this country, and that he intended to build one for his own use the coming season. Yet the residence of the teachers at the cape is a neat and comfortable frame building of several rooms, well built, of good lumber, and must have cost not less than $3,000.

In our own little shanty we have not had a temperature lower than 50 degrees above zero for an instant, and, although somewhat cramped for room, have lived very comfortably.

From the result of this experience I have concluded that, unless your orders for the finishing of the frame building are emphatic, it is best to erect the necessary buildings somewhat on the plan of our dugout, and I believe when you are able to inspect it thoroughly you will agree that the conclusion is a sensible one.

The only inconvenience experienced in the dugout was in getting in and out. From December to February 1st we were obliged to keep a lamp burning most of the time, as the only window in the house was continually covered up with snow. Before winter comes again a window will be put in the roof, and that difficulty will be done away with.

The only stoves received at the station were a small-sized cooking stove and a small heating stove. The cooking stove was designed for either wood or coal and the heating stove for soft coal.

There were 12 tons of hard coal received at the station, but it was of large size, and in consequence less convenient, as fires had to be often rebuilt. Fortunately we were able to secure 1½ tons of soft coal from the whaling fleet supply, without which the starting of fires in our small stoves would have been a troublesome task, to say the least.

On account of the length of the spring and the chilly air that continued until after it was daylight throughout the twenty-four hours, it was necessary to keep our fires going until about the middle of June, and, notwithstanding the fact that it was necessary to keep them burning on an average of sixteen hours a day from September 1 until June 15, there was an economical use of coal, an advantage of some moment in the dugout for a house.

Although there is an abundance of wood on the beach near the sta-

tion, and to which reference has been made before, it is all water-soaked, and unless cut and piled up where it is not exposed to the rains of summer, it is hard to make burn and gives out little heat.

Another trouble we experienced, and it became an almost daily one, was with stovepipes. As no earthen or terra cotta chimneys were received at the station, it became necessary to make stovepipes answer for chimneys. As a consequence, the long spells of rain in summer and the snow beating in and about them in winter caused them to rust badly, and before winter was half through we were obliged to make stovepipes out of tin oil cans, which served a passably good purpose.

In October last I made a trip by canoe to Cape Prince of Wales, and the teachers very kindly let me have an extra large box heating-stove, which I brought to the station and without which we could have carried on no school. And even with this large stove in the apartment designed as the living-room in the frame building, there were several weeks during the winter when it could not be made comfortable enough to teach in. It was discovered one day towards spring that the stove had a crack extending the whole length of the bottom, which was doubtless caused by building a fire in it when it was full of frost.

On account of being obliged to use stovepipes we were in constant dread of fire. On two occasions the frame building caught fire, and on November 3 would have been burned to the ground, with its entire contents, had it not been for the timely arrival on the scene of Mr. Gibson who, with the aid of some natives, succeeded in putting the fire out.

Immediately after the building took fire the last time a cache was constructed similar to those used by the natives. A platform was made of plank laid on the tops of logs buried in the ground, on which were placed most of our biscuits, flour, and such other stores as would not be injured by cold weather. In this condition they kept splendidly all winter, the cache being opened and goods removed as occasion demanded.

It is almost a universal custom among the Eskimos to erect caches on the outside of their houses in which most of their goods, furs, and implements are placed for safekeeping. They are never molested, and a native would as quickly desecrate one of the graves as to disturb the cache of another.

This experiment supplied us with another valuable idea for the future, and with a properly constructed cache a storeroom only large enough to hold the perishable goods is all that is necessary. It should be built high enough to admit of free circulation of air under it and with an apartment constructed with a roof that would shed rain, with the sides tight. With such a cache it could be used in summer as well as winter.

In this connection I will state that in a number of boxes of biscuits, when opened, one-fourth of the biscuits were found moldy and unfit to be eaten. In the early part of the summer they were stored away


HERD OF REINDEER LYING DOWN.

Photograph by A. L. Broadbent, U. S. R. M.

in one of the tents, but when the frame building was covered were removed to it. They might have gathered dampness while in the tent, and, if so, removing them to the frame building did not improve them in the least, but doubtless assisted in the decay that subsequently followed.

In August last we also constructed a dugout something after the plan of the one built for ourselves. We had no lumber with which to lay a floor or to make a frame front, so logs were used. This was turned over to the herders, of whom there were eight, and in it all of them ate and all but three slept, including the wife of one of the herders and her two children. The others slept in the living room of the frame building, and it was also used as a sort of loafing place for the herders when off duty and for women and men when repairing, slatting, or working on skins for the use of the station.

Fortunately we were able to obtain from the *Bear* a cook stove, taken from an abandoned vessel in the Arctic, and with this the dugout used by the herders was made comfortable, and upon it their food was prepared.

It was the intention at first to have a part of the frame building set aside for the herders to occupy, but there was no lumber for a floor, and nearly all the space was taken up with supplies, stores, etc., and it was nearly as cold as on the outside. Besides, the boxing put in around the eaves was made of rough lumber, leaving cracks through which the wind whistled and the snow blew, sometimes covering the goods stored inside.

There was a constant demand by the herders for one thing or another in connection with their clothing. A stitch had to be taken here, or a piece of skin was worn out there; a boot sole had worn through here or a mitten torn there. One or two women were occasionally employed to do the mending, but after awhile a woman was kept purposely for this kind of work, and her husband employed on and off, as he was required to for work on skins.

It has been our practice at the station to keep regular hours in the matter of meals, of which three were prepared each day; breakfast at 7, dinner at 12, and supper at 6. We seldom retired before 11 or 12 o'clock at night, and were up in time to see that the herders were punctual in taking their watch at the herd.

Early rising is a common thing with the natives, even in winter. They retire soon after dark at that season, but are awake bright and early. As soon as the days began to lengthen they were up with the first peep of day, and never ceased to annoy us by coming to our door before we were up. In the long days of summer they did not seem to be able to distinguish between the hours of day and those of night, and many times we have been routed out of a sound slumber to answer some trifling call at 2 or 3 o'clock in the morning. It is a common practice for the children to be playing about at the same hour of the night,

and their shouts and laughter are often heard after we have been abed several hours. We soon found that the natives slept as they ate, namely, when they felt like it, and many of them were snoring in their tents when we were up and at work.

I was puzzled for some time to find how the natives knew when it was morning. When sleeping in their houses I have been disturbed by their getting up when it was yet dark, but before long the glow of daybreak appeared through their little skin windows. I soon learned that they depended on the "big dipper" for their timepiece, and knew from its position when it was approaching day.

Early last fall we began to be troubled by the Siberians' fears for their safety from harm by the natives. It became known soon after the deer were landed that there was a disposition to ridicule the idea of introducing reindeer on this side on the part of some of the Cape Prince of Wales natives, the largest in number as well as the most viciously inclined of any in this portion of the country.

Although very little disposition to quarrel with any of the other tribes has become manifest of late years, their history in former times justifies the reputation they still have of being quarrelsome. They are, moreover, less feared by the natives about the station, and through them all sorts of stories were told, and all sorts of predictions were made to the Siberians. They were given to understand that they would be killed, the white men at the station butchered, and the deer driven away and slaughtered.

Such tales as these after awhile became annoying to us, but such was the anxiety among the Siberians that we felt something must be done to reassure them, and the opportunity came in time and in such a manner as to save them many sleepless nights and made them feel we were abundantly able to protect them.

We had some natives sawing wood one morning at the station and quite a number were standing by. Suddenly one of our own natives, whom, on account of his appearance and manner, we had dubbed "Thug," came up drunk and in a vicious manner demanded some matches.

This man, the fall before, had killed a native belonging to another tribe in cold blood, and was looked upon as a bad character generally. It became evident that we must make a demonstration for our own security, and, while Mr. Gibson stood by to prevent interference by others, I took hold of him and dragged him to the beach, where a number of natives belonging to the Cape Prince of Wales tribe were encamped and where we felt certain he had procured his whisky.

A plan was quickly agreed upon to search the tents of these natives and sieze any whisky found. We demanded of the natives to deliver up their whisky, but of course they did not have any, and the man had not got any from them. I immediately commenced a search, Mr. Gibson standing by to be ready in case of any hostile demonstration, and after

a while I found two bottles of whisky which a woman had concealed under her.

The moment I got possession of the whisky there was an uproar, and it looked as if we would have trouble, but our vigorous attitude probably averted it. We returned to the station in possession of the liquor, which will be turned over to the commander of the *Bear* upon his arrival here.

The liquor was found in the tent of a Cape Prince of Wales native, who had brought a letter from one of the teachers, saying, "he was one of the wealthiest and most influential men of that tribe." We were glad of this, for it showed to him that we would seize liquor distributed among our people by one of their headmen as quickly as if by one of the humblest of the tribe. We afterwards sent word to one of the teachers at the cape that any liquor brought here in the future by their people would be seized at all hazards, and asked them to give notice to the natives to this effect, which they did.

We made up our minds that this proceeding would either cause trouble or stop such practice in the future; and I am happy to say that, although many natives from the cape have visited the station at different times since, and once during the winter over 80 of them came here at one time, not a drop of liquor has been brought here, and not another case of drunkenness has occurred. I will add further that both Mr. Gibson and myself have been among the Prince of Wales people away from the station at different times, and no spirit of hostility has shown itself. I will state further that the "thug," although he still enjoys his unenviable reputation, is one of the most quietly disposed persons who come to the station.

This affair at once placed the Siberians, as it were, on a higher plane, and they have since mingled with the natives on more of an equality. No more tears were shed, as before, and no more tales of us all being killed have been told.

I have since been told that the whisky seized was bought on the Siberian side last summer, and that several cases of drunkenness have occurred at Cape Prince of Wales during the winter.

On the 25th of September last I wrote you, giving a report of this transaction, and sent the letter to Cape Prince of Wales, to be forwarded to you by some vessel, should the teachers be able to intercept one on its passage through the straits en route to San Francisco. For fear the letter did not reach you I send a copy herewith, marked Exhibit A.

While we quieted the fears of the Siberians as far as their being molested by the Eskimo was concerned, we were never able to induce them to give up their foolish superstitions. If ailing a little the services of a doctor were required, and after a dose of "tum-tum," or beating upon a hoop covered with a piece of walrus entrail, and being blown over and slapped in the region of the affected part, they generally got better and the doctor received the credit of saving them. If

a deer was sick and had been brought to the station for treatment, especially if taken inside the building, a catastrophe was certain to happen, either to the reindeer, most of which were certain to die, or else to one of the Siberians.

On one occasion I returned to the station after going a few miles on my way to Cape Prince of Wales with deer, on account of a storm. I put my team in the frame building, intending to make another start the next morning, if the storm cleared away. It continued to blow furiously for three days, however, when a number of natives came to me, with the Siberians, and asked to have the deer turned out, giving as a reason that the storm would not cease until the deer were out of the house, and there were some natives at the village from a distance who were anxious to return home. The deer were not sent to the herd and the storm cleared off beautifully the following day.

The Siberians wear ermine skins suspended from their necks. These skins are regarded as charms against sickness. One of them, in removing his skin coat one day, accidentally dropped it. When he missed it he was in a violent state of despondency for fear he would not be able to find it again, in which event he would die. He never found the skin, and he yet lives.

On another occasion we had two deer brought to the station and confined in a pen in order to teach them to eat corn meal. It was a matter that worried the Siberians a great deal, and they insisted that if they were not turned out a great many deer would die. They were kept in the inclosure over two weeks and not one died.

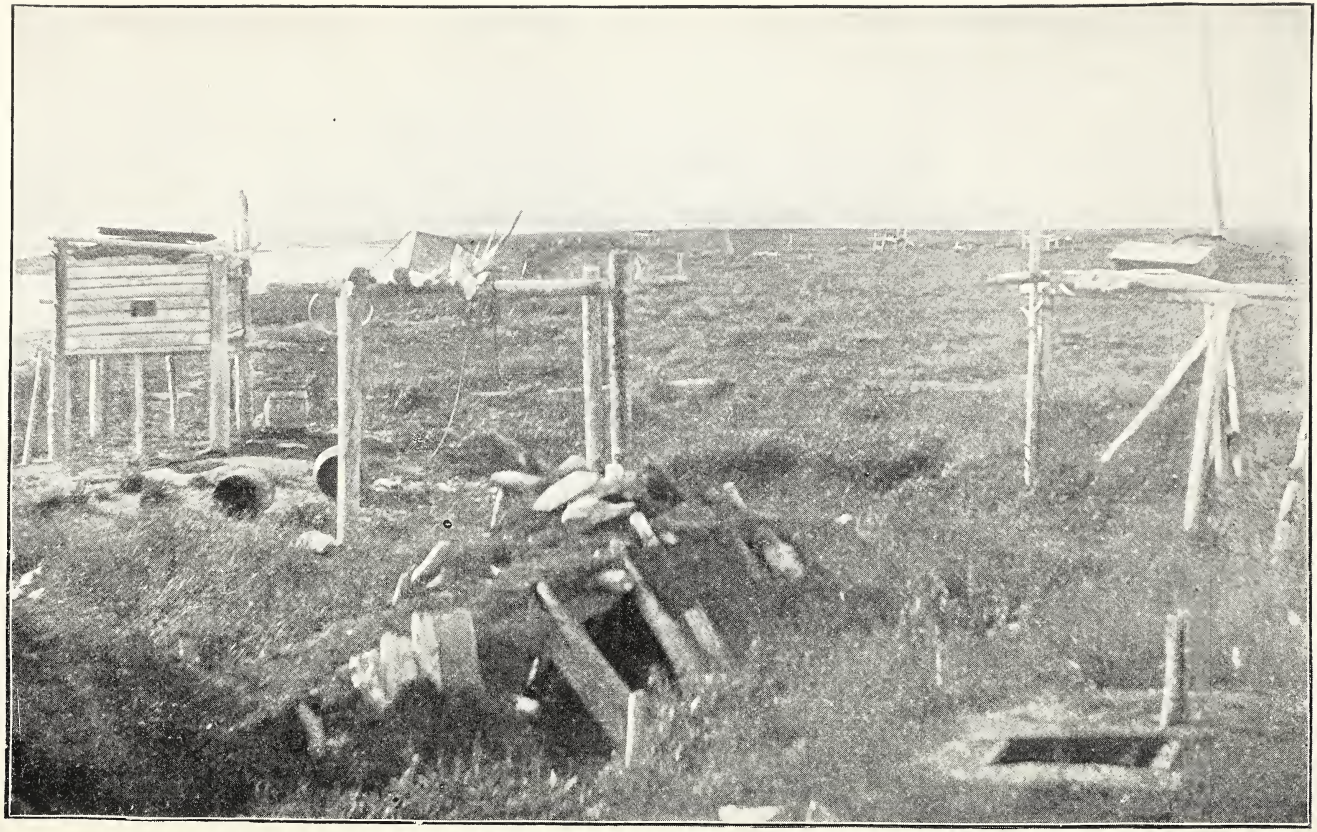
These are but a few of the superstitions that worried them and they were always poured into our ears. We found it did no good to ridicule them and finally listened to them without comment.

While there is perhaps no marked difference between the Siberians in their features or the color of their skin, they speak a different dialect, and in this there is a wide difference. With the Siberians the use of the aspirate is frequent, but rarely does it occur among the Alaskans.

The Arctic Eskimo wear their hair shaved close to the scalp on the crown of the head, the rest being allowed to grow low down on the forehead and neck, while the Siberians wear the crown closely shaven, and usually two narrow fringes are worn, with rings shaved all around their heads. The Siberians have their ears pierced a little above the tips, from which one or two single strings of beads are allowed to dangle. The practice of wearing beads among the Alaskan natives is confined to the women.

The Siberians are of a nervous temperament, or at least they can not sit still any length of time. I have thought it was caused by their having to change their position so much when with the deer, being obliged to move about more or less to keep up the circulation.

Soon after the arrival of the deer we found that any innovation we proposed to introduce would be resisted by them vigorously. If a deer



NATIVE HUTS AND STORAGE PLATFORMS, WITH PLATFORM GRAVES IN THE DISTANCE, TELLER REINDEER STATION.

Photograph by S. J. Call, U. S. R. M.

was sick they wanted it killed at once. If one was injured they thought it should be killed right away, and if ordered to bring it to the station to be nursed they executed the order reluctantly.

At first we thought their opposition to caring for sick deer was from a selfish motive, the more deer killed the more fresh meat they would get, but we made it a practice never to give them much of a deer that had been killed, and we became convinced that their opposition to nursing a deer was caused by the fact that they had never been in the habit of doing it in their own country; that with them, when a deer was disabled from any cause, it was killed at once.

In almost every instance in which they expressed the opinion that the deer would not recover such proved to be the case. In a few instances, however, I believe if we had had proper shelter and proper medicines we could have brought them around all right.

On the 12th of last March a female, 2 years old, was reported to have slipped down and broken one of her hind legs. She was ordered to be brought to the station, and, finding she was with fawn, we thought we would try to save her. Mr. Gibson tied her leg up with splints and securely bandaged it, and in this condition she was allowed to lie in the frame building for about ten days, during which time she was fed on moss. She was finally taken back to the herd, and was able to hobble about and pick her feed until April, when the splints were removed. It was found that the bone had not knitted together, and the lower part swung about as the deer moved, and one of the hunters took his knife and severed it from the rest of the leg. No blood came from the stump and the deer got up and hobbled away, and since then she appears to be thriving nicely. A few days later she gave birth to a fawn, but it was puny and did not live.

On November 27 two of our best sled deer were put in a pen built for them, for the purpose of ascertaining whether they would learn to eat corn meal and thrive under it.

On September 15 last we had twelve sacks of moss gathered, and proposed to mix meal with it at first, and gradually reduce the quantity of moss and increase that of the meal. The Siberians ridiculed the idea of the deer eating moss after it had been packed away in sacks when wet and allowed to freeze, and pooh-poohed the idea of their eating meal at all. For the first three days neither of them would eat the meal and only nibbled at the moss. Warm water was poured over the moss and the meal then mixed with it thoroughly. By the end of the first week they began to eat the mixture with apparent relish. We then commenced to reduce the quantity of moss and increase that of meal from day to day until only a small handful of moss was given with 1½ pounds of meal three times a day to each deer. On the tenth day one of the deer found use for his tongue, and licked the box dry after eating the feed, and two days later the other deer found the same use for his. On the evening of the twelfth day we gave the first

feed of clear meal, and each ate his portion greedily. On approaching the pen to feed them they would come toward me and root at the box just as a cow does when she wants her feed. I will here state that it is seldom that a deer offers to use his horns to hook one. I do not believe I have ever seen an instance when they have done so. One of the deer in the pen had a complete set of horns, and I was around among them, holding the box or pulling it away, and in various ways tried to irritate them to see if I could arouse a particle of viciousness, but without success. On the contrary, they were not only docile but affectionate. I could in a few days draw one's head down to my face, and he would stand as quiet as if in blissful response. I have a good illustration showing the tameness of one of these deer, in a view I send you, taken while at the cape, with Mrs. Thornton holding a box containing feed with one hand and the other about its head.

On the thirteenth day the deer were turned back to the herd and the experiment was a thorough success. They had not apparently lost a pound of flesh, but, on the contrary, seemed to look better than when first put into the pen.

The result was especially gratifying, because it was proof to the Siberians and natives, who were watching it with the keenest interest from the first, that a white man can teach them something in the management and handling of deer which they never knew before, and that we had confidence in our own judgment when pitted against theirs.

The day following the one on which the young deer were turned back into the herd, two of the oldest sled deer were confined in the pen for the purpose of teaching them to eat meal. They seemed to take to the mixed feed a little more readily than the first, but not quite so readily to the plain meal, and it was not until the sixteenth day that they were considered to have learned their lesson. By this time they would turn from the moss to the meal, and would have eaten double the amount given them if allowed to do so. The last day's feed consisted of 1 pound of meal to each deer at three feedings.

Another object sought to be gained in teaching the deer to eat meal was to feed them with it when on a long trip. As I have before stated, when traveling with deer, they are lariated out and pick their feed through the snow, at the end of a rope. A sack of 50 pounds of corn meal could be conveniently carried on a sled, when it would be impossible to carry more than a few pounds of moss, on account of its being so loose and bulky. On each trip I made with the deer in winter they were fed meal and thrived under it.

I am under the impression that better feed than meal can be had—bran and shorts, for instance, or ground barley, either of which would not be so heating as meal, and would probably furnish as much nutrition.

From our experiments with moss gathered in the summer for winter feed, it seems reasonable to suppose that it can be put up in stacks, or

stowed away under cover, and that deer may be kept up and fed just as domestic stock are cared for. This inclosure for the deer ought not to be a tight one, for they do not require to be kept in a warm place, but there seems to be no reason why deer could not be treated in this way, and be ready for immediate use, instead of putting them out with the herd and lassoed whenever they are wanted. This experiment will doubtless be tried next season at the station, unless we are prevented, from press of work, from having moss gathered in the summer.

I do not think moss would rot or ever get moldy if stacked up. The twelve sacks gathered last season were brought in when wet and lay in sacks until used, and it seemed as fresh as when gathered. It lay piled up in the frame building and froze during the first cold weather. Before it was fed each sack was thawed out. I think, if anything, freezing would improve it rather than otherwise.

Perhaps it is just as well at this time to refer to the fondness of reindeer for urine. The herders, with each watch, carried a little vessel with them, made of seal skin. It was a very light affair and would hold about a pint, being large enough at the top to allow a deer to get its head far enough in to lap the bottom. The herders made a practice to urinate in this vessel, and when held toward the deer a half dozen would start for it and drink it greedily. Frequently they would make a motion as if urinating in it and they would start toward the herder at once. By this means they were often enabled to catch a deer without the trouble of lassoing him, and there were a number in the herd who could be caught in this way at any time. Those who would not come up to the vessel to drink would quickly start for the spot where it was spilled and eat the snow saturated with it eagerly. They would eat snow where dogs had urinated, but not with so much relish.

In my experiments in trying to get the deer to eat salt but indifferent success was met with. They did not seem to take to it well, when mixed with their meal, and I discontinued it.

For several days immediately preceding Christmas, I took occasion to tell the scholars how it was observed by the whites, and explained such features about the day as my limited knowledge of the language would admit of; so that at the close of school the day before they pretty well knew why it was observed.

All through the winter the almost starving condition of the natives had been so impressed upon us that nothing but the knowledge that our supply of food was very limited prevented us from distributing regular rations to them. But I will make further reference to this matter in another place in my report.

I told the children about Santa Claus, and for them to tie their fur stockings up near their beds, as he was coming to visit them for the first time, and would remember every child.

I made up a lot of little bags out of empty flour sacks, and into each one put eight cubes of white sugar, about a dozen pieces of dried apples,

and a dozen raisins, not a very appropriate assortment for a Christmas present for a white child, but it was the best we had, and I found afterwards the selection was much appreciated by the little Eskimo.

Although our supplies were very limited I concluded to take enough from such as we had, and give each family the same assortment. It was made up of a tin can filled with flour, eight navy biscuits, one pint of rice, one-half pound of sugar, and one third pound of tea.

There are ten houses in the village and about 100 persons all told. The supplies above enumerated were made up into ten packages.

I had the herders harness one of our deer-teams to a sled, and at 12 o'clock started with four natives for the village, a half mile west of the station. When we reached the first house, I took a flash-light view of the deer standing just by the little skin window, through which a faint gleam of light was thrown from the oil lamp burning below. It occurred to me that perhaps this was the first time in the history of civilization that a live Santa Claus made his midnight visit upon an errand of mercy with a team of reindeer, and that the Eskimo were the first to actually experience what throughout Christendom is only a myth.

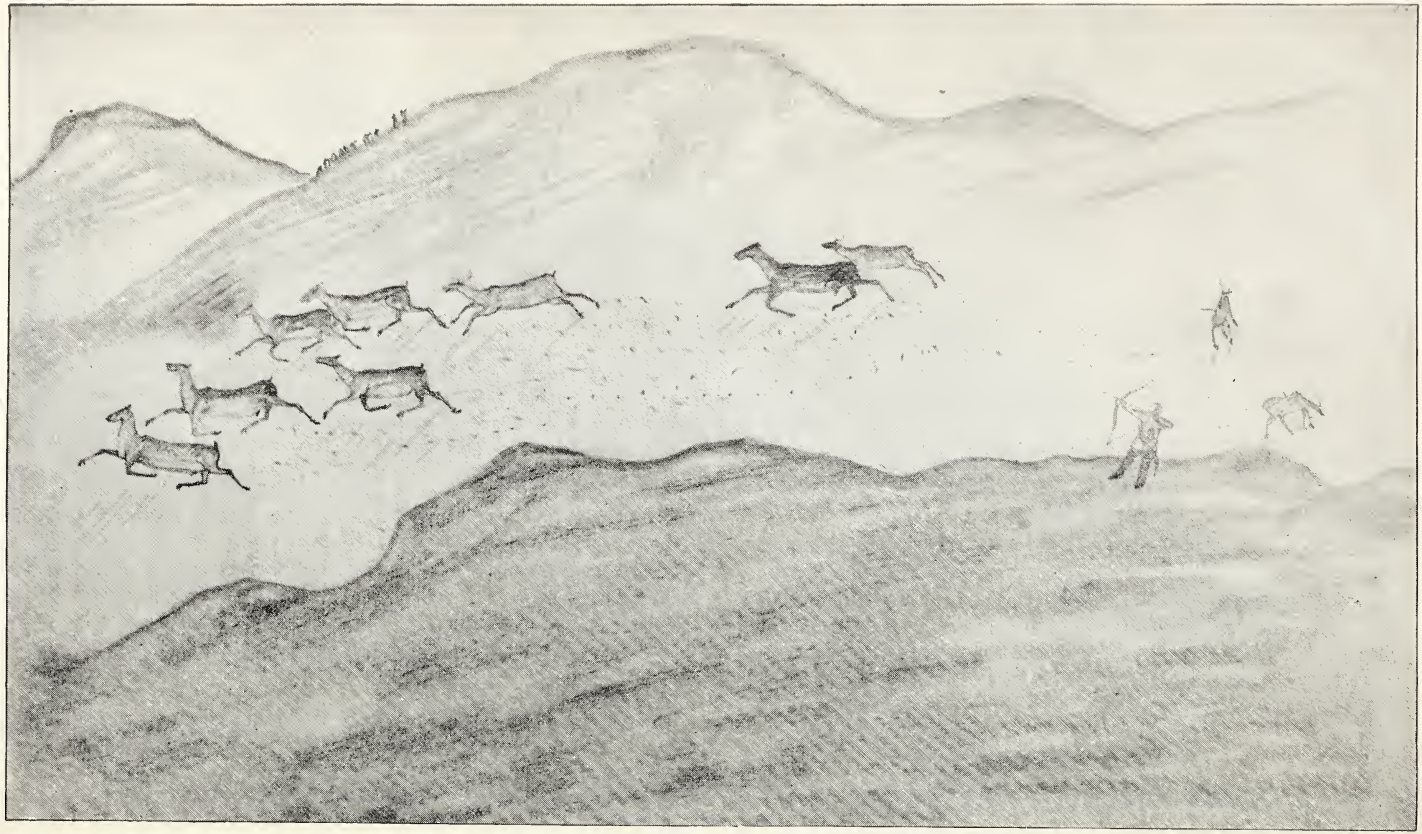
It became necessary to dig away the frost from one corner of the window, in order to get the packages through, and in nearly every instance the operation alarmed those below, when a package was immediately dropped down and they became quiet.

While in my stooping position at the first house, I suddenly lifted my eyes to the north and beheld the most gorgeous aurora I witnessed at any time during the winter. The night was a glorious one, cold and crisp, with the stars shining in lustrous splendor from the pale blue canopy above, and not a breath of air was stirring. Across the whole northern horizon floods of wavy light surged and swept from east to west, sending further up into the heavens streams of vapory light dancing up and down in graceful shadows, that easily led me to imagine they were caused by invisible spirits. For a time I forgot the object of my visit, and lay watching the play of the aurora as it shot forwards and backwards, and when I finally came to myself I looked around and found the natives lost in deep and silent awe at the spectacle.

The hour I spent in this service was one of supreme delight to me, especially so as the little handful of food I distributed made the bright eyes of a hundred people glisten with happiness and supplied as many stomachs with a feast they enjoyed before they again closed their eyes in sleep.

It will take too much space to record all the items I gathered in the short hour, as I peeped through their little skin-windows and saw them dancing around in high glee, old and young, and expressing their thankfulness for the many good things received, the like of which they had never before eaten.

The few dollars expended in this way will doubtless bring back many fold in deeds of kindness from these poor creatures, in whom there is much to admire and little to blame.



ESKIMO HUNTING CARIBOU. "REINDEER IN ALASKA."
(From native drawing.)

On the 3d of November last we commenced teaching school and continued it until January 6, when it was discontinued on account of cold weather and the utter impossibility of making the schoolroom comfortable. Teaching was again resumed on March 6 and continued until April 20, when school was closed for the summer on account of the natives leaving on their spring hunt for seal and walrus.

Every day in the week, excepting Sunday, a session of from one hour and a half to two hours was taught, Mr. Gibson and myself teaching alternately, he one day and I the next. When one or the other was absent from the station, the one remaining taught every day.

When it is borne in mind that at the time we commenced teaching Mr. Gibson and myself had but little knowledge of the language, and not a person in the village understood a word of English, some of the difficulties we labored under may perhaps be imagined. Perhaps a better idea of the difficulties we experienced in the start will be had from my experience the first day.

The sun set at 3:45 p. m. and we had given notice that school would begin at sundown. By that time every man, woman, and child in the village had gathered about the building and were anxiously waiting for the door to be thrown open. When they swarmed in and squatted on the floor, very much as a tailor does when at work, they were packed into our small room as closely as sardines in a box.

It was a strange and interesting sight, and, looking at them under the light of three lamps hung on the walls, I thought that under the heavy fringes of black hair hanging low over the foreheads of the boys and men, and the heavy braids of the same thick and glossy hue of the girls and women, there beamed as much intelligence as could be found among the same number of creatures anywhere in Christendom. The reindeer, squirrel, and rabbit clothing in which they were clothed made strange shadows on the walls, and, taken all together, it would have been an interesting picture for any one to view.

I should perhaps have stated that we have only three chairs at the station, and those were needed for our private use. Neither had we a stick of lumber with which to construct benches, and the natives had only the smooth, hard surface of the floor to sit upon.

In the four months of our residence among these people, up to this time we had found no leisure for learning the language, and we were hardly able to frame a single sentence that was intelligible to them. What few words we did use brought a smile to their faces, and, as a consequence, our vocabulary consisted in a word now and then, interspersed with a half-dozen signs.

In the opening exercises the words I had at my tongue's end would not fit, and I staggered about among Eskimo verbs and English nouns until I had the whole school laughing at me. I could not keep a straight face myself, and for a while enjoyed my own discomfiture as much as my pupils, but the most distressing part of it was to have my

assistant stand off to one side enjoying the sport as much as the Eskimos.

The most tantalizing incident of the session was my frantic efforts to get them to repeat after me the letters of the alphabet in concert. I had learned that "Far mart ko" meant "all." I thought, of course, if I said "Far mart ko," they would understand that I wanted them all to respond together, but when I got everything in readiness and said "Far mart ko," they sat as dumb as oysters, and although I brought the stick I used as a pointer down to the floor in very much the same manner a major does his baton when he wants the band to play, it had no more effect on them than if I had asked them in French to repeat the Lord's prayer. When I did finally get them to repeat the letters, they came out with about as much regularity as the shots from an army of infantry firing from their intrenchments.

Exercises of this kind were continued for some little time, when by some hook or crook one of the more intelligent of them got an idea of what I wanted, and soon we ran up and down the alphabet in splendid order.

I now began to feel encouraged and selected from the chart a word of but three letters, and it spelled "cat." Another word on the same sheet spelled "dog." After I had drilled them on these and pointed to the picture representing each until I thought they must know it by heart, they, when called upon to pronounce each one after spelling it, got so tangled up that I could hardly tell a cat from a dog myself.

My patience by this time was well nigh exhausted, and I tried to think of something for a change. Sudddenly I espied hanging on the wall, the sides of which were covered with everything from a mink skin to a woodsaw, a set of boxing gloves which the captain of a vessel that had spent the previous winter in the Arctic had left with us, and my first impulse was to put them on and knock some Eskimo out physically, as they had done me figuratively. I concluded, however, this would hardly be in keeping with the dignity I should assume as the superintendent of the Reindeer Station. It was nearly time, however, to close school, and thinking that in "In the sweet by and by" there was a moral for me, selected it as a closing song, which the pupils sang with a spirit that fairly made the rafters of the building ring.

In a few days, however, order came out of chaos, and soon we were drifting along as serenely as many a school of white children would be.

It was a difficult matter to get them to understand that they should observe proper decorum, and this can not be wondered at, for the Eskimo are more easily provoked to laughter, and among themselves are exceedingly talkative. We could not get them to understand that it was not quite in keeping with good etiquette for one to take off his shirt in presence of the opposite sex, and this rule was sometimes permitted to be infringed upon, when the heat in the room was too oppressive. This

practice, however, was never indulged in except by the men and boys, and they were made to occupy places in the rear of the room.

The first impression I had formed of the Eskimo in the matter of intelligence was fully confirmed before I had taught many days. They all have large heads, high foreheads, clear, bright eyes, and many of them are keenly intelligent, and I believe they will compare favorably in intelligence with any of the white race. As a class, too, they are what may be termed good looking, and among the number many of them are very pretty. For people who use their teeth as much as the Eskimo, who never engage in any kind of work, from sewing a light skin to forming the heavy soles of their boots, without biting it with their teeth considerably, they have remarkably good ones. They are a beautiful white, very even and regular, and many a white woman would get the best of a trade in an exchange of teeth with most of the Eskimo women.

The Eskimo are passionately fond of music, especially singing, and could grasp a tune very quickly. They prefer, however, those of a quick and lively character, and enjoy most those having a stirring chorus.

The progress made by the scholars was very satisfactory. Special pains were taken in teaching pronunciation rather than to make fast progress in learning to spell and read. I believe, at the close of the school, they had gotten so far towards an idea of the English language that they will enter upon their studies next winter with renewed interest.

The following will show something of the work done, but a more complete idea will be found in the monthly sheets forwarded to you in the regular reports:

| | |
|---|---|
| Number months taught | 4 |
| Number of children from 6 to 14 years of age in community | 17 |
| Number of children from 16 to 21 years of age in community | 18 |
| Average daily attendance during term | 25.50 |

On the 31st of August last a number of natives were started digging a ditch to bring water from a little lake about a half mile north of the station, so as to have fresh running water close at hand, and to carry it down to the beach. It is customary for vessels that come here for water to tow casks ashore with small boats, and, after rolling them up on the beach to carry water from the creek 50 feet or more and empty it into the casks. It is a tedious job, as most of the ships carry from ten to twenty casks, and it occurred to me that if the water could be brought to the station, through a ditch, it could easily be carried beyond the beach in troughs and thus made to flow into the casks.

In about four days a ditch was dug and an excellent flow of water had, but we proposed to increase the quantity by damming up the creek that supplies an outlet for the lake, some distance from the station.

The large quantity of water standing in pools all over the level land north of the station prevented the men from digging the ditch more than a foot or so deep, and work was discontinued until cold weather.

Accordingly, on December 30, a half dozen men were started on the work and continued it until January 27, working each day while it was light enough to see, and during that time the mercury ranged from 24° above zero to 29° below, the mean temperature being 11° below.

During this time they had dug through a slight raise of ground for about 10 rods to a depth of from 2 to 4 feet and 18 inches wide. They were obliged to pick and chop the earth out, it being frozen solid, and sometimes a half dozen strokes would have to be made to get off a small piece. It was most discouraging digging, and in this work I noticed what has impressed me so often, that the Eskimo possesses patience to a remarkable degree.

Cutting through this little hill connects the lower land on this side with the lake, so that the rest of the digging to finish the drain was comparatively a little job. After this cut had been made the natives worked at draining the creek above referred to, and when the work was discontinued in the winter all that was necessary to complete the drain was to fill in with brush and dirt.

We had only tools enough for 6 men to work advantageously and it was a hard matter to select those who were to do the work. They would come to the house before daylight, or even before we were up, and stand around in the cold until we had eaten our breakfast, sometimes a dozen crowding in for their rations of three navy biscuits each and a cup of tea, when they knew 6 men were all we could set to work. And they would do this when the mercury was so low that their hair, eyebrows, eyewinkers, and any fuzz or whiskers they happened to have on their faces were made to look like those of old white-haired men.

On the morning of January 4 we were aroused just after breakfast by loud knocks at the door, and on opening it found a native who said Darkus, the second youngest of our Siberian herders, was sick and barking like a dog.

I went to the frame building where he slept and was startled at the scene that met me. It was not yet daylight, and the dim glow from the lamp showed what proved to be a man, dressed in his fur clothing, crouching down on all fours, and astride of his back was one of the Siberians holding the one underneath with a grip of death. The man underneath was Darkus, and he was twisting and writhing about, growling, barking like a dog, and sinking his teeth into the skins and bedding. Standing about were half a dozen natives, all looking serious, and all in such a position to the door that they could dart out at an instant's warning.

For a moment I was startled, and my first impulse was to get the door between me and the sick man as soon as possible, for it looked as if I were standing in the dreadful presence of a genuine case of hydrophobia. This feeling did not last long, however, for I was told that the man was bitten only a few hours before, and it occurred to me that hydrophobia did not develop as rapidly as must have occurred in this

ESKIMO HUNTING CARIBOU IN ALASKA.

(Native drawing.)

case, if it were genuine, and I commenced to make an examination of the patient.

It appeared that, as he came into the building the night before, a dog that had sneaked in, probably in search of something to eat, suddenly rushed out and, in passing him, bit him on one of his hands slightly. He went to bed, and after a while went to sleep, but awoke some time in the night and began to moan and cry out, arousing the others sleeping in the room, and when he commenced to act like a dog they tied both his hands and feet.

Mr. Gibson put in an appearance, and we concluded that nothing but the bite of a dog in an aggravated condition of rabies would, in a few hours, bring about such an exhibition of agony, and immediately ordered the thongs on his hands and feet to be cut and told him to stand up. When he did so we saw that his legs were unsteady, but this was natural, for he had been tied for several hours.

We had him walk to the house, and he was given a good strong drink of hot whisky, for he had lain so long in the cold that he was chilled through. He soon lapsed into his violent contortions again, throwing his arms wildly about, growling and barking, and occasionally making a lunge as if to bite his arm, but on each occasion we noticed he failed to quite reach it. His pulse beat as regularly as my own, and his flesh had that cool, moist feeling that a hydrophobic victim would give the world to possess, if he had reason enough to know what it was worth to him.

We put some food before him and he ate it ravenously, taking it up with his teeth, and when it was all eaten he tried to make a meal of an iron-handled knife. A candle placed before him was nibbled at, but quickly abandoned, as it was hard to masticate.

About this time a native from the village sauntered in, when the sick man espied him, and, making a rush for him, out he dashed pell-mell, and then commenced a mad race over the frozen snow. The native was too badly frightened to be caught, however, and kept on running long after the sick man was brought back to the house.

At this time the native doctor of the village came in, and, going immediately up to the man, slapped him violently on the back, at the same time blowing into his face. The man immediately threw himself back as stiff as if dead. His eyes rolled in his head, and, after a paroxysm of growling, barking, and gnashing of the teeth, he gradually succumbed to the mysterious power of the doctor and went off into a condition of quiet and peace. It did not last long, however, and, becoming tired of his antics, we had him taken to the house, and in the coldest corner tied and gagged him and left him stretched out on his back, with nothing to gaze at but the frost-covered rafters above. In an hour or so he signified his willingness to behave, and we released him. He by this time saw that his foaming frenzy did not frighten us and that a repetition of his performance meant more severe measures than being tied in the cold.

To this day most of the natives believe that he had a genuine attack of hydrophobia, and no amount of argument will convince them to the contrary. Of course, the doctor believed it a most serious one, and his early recovery was caused from his wonderful healing power. Later in the winter we learned that the story of the man's sickness had traveled 150 miles south and nearly double that distance north. Many of the natives in the village were so badly frightened that they came to the station continuously for some days, and a number of children stayed away from school for a day or two for fear they would be eaten up by the Siberian.

I have related this incident to show the variety of diversions we have had at the station, and that sometimes they are of a character to severely try one's patience.

I have referred to the opposition of the Siberians to any change in the management of the deer from that which they had been used to practice, but we encountered their most severe opposition in the matter of getting them to break deer to the sled.

I do not wish to be understood as saying that at any time they became unruly or that we had to coax or cajole them when any task was to be performed. On the contrary, they were uniformly obedient, and it seldom became necessary to speak harshly to them, but in matters in which they were supposed to have a thorough knowledge they were inclined to try to argue us out of any new departure or experiment.

There were only three deer that had been broken in the entire herd, and the Siberians told us there were no more geldings in the herd. Judging from the appearance of some of the deer, we thought they must be mistaken, and one day ordered them all brought to the station. So strong was their opposition to breaking deer that we began to think it was part of a prearranged plan among themselves not to allow us or the natives on this side to gain a knowledge of this important branch of the business. We thought perhaps they had been so instructed before leaving the Siberian side, or were jealous of the natives here learning the business, for fear they could not obtain a job in the future.

The more than half-expected possibility of being obliged to move the herd into the interior a hundred miles or more for feed stared us in the face, and, without deer to haul supplies, we would be left in a sorry plight indeed, especially as we had no dogs, and up to this time it looked as if we might not be able to procure any. Besides, there were experiments to be made in the matter of driving on long journeys, to test their capacity for traveling, and to teach them to eat domestic food, and we thought the time ripe for vigorous measures, in this particular at least.

When the deer came up we ordered the Siberians to catch a gelding They insisted there were none. They were then ordered to catch a bull. They began an argument in opposition to it, and for a time it

looked as if they would not obey the order. However, they quickly thought better of it, and soon a fine, large bull was struggling at the end of the rope, but they experienced more trouble than usual in getting to his head, so as to hold him better. We thought this a part of the play, and when it took the four Siberians to hold him, there was no one to catch another deer, so they were ordered to tie him to a post standing near. Against this they solemnly protested, saying he would thrash about until he killed himself, but we as emphatically repeated the order, for it now looked as if it had resolved itself down to a struggle in which either Siberia or the United States must triumph, and the order was again repeated in a manner that meant no trifling.

The herders then started for another deer, and in less than five minutes the bull lay on his back dead, having broken his neck in his struggles.

The herders came up in a bunch, with an air that looked as if they thought that settled it, but they looked chagrined when they were told in an emphatic manner to bring up another bull, and, too, in language more emphatic than elegant; and in a moment they returned to the herd. In a short time they came up with a fine specimen of a two-year-old, which they had suddenly discovered was a gelding, and in a little while had another to match him. In a few days eight more geldings were sifted out, and by the middle of winter we had twelve good sled deer, all thoroughly broken.

This little episode, although it cost us a deer, taught the Siberians a valuable lesson, and in after months, in observing the alacrity with which they obeyed orders, we concluded the sacrifice was a profitable one.

We have found the natives, as a rule, very willing to work. While there is occasionally one who would continue at a task without some one near to encourage and tell him just how it should be done, it is generally necessary for one to be about to oversee the job.

They of course knew little about the use of tools, and when put at house-painting or driving nails into boards or using a hand-saw were not so graceful as an old mechanic, yet they learned readily.

While the Eskimos are not inventive, they are good imitators, and although when the station was established few of them knew anything practically of even the use of an ax, yet in a short time they got so they chopped all our wood; and in winter, when the weather was so cold as to almost take the temper out of tools, they did not break more than the average white man would under the same conditions.

The native herders, of whom there were four, continued with us the entire year. They took very kindly to the work, and although our patience was severely tried at times, especially by one of those who belonged at Cape Prince of Wales and often importuned us to be allowed to return home, they were as a rule easily managed, as much so as the same number of white men would be.

They were compelled to observe certain discipline, and it was a pretty hard matter for a man whose life had been spent in going and coming at will, and working when he liked, or being idle when the notion seized him, to be obliged to rise at certain hours, to go to school regularly, and to observe certain rules about his dress and house, as they were promulgated to him.

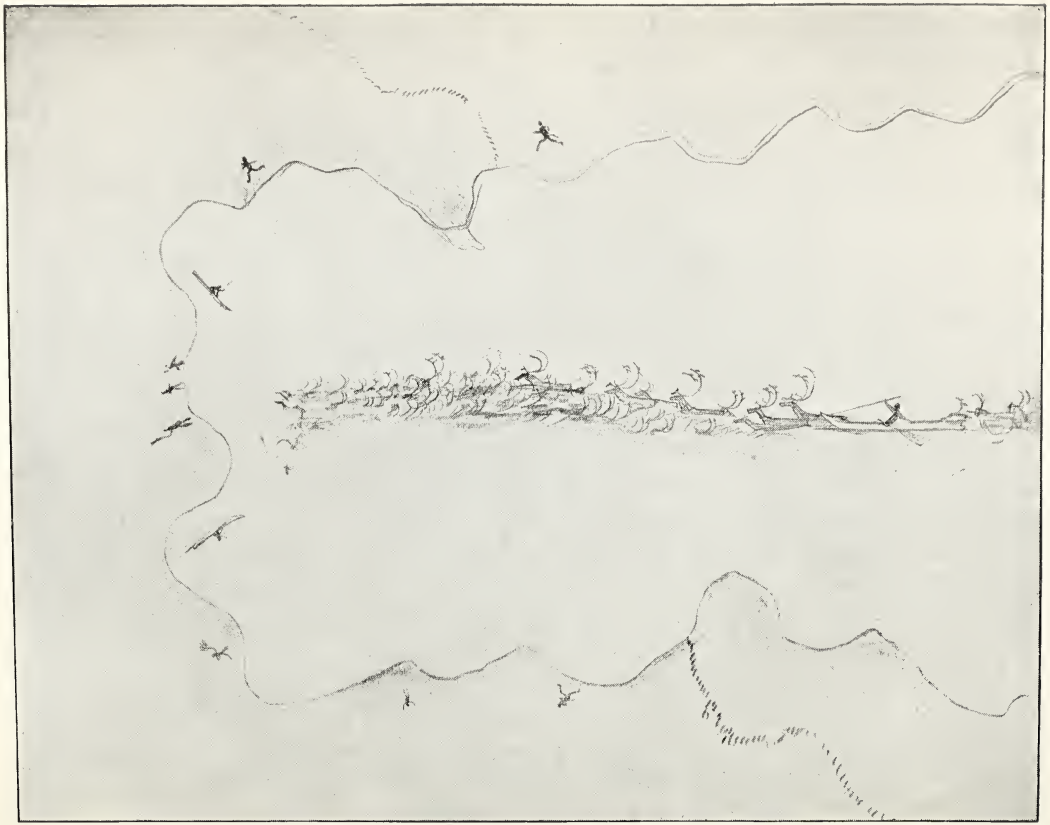
In one matter we were very strict, namely, the instruction of the native herders by the Siberians in every branch of the business. The feature of throwing the lariat was particularly enjoined upon them, and every day when the weather permitted they were obliged to practise for an hour or two. This was also encouraged among the boys in the village, and as a substitute for deer one of the boys held a set of deer horns on his head and would run backwards and forwards until he was caught, when another boy would take his place. The result is that there are a number of the youngsters who can throw the lasso very nicely, and two of the four native herders have become very proficient in it.

In the early part of the season we began to look around for a suitable native for herder who had a wife who could do the cooking for the rest. Men enough could be found, but their wives did not appear to be the right kind for such work. Finally, one was found who answered the purpose, but he did not want to take the ten deer for two years' service, the same paid to the others. It was finally thought best to hire him outright for one year at a salary of $50, and it proved to be a most excellent selection. He was attentive to his duties and industrious about the station. His wife did all the cooking, and another year would make her quite proficient in this kind of work, for toward the end of the year she was taught to make both yeast and baking-powder bread.

The man became a close student of the deer and seemed to absorb it all, even down to the minutest detail, and the Siberians found it a pleasant task to instruct him. I am in hopes next year he will be willing to come under the usual rule of receiving deer for his work, at the end of which time he will be competent, I believe, to take charge of a herd himself.

Our force of herders remained intact throughout the year, with two exceptions. Among those first engaged was a native who had a half-breed Russian wife. She had been among the whites both at St. Michaels and Point Barrow, and knew just enough English to make mischief among the natives. She behaved in such a manner that the only thing to do to avert dissatisfaction among the natives was to discharge her husband, which was promptly done.

The other case was that of a native belonging to our village who took sick early in the winter and at times was so low that he was thought to be dying. He finally improved in health, but not so as to be able to return to his duties. His wants in the way of food were largely sup-



HUNTING CARIBOU IN THE WATER.

(Native drawing)

plied from the stores at the station, for we felt he had taken sick while in our employ and should, in a measure, be cared for. I think, so far as it is possible, the apprenticed herders should be men who have wives and their families should be with them. Our experience in the past year has demonstrated that they are, in the long run, more apt in learning, and take more interest in it than the young men. Besides, if the herders do not have their wives with them they easily become discontented.

The daily rations of the herders, distributed to the 8 men and 1 woman, consisted of the following articles of food: 81 navy biscuits, 1 gallon seal oil, 3 pounds dried fish, 4 pounds corn meal, 4 pounds beans, one-half pound tea, 1 plug tobacco, and 200 matches, twice each week.

When it could be had, frozen fish or whale meat was given in place of dried fish, and occasionally bread made from flour was given in lieu of biscuits. Occasionally rice was given, and a little molasses to sweeten their beans.

For ten months but 2 white persons visited the station. One of these, Mr. Thomas Lopp, one of the teachers at Cape Prince of Wales, 60 miles west of the station, and the only place where there are any whites between here and Point Hope, 300 miles north of here, made us a visit a few days during April. He came for the purpose of seeing the deer after they had passed through the winter and to see them driven to the sled. He had visited the station in August last in company with his wife, and on his last visit he was afforded an opportunity of seeing the deer work at hauling wood, and took several rides with them. What his impressions were will be seen by a letter written me, a copy of which I send herewith, marked Exhibit B.

During the early part of January, Mr. Lopp and his young wife made a remarkable journey with dogs to Point Hope, for the purpose of visiting the different settlements, in a sort of missionary pilgrimage. They were gone about two months, and I happened to be at the cape when they returned. Considerable apprehension was felt on account of their long absence, not only by their associates, Mr. and Mrs. Thornton, but by the natives, and it was feared they had either perished from cold or been carried away on the ice in crossing the dreaded Kotzebue Sound. Strange as it may appear, among the 500 or more natives at the cape, there was not one who had ever made the journey in winter, and their trip was all the more remarkable because it was undertaken in the face of opposition by the natives, who are supposed to know the country and its dangers in winter traveling.

During their absence natives had visited the station from some of the settlements on Kotzebue Sound, drawn here partly for the purpose of seeing the deer, the particulars of which Mr. Lopp had outlined to them at his different meetings. We are therefore indebted to Mr. Lopp for arousing an interest among the natives of that section in this enter-

prise, and I am glad to be able to say that they appear to feel anxious to avail themselves of its benefits.

I also take pleasure in sending a copy of a letter written by Mr. Thornton at Cape Prince of Wales, giving his view of this question, which will appear in Exhibit C.

The other person who visited the station during the period above referred to was Mr. John A. Dexter, who for the past year has been in charge of the works of the silver mine near Golovin Bay. He is our next nearest neighbor on the south, 160 miles distant. He arrived here January 19, and on account of my being in very poor health at that time, he was prevailed upon to remain a few days. The weather soon became very stormy, and aside from a couple of short trips he made from here, his departure was delayed until about the middle of March. In the meantime he made several trips with deer, and had an excellent opportunity to learn and observe much about them. I take pleasure in transmitting herewith a copy of a letter written by Mr. Dexter, giving the result of his observations upon the deer question, marked Exhibit D.

On the first of March last, I made a trip to Cape Prince of Wales, of which extended notice has been made elsewhere. I am glad to be able to state that the opposition supposed to exist among some of the leading men of that village to the introduction of deer on this side, for the reason that it would interfere with their traffic in skins, has ceased, and they appear now to be anxious for its success.

I will observe here that from the early establishment of the station no pains were spared to make the natives feel that the enterprise was one designed for their special benefit, and that it was an institution they should support.

Whenever visiting natives arrived, they were made to feel as much at home as the means at our disposal would allow. They were usually given a biscuit or two and some tea on their arrival, and some time during their stay they were shown the deer, and the object expected to be accomplished was explained to them. In many ways they showed that they realized the importance of the undertaking, and were led to a warm advocacy of the project.

There are seven different tribes or settlements within a radius of 100 miles of the station, numbering about 1,000 persons, all told, and divided as follows, the first four named lying west of the Station, the others east:

| | |
|---|---|
| Sinarmetes | 100 |
| Poolezarmetes | 45 |
| Tarpkarzometes | 35 |
| Kinarmetes | 530 |
| Noongmetes | 60 |
| Synargometes | 30 |
| Kyazermetes | 200 |
| Total | 1,000 |

There is more or less difference in the dialects of the different tribes, that of one lying within a few miles of another differing more or less, but they are brought so much in contact with each other that a native belonging to one tribe can talk with one of another with little difficulty.

The different tribes have no chiefs and are not controlled in any way by one particular person; but there are those who are considered headmen, and they are the ones possessed of the most property.

Perhaps the doctors may be said to be the leaders, for in some respects they control the actions of the natives. They are supposed to possess an invisible power, and through their natural tendency toward superstition the natives are often led by them to do many absurd things.

Notwithstanding the extreme poverty of the natives all through this region of country, they do not seem to be decreasing in numbers, but, on the contrary, increasing. Most every family contains from one to half a dozen young children, and during the past year there have been in the tribes above enumerated probably twenty births and but four deaths.

The prevailing winds in the summer, or from the 1st of June until the 1st of October, are from the south, and those for the rest of the year are mostly from the north and northeast. The north winds often are accompanied by snow, but storms of this character usually come with an east or northeast wind. A west wind always means fair weather.

While thick or foggy weather is very rare during the warm weather the mountains and hills are often wholly or partly obscured by vapory clouds, and they generally presage rain. During the warm months of summer rain is of common occurrence and often for three or four days in steady downfall, but seldom accompanied by wind. An old-fashioned down-East rainstorm is very rare.

It must be borne in mind that these statements are made from an experience of but one year, but I am told that the weather during that time may be taken as a fair illustration of that which usually prevails here, although the natives tell me that more rain fell here last summer, and more snow last winter, than usual.

The longest day occurred on the 22d of June, at which time the sun was out of sight but a short time in the twenty-four hours, just dipping behind the northwestern horizon, only to come up in the northeastern almost immediately. There was only the faintest diminution of daylight; indeed it was barely noticeable.

From about the middle of May until the middle of July it was daylight most of the time, but when once the days commenced to shorten they did so very fast, and this was the case when they began to lengthen in the spring.

There were no dark days, the shortest, about December 23, when the sun shone nearly two and one-half hours.

One peculiarity about the days in this country is the long twilight both before the sun rises and after it sets. For fully two hours before the sun appears, a bright glow spreads over the eastern horizon, just as appears in lower latitudes a few minutes before the sun rises. The same condition exists after the sun disappears in the west. The light thus furnished enables one to see for a long distance, and helps to lessen the monotony of the short days.

I will here state that the watches of both myself and assistant became broken in the early part of the winter, and we had to depend for our time on a single eight-day clock, and on two or three occasions when it stopped we had to set it by the sun as it reached the zenith.

The coldest day occurred on the 17th of January, when our thermometer registered 29° below zero. From the 21st of October until the 8th day of April, a period of five months and sixteen days, there were but two days when the mercury stood above freezing point. This quotation is made from the thermometer readings taken at Cape Prince of Wales, for the reason that our thermometer met with an accident early in the winter, separating the fluid, and although we used it in making our record in the log book, it can not be said to be accurate. The differences between our thermometer and that used at the cape on certain dates show that ours did not register within a few degrees as low, but from other comparisons made it is safe to say that there is little if any difference in the weather between the two places

The first fall of snow occurred at the station on September 14, but only about 2 inches covered the ground, and it disappeared again in a few hours. Snow was first seen, however, on the mountains east of the station on September 5, and on the 15th of that month they were covered and remained so.

The first blizzard occurred on the 8th of November, and afterwards they were of frequent occurrence, but with a few exceptions they did not last longer than two days. Occasionally they lasted for four days, and from the 8th of February to the 25th of that month a blizzard may be said to have raged all the time. Only now and then for a few hours did the wind cease to blow.

Perhaps the year in this latitude may best be divided into two seasons, namely, that of spring or fall and winter. The summer is so short and there are so few days when the temperature is not chilly that it can hardly be said to occur at all. Yet there are several weeks during July and August that there is not a particle of snow to be seen, the whole surface of the country being covered with a verdure as rich in color as that found anywhere in the States, and wild flowers abound in wonderful profusion. During this time many of the species of birds

TRAPPING CARIBOU IN ALASKA WITH A NOOSE.

(Native drawing)

found in temperate climates flutter among the grass and bushes, bedecked in beautiful plumage and singing in joyful glee, but they are here only for a brief season, perhaps coming to enjoy a trip to the country, as it were, just to get a breath of fresh air.

The only birds found here after the winter sets in are the ptarmigan, or Arctic grouse, and the Arctic owl, both of which change their plumage as the season advances from a dark brown to white, the former having no dark feathers except a few at the tail, and the latter being white, covered with dark brown spots throughout.

The snow drifts so badly that it is hard to give the true depth on a level, but perhaps 2 or 3 inches is about right. Most of the gorges or ravines, or wherever an obstacle offers a good chance for a drift, have snow to a depth of from 10 to 15 feet.

There is a peculiarity about the snow of this country that I have never noticed in any other—that is, the moisture seems to freeze entirely out of it. A piece when struck or thrown down emits a sort of metallic sound that I did not suppose could come from frozen snow.

The thickest ice found in the bay had frozen to a depth of 4 feet 4 inches, and from various observations made this may be said to be the average thickness.

Neither in the fall nor spring are large icebergs seen in Bering Sea, but fields of ice many miles across are continually floating about from the 1st of November to the middle of July. The channel between Siberia and Alaska is seldom frozen over, and only very rarely is it possible to cross on the ice from either side to the islands which lie about midway in the channel, and are known as the Little and Big Diomedes. The channel from one continent to the other is about 40 miles wide.

The natives hunt seal on the ice, even in the coldest weather, and nearly every year more or less of them are carried away, and nearly perish from starvation before the ice field drifts so as to allow them to leave it and reach the shore.

I made the last trip made by any one between the station and the cape this year, by water, before it froze up, reaching the station on my return on October 21. Both in going and returning, we encountered snowstorms, and it made traveling by canoe very disagreeable. From the date of my return until the 1st of December, traveling by canoe was prevented by ice in the sea. The first communication between the station and cape by sled was on December 9.

The effect of the sun shining on the snow in the spring is most severe upon the eyes, the natives being obliged to wear shades or goggles cut from wood, with a very narrow opening, through which they see. The light is most glaring, and did they not take this precaution there would be a good deal of suffering from sore eyes, and even this simple device does not prevent many from becoming blinded, and for several days they can scarcely see at all.

Rainbows in the summer are of frequent occurrence. During the long spells of rainy weather there are times when the sun will break through for a few hours, and generally a beautiful rainbow will appear. They are often of gorgeous hues, and the different colors and shades appear to stand out more distinct than I have ever seen in any other country, caused doubtless by the atmosphere being so pure and clear.

In winter the northern lights are often seen, and are sometimes startlingly grand. On Christmas eve the most sublime meteoric display I have ever witnessed spanned the northern horizon and rose almost to the North Star, which stands in such a position that were a pendulum suspended from it the lower end would swing almost directly over the station.

Whenever the sun shines and there is no wind, the weather is delightful both in winter and summer. A slight breeze, however, even in the spring months makes it cold, and although the sun may stand directly over us it does not seem to have much influence. This can hardly be wondered at, for it blows over a vast area of snow and ice.

From October 1 until June 1 we dressed in reindeer clothing throughout, entirely abandoning our heavy underclothing, and I must say I have never felt so warm and comfortable as when thus clothed. We wore a suit of light skins, with the fur next to the flesh, and this gave us a suit of buckskin on the outside. It was all the clothing necessary indoors, and would answer for outdoor wear unless the weather were very cold. In severely cold weather we wore another suit of reindeer clothing over the under suit, and when thus dressed could stand the most severe weather.

From the day of our arrival here we laid aside our leather shoes and adopted the Eskimo boot, or "kummuk," as it is called. Besides being warm, it is the most comfortable covering for the feet I have ever worn. Some are made to come just above the ankles, and others to the knees. They are made loose enough to admit of putting grass in the bottom, and in cold weather a pair of sealskin socks are worn. The soles are made of heavy sealskin and turned up about an inch all around. Two straps of thin sealskin are sewed on either side of the sole, crossing the foot sandal fashion, tying over the instep or heel, as the wearer prefers. On the tops of the boots is a piece of seal string, which is drawn around the leg as tightly as desired, and by this means rain or snow is kept from getting inside. In winter reindeer or sealskin boots are generally worn with the fur outside.

You know it is said of some people that they are a nation of fighters. It can be truthfully said of the Eskimo that they are a nation of scratchers. Lice are as natural to an Eskimo as hair is to a dog, and I verily believe if any single one was selected from them all to be thoroughly renovated a hundred or more lice would be found upon him.

They are so common that every house has what is called a "koomoon." It is a stick about 18 inches long, on one end of which is a round

piece of ivory an inch in diameter. This is used whenever a louse is perambulating a part of the back that cannot be reached by hand, and if a visitor calls at another's house it is considered a breach of Eskimo etiquette not to offer him at once a koom-oon.

The artigees, or coats worn by the natives, are made large enough at the armpits to slip the arm out easily, and he is thus able to get his bag-shaped jacket off without help. This enlargement of the sleeves serves also the double purpose of allowing him to draw his arms out and hug his body, if cold, and to give them free scope to scratch, an amusement they all indulge in to a great extent.

Our house accommodations have been so limited and our duties of such a nature as to require the presence of natives in the house more or less. For instance, the herders come home regularly to make their report on the condition of the deer, when returning from the herd. Others come here to trade; others on a thousand different errands; and they doubtless left more or less on each visit, which sooner or later found good quarters on our persons.

We enforced the rule strictly, that natives should not come to our house unless for some particular object, and they always managed to find one, though sometimes trivial. Sometimes they would come to our door nearly frozen, and to refuse them admittance would be downright cruelty. Besides the exposures we underwent at the station, when traveling of course we generally had to sleep in their houses, and such occasions were quite frequent. So, until we can get so situated as to be able to have one room at least where natives will not be allowed to enter, we have got to grin and bear it, as white men living in the Arctic country must learn to do in many other things.

Our bedding consisted entirely of reindeer skins. We adopted the Eskimo habit of stripping entirely naked on retiring, and with the furs of the skins next to the body slept warmly, and in the morning got up feeling refreshed and without experiencing that tired feeling so often felt in cold countries in winter, having slept under a half dozen or more comforters.

The natives about the station were given to understand that we would take decided grounds in the matter of dogs disturbing the reindeer, and they knew orders had been given to the herders to shoot any dog seen in the vicinity of the herd.

This rule was rigidly observed, and I am glad to say that it became necessary to kill only five dogs during the year, and in each case we settled with the natives by paying them about $1.50 for each dog and they were perfectly satisfied. The visiting natives were especially careful not to allow their dogs to get among the deer, and not one among those that were here was killed. This seems strange, as they were allowed to run about as they pleased. But I have discussed this matter at considerable extent in another part of my report.

During the winter we lost five dogs by a peculiar disease that pre-

vailed to a considerable extent among those of the different villages along the coast. They would suddenly stagger and reel about and showed a disposition to be cross, biting any dog that came near them. Finally they became so weak they could not stand, and they would lie stretched out on the snow, biting themselves occasionally, and bleed at the mouth. One dog that we lost bit his tail near the root so much that the snow for quite a space about where he lay became spattered with blood. In two instances we shot our dogs for fear they would bite others, and they in turn would be attacked by the same disease. During my visit to Cape Prince of Wales during the winter a number of cases occurred similar to those which occurred at the station, and most of the dogs died. I am told that it sometimes rages to such an extent as to kill most of the dogs in the villages.

When off duty the herders were set to work either at fishing, hauling or cutting wood, or some other task. Most all the wood used at the station both for fuel and for building purposes was hauled and cut by the herders. It often occurred, however, that they could not do anything but attend to the herding, especially at times when the weather required one watch to remain with the herd beyond the usual hours.

There was more or less illness among them, which required a change in the watch, but it was never anything more serious than a bad cold, and in a few days they were ready for duty again.

In view of the probable continuance of this business and since in a few years the herd will reach such numbers as to make it necessary to brand the reindeer, we concluded to adopt a brand for the station, and have selected that of cutting the left ear so as to form the letter "V." This precaution is not necessary at present, since all domestic reindeer in Alaska belong to the station; but the time will doubtless come when other and private herds will exist in Arctic Alaska, and the occasion for branding deer will then become not only proper but necessary. Most of our herd have already been branded, and they will all be before the end of the present month. Of course this year's fawns will not be branded until they are one year old.

If the time ever existed when this portion of Alaska was a fur-bearing country, that time, judging from our observation of the past year, has passed. The kind of furs found along the coast consists of the white and red fox, the brown and grizzly bear, polar bear, lynx, mink, and squirrel.

In another part of my report I have given the names and locations of seven villages, numbering about 1,000 persons. I think it safe to say that in all that number there were not enough fur-bearing animals killed during the past year, outside of the squirrel, to average one for each person. Thus it will be seen that if all the furs caught in the section of the country covered by those people were purchased by one individual, he would not do enough business to pay for stocking and keeping a trading post.

CARRYING THE CARIBOU HOME.
(Native drawing.)

There are considerably more furs brought into circulation among the natives above mentioned, but they are bought from the interior natives in exchange for seal and reindeer skins. Among the natives in the village adjoining the station I do not think there were a dozen fur-bearing animals caught altogether, and the past year seems to be a fair sample of the other seasons.

Among the animals which abound here are the gray and Arctic rabbit. The gray rabbits are caught in large numbers south of the station, and are used by the natives for stockings and blankets. The Arctic rabbit is about the size of the jack rabbit, and is as white as snow. It is a beautiful thing to look at, but has little value, as the fur comes out with the slightest use.

The prices paid for furs are not fixed. A native gets for one just as much as the person wanting it will pay, and that depends upon how badly he wants it. When the ships are here in the summer furs bring a better price than at any other time, and after they leave for the Arctic most of the fur falls into the hands of a few men in each village, who are known as traders.

The keeping of an accurate account of the goods traded for articles at the station has been almost impossible. Most of it has been in little driblets, such as a few crackers for a few fresh fish, a little flour for a piece of seal meat, a few biscuit and a little tea for some work done, and it can only be returned in a sort of lump. There has been little or no waste, however, and in the matter of food, if any was left after a meal, and was left in the pantry until it became a little stale, there was always an empty stomach near by that was ready to eat it.

Whether gold or silver exists in this section of country or not is yet to be determined. The former has been found north of us in small quantities on streams flowing into Kotzebue Sound, and rich silver deposits had been found about 200 miles south. No prospecting appears to have ever been done in this region.

The natives have brought some very fine specimens of pure graphite to the station and some samples of white mica, which were found in the mountains east and in sight of the station.

Samples of stone from which a red and also white paint are made have been brought in, and we are told both exist in large quantities. Whether they would have any value I do not know, but both seem to make colors that stand exposure to weather very well.

I have stated before that Port Clarence is the name of the harbor on the north side of which is located the station, and that it is the rendezvous of vessels on their way to the Arctic. They arrive here about the last of June and remain until towards the 10th or 15th of July. The bay affords the ships a secure harbor, and sometimes as many as twenty lie here at one time, waiting for the ice to clear in the Arctic so as to permit them to sail into its waters in search of whale.

During their stay they lay in a supply of fur clothing for their men

and trade for furs and occasionally whalebone. The ships seldom run in here on their return from the Arctic in the fall, for they usually stay there until driven out by the ice, and when they once get turned toward home they spread all sail and lose no time in getting away from the frigid waters of the northern sea.

But one vessel stopped here last year on its way south, the *Mary D. Hume*, which had spent two winters at Herschel Island, the most northeastern point ever visited by a whaling vessel. She arrived here on September 6, and left on the following day. This ship had met with a most profitable voyage, their catch amounting in value to several hundred thousand dollars.

Among the fifty or more vessels that come into Bering Sea each year, the one most welcomed by the few whites and natives as well, is the U. S. revenue steamer *Bear*, commanded by Capt. M. A. Healy. In the past twelve seasons Capt. Healy has spent two or three months each year cruising about, visiting the different missionary and trading stations, and his vessel has often been the asylum for unfortunate seamen, and the only hope and protection afforded the whites scattered along the coast. When he thought a white man, who had been left at some native settlement, was liable to be molested by them when he was completely at their mercy, some of the leading natives were summoned aboard the ship and then told he would hold them responsible for the white man's safety until he returned the following year. This was as good as an insurance policy on his life, and the natives were certain to see that no harm came to him. When the *Bear* is in the vicinity of a native village it swarms with natives, and, although they stand in mortal dread of her guns, they are kindly treated, and given to understand harm will only come to them if they molest any of the whites living among them.

Besides receiving valuable assistance from the men on the *Bear* in the erection of the frame building and supplying us with many things that had been overlooked in our stores, both myself and assistant received a number of little kindnesses from Capt. Healy and also from his wife, who was aboard the ship last season, that contributed very much to our comfort during the long winter months in which we were left alone. To the officers of the *Bear* we are also under many obligations for favors received, and of a character that would not admit of anything in the way of recompense, but in expressions of gratitude.

As I concluded the last paragraph I happened to look toward the south and saw a low, oblong-shaped mound rising out of the water, and it marks the location of what is known as King's Island. It stands solitary and alone, and is inhabited by about 200 natives, who are completely isolated from the rest of the world for eight months in the year.

The natives depend upon the seal and walrus almost entirely for their living, and, as occurred two years ago, if their catch is small they are left on the verge of starvation. At the time referred to the *Bear* called

in there on its way north and found the natives so reduced for food that they were killing and eating their dogs. Capt. Healy at once started a subscription among the officers of the ship and $100 was quickly made up for the purchase of food, and the *Bear* immediately steamed for St. Michaels and returned in a few days with the relief so generously donated.

I now come to a subject that I wish it were possible to pass over with only a passing reference, but I feel that it deserves to be even more fully discussed than perhaps would be proper in my report. I refer to the poverty of the natives.

On the 31st of March the last page in our log book was reached, and a new one had to be taken for the balance of the year's record. Before reaching the bottom of the page the following was written: "This book contains a record of affairs at this station of just nine months. Had we opened the record with the subject that was most prominently brought to our notice, it would have been the deplorably poor condition of the natives. Had we recorded every day the subject that was most prominently brought to our attention, it would have been their continual and harassing poverty, made doubly severe by the rigors of an Arctic winter. The same subject is an appropriate close of our record at the end of this book, only doubly emphasized. On account of the limited supply of our stores, we have had to ignore many appeals that have been made to us for food, and we look forward to the advent of the short summer with many hopes that it will come earlier than usual, for the sake of these poor people. To-night I detected a little boy in the act of stealing a biscuit in our house, and it was a struggle when I reprimanded him. I would rather have given him the box, for, poor soul, his hunger craved it."

The natural food of these people in winter is the seal, whale meat, and dried fish. In the summer months it is prepared by trying out the seal, and that season they catch fish for winter use.

In another part of this report it is shown that no deer or other fresh meat is now obtained for food, which, a few years ago, was so plentiful. Occasionally a grouse or ptarmigan is caught, and sometimes an owl in winter, but they are scarce, and the only other fresh meat to be had is the rabbit, and in this particular section they are by no means plentiful.

By the middle of the winter the supply of seal meat and oil put up in the summer is exhausted and the men must then venture out on the treacherous ice to open water for seals, sometimes sleeping there for several nights and subsisting entirely on dried or frozen fish. Often they have their trouble for their pains and return home empty handed.

The women and children, in order to get food sufficient to sustain life, stand on the ice in the bay and fish through holes cut through the ice 3 and 4 feet deep. The fish will weigh but a few ounces each, and unless unusually good luck is met with, one person can catch scarcely enough in one day to supply two or three persons. Occasionally they vary it

by spearing small flounders which are found a little nearer shore. It does not matter how cold the weather is. They stand on the ice behind blocks of snow piled up to protect them from the biting winds, sometimes for hours at a time, and it has often been a wonder to me how they manage to keep from freezing.

These constitute absolutely the only food these people have to eat. A more extended reference to this subject would be to reiterate the same dismal conditions and the same dreary routine of labor, trials, and sufferings of these people to obtain nourishment sufficient to sustain life.

There is one feature, however, that will illustrate better than anything I call to mind the scarcity of food with these people. It is the length of time a mother nurses her young. It is no uncommon thing for a woman to nurse her child until it is four or five years old, and although its teeth are all completely formed at two years of age, they are permitted to suck at the mother's breast until they are nearly large enough to take a hook and join the other little children in supplying themselves with food. The mother reasons that it is better to let the child nurse her than allow it to cry for food when she has none to give it.

And in the face of this distressing condition of affairs, there was food sufficient to supply their families for several months, yet we have scarcely lost the value of a dollar by theft. In plain sight of their village there were feeding a herd of 150 reindeer, that would not only supply them with food in abundance, but clothing to keep their half naked bodies warm, and not one was molested. The lives of only two white men stood between an abundance and their hungry stomachs, and I often found myself wondering what spot on earth where white men were standing on the verge of starvation would witness this condition long. Every deer would be killed and every particle of food distributed, and their act would be justified by public opinion.

## RECOMMENDATIONS.

It seems to me that the repeal of the law prohibiting the sale of repeating arms and fixed ammunition in Alaska would not only be a humane act but one that is urgently demanded. The scarcity of the whale and walrus, and the danger that has to be encountered in pursuit of the seal by the natives, would be much lessened if they could be allowed to purchase them at a fair price.

Few of the natives are supplied with anything but muzzle-loading rifles, and many of them hunt the seal and walrus with ivory-pointed spears and harpoons.

The opinion that the law should be repealed is shared by every white man who has lived among them, and the force of the argument ought to be much stronger on this account. The object sought to be accomplished in enacting the law was undoubtedly to put the natives in a position that, in case of a revolt, they would be practically at the mercy of the white men with the repeating rifle. There is practically no dan-

DESCENDING A MOUNTAIN IN ALASKA WITH A DOG TEAM.
(From native drawing.)

ger of such a condition of affairs ever arising, and a white man among them, if every one was in possession of one of the latest improved fire-arms, would be just as safe as he is to-day.

Occasionally a native is found who has a repeating rifle, purchased on some whaling vessel or from someone on the Siberian side, where there appears to be no opposition to the traffic. The law is practically a dead letter all through Alaska, and it is so often broken that nothing is thought of it; yet it affords to those who deal in rifles an excuse for charging an exorbitant price for them.

It has occurred to me many times, when watching the herders chase quite a distance to bring back to the herd a few deer that had wandered off, that shepherd dogs would be valuable among them. I can see no reason why they would not be equally serviceable among reindeer as with sheep. A deer is naturally afraid of a dog. So is a sheep. But the latter will graze within a few feet of one if he is making no demonstration of attacking him, and feel perfectly secure. I have noticed the same thing with reindeer, and have often driven alongside of a team of dogs and they were perfectly quiet. It might be found necessary to breed the shepherd dogs to those of this country in order to make them useful in cold weather, but this could doubtless be done and preserve the instinct of herding in the breed.

A visit to an Eskimo hut in winter would convince one that they should have something in the way of a stove or fireplace, different from their oil lamp. It answers very well for warming their houses, but it is not sufficient for drying the moisture that accumulates.

The Eskimo leave their huts just as soon as the first thaw comes in the spring, and live in tents from that time until snow comes in the fall. Most of the huts have an apartment cut off from the little passageway that furnishes the means of entrance to their living-room, which is used for cooking. It is a miserable excuse for that purpose, filling with smoke with the least fire, and to breathe at all one must almost lie flat on the ground.

There is stone near enough to every settlement with which to build fireplaces, and with the abundance of fuel at hand, they could make their huts comfortable in this way. One or more could be built at the station if some sheet iron, together with iron for log rests, were sent here.

As it is the purpose of the Government to relieve these people from their sufferings, a reform should be instituted in the matter of their houses. Lumber could be kept on hand and furnished at cost, with which to build floors and ceiling or roofs for their houses. They could construct them with logs, as now, but it is impossible to make them water-tight without lumber for the roofs. They could pay for it in work or furs, and I have no doubt, if the opportunity were afforded them to procure it in this way, they would all take advantage of it.

A large and comfortable house should be constructed at the expense of the Government, built partly underground, for the accommodation

of visiting natives. During the past winter many natives came here from a distance, mainly for the purpose of seeing the deer, and they were quartered upon the natives of our village, thus becoming a burden by crowding into their houses and eating up their food. If a house for this purpose could be built, there would be no excuse for strangers to crowd in on these people. It would serve as a place for them to spend their time while here, and give them no excuse for intruding upon the employés of the station. During last winter the men and women working for us, on account of our limited room, had to work in an apartment that was frequently crowded with outsiders, and it very much interfered with their work.

One of the most important articles for the use of the station would be a portable bellows, anvil, and blacksmith tools. The frost in the ground dulls tools quickly, and shovels, spades, crowbars, and picks often need sharpening. Sled runners of iron or steel could be made and a thousand uses of this character could be found, besides their being a valuable instructor for the natives.

There should be a good supply of skins, both reindeer and seal, kept constantly on hand. Repairs are continually needed and for a dozen persons a large number are necessary to last through the winter, which may be said to continue for nine months in the year.

Our experience of the past year has demonstrated the importance of this matter. As all reindeer skins come from the Siberian side, and none can be procured except from the Cape Prince of Wales natives, after the summer has closed, the natives at that place have a monopoly of the business. They know very well that the demand for an article always regulates its price and take advantage of it.

Last fall, when traveling was really dangerous, I was obliged to make a trip by canoe to the cape to purchase skins, and had my boat completely smashed to pieces on the trip.

Sheds and a corral should also be built for the accommodation of sick or injured deer, and as a shelter for fawns born during severe weather. Next winter it is the intention to have the herd range a few miles from the station and the herders live in tents near the deer, coming to the station only when necessary to obtain supplies. As spring approaches they will be moved gradually toward the station, and about the time the young are born they will be near enough to be cared for, if necessary.

If the transportation of deer from the other side should assume such magnitude as to make time valuable, a landing could be made 50 miles west of the station and from there they could be driven in. There is an excellent beach at that point, and in calm weather they could be landed there as easily as at the station. But this is a matter that must be left to the officer in charge of the ship that does the transporting, who, of course, will better understand what to do in the matter.

I have referred to the brand adopted for the use of the station in another place in my report. Steps should be taken soon to give notice

by publication of the adoption of such brand and thereby acquire all the protection usual in such matters.

I respectfully suggest the immediate discontinuance of the practice of teaching school by the officers of the station. While with us the past year the extent of school to be taught was understood to depend upon the time that could be spared from other duties, yet we felt anxious to accomplish as much as possible the first year, and teaching became a diversion that we really and truly enjoyed. But there is a wide difference between the duties devolving upon an officer of the station and those of a school-teacher. In one, the teacher is supposed to practice more or less indulgence and patience, and an Eskimo can not understand why the teacher can not be governed by the same principles and the same attitude toward him in requiring him to do his work. We found it hard to harmonize both duties, and I think the best interests of the Government can be subserved by discontinuing the practice altogether.

Herders should not, in my judgment, be expected to attend school. For that matter, I think nothing should be imposed upon them but to do odd jobs about the station, such, for instance, as cutting and hauling wood, etc. All of our herders, with one exception, were grown men, and their attendance at school the past winter became almost compulsory. They seem to look upon it as a matter in which their pride suffers, being obliged to study and associate with the children and become subjects of ridicule to a certain extent with the other natives.

While the mere matter of herding carries with it no very great labor or physical exertion, yet it is something that severely tries their patience and becomes exceedingly monotonous. During pleasant weather it is not so bad, but in long spells of cold and stormy weather it must be very trying, and for this reason they should be allowed to return to the station when relieved from duty, and enjoy a little recreation that will take their minds into different channels.

From the experience of the past year I would respectfully and strongly urge that a physician be employed at the station. We were constantly called upon to prescribe for natives, and in two or three instances they came from considerable distances. All through the winter our herders were ailing more or less, and occasionally one or two had to lie off for a time to be doctored. One of our most valuable men had to cease work entirely, and had a physician been present I have no doubt he would have been restored to health in a short time. In the early part of last summer I was exposed to wet weather a great deal, and contracted a cold which later on caused other complications which for several weeks made me seriously ill. Indeed, I fear, on account of not having proper medicines and the services of a physician, my constitution, always very robust, may have become permanently impaired.

It seems to me that in a matter involving so much responsibility, and in which so much depends upon the health of those in charge, one of

the first things to be provided for ought to be the employment of a competent physician.

During last winter three cases came to our notice of natives being afflicted by venereal disease. One of them appeared to be a serious one, and his reputation for licentiousness was such that we expected sooner or later to hear of other cases of a like character. If they were developed, however, they did not come to our notice. We administered such remedies as we had, and the favorable result was more from accidentally stumbling on the proper remedies than from any knowledge of what should have been done. It may be possible that it only served to check the disease, but if this is so it will doubtless be demonstrated before it is too late to procure help from the physician attached to the *Bear*.

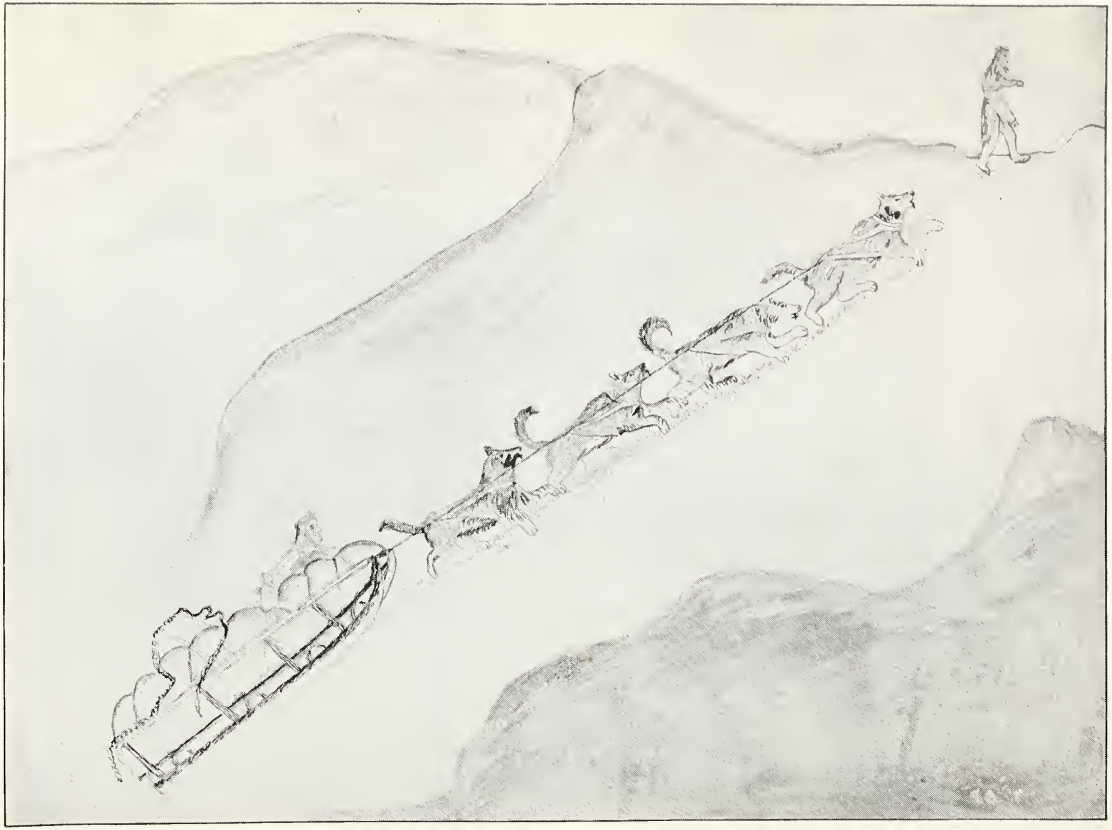
The continuance of two men at the station is essential. The duties are so diversified, and the natives are so ignorant in regard to the use of tools and in the execution of all kinds of work, that the supervision of one man is necessary all the time.

The watchful care bestowed upon the herd the past year, during which time one or the other of us made frequent visits to the deer when some distance from the station, impressed the natives with the idea that they were of considerable consequence and should be carefully guarded.

All sorts of perplexities have arisen during the past year, many of which will appear in different parts of this report, also the record kept in the log book, the latter of which I commend to your special attention. Hence, I do not feel that it is necessary to refer to them in detail here. The work in many instances was of a character that required careful thought in arranging the preliminaries, as well as in their execution. The enterprise was a new one, instituted among a strange people, and a mistake in some matters might seriously interfere with the harmonious discipline in the future.

In the light of the experience had with herders during the past year, I am of opinion that importing men from a distance is poor policy. Of the eight men we had, two came from 60 miles west of here, and, although it was a short distance, they were constantly talking of going home, and nothing but vigorous persuasion kept one of them from leaving. Natives are prone to homesickness, and anyone who has experienced that feeling knows that it means an unrest of body and mind that nothing can satisfy.

During the last days of April a young man arrived from the missionary station on the Yukon River known as St. James Mission. He brought a letter from that worthy missionary, Mr. Prevost, dated August 12, 1892. Where he had been during all these months I do not know. He was not over 18 years of age, and, although able to speak a few words of English, we could understand but little he said, and he could not speak a word of the language used by the natives. He had been in some way connected with the school of the mission, and evi-



CLIMBING A MOUNTAIN IN ALASKA WITH A DOG TEAM.

(From native drawing.)

dently could not adapt himself to the manner of living our herders practiced. He expected to be fed on bread and other articles we were not able to give our men, and in a few days he concluded he would not remain here, and started for home.

I will further state that, from our experience, no native should be employed at the station who speaks a word of English. If they understand what is said by the white men when speaking to each other they carry gossip to the natives and thus cause dissatisfaction. A fair illustration of this will be seen by reference to that part of my report which speaks of a herder being discharged on account of trouble made by his half-breed wife.

There are three natives among as many tribes in this vicinity who have been among the whites just enough to speak a few words of English, and in each instance they are characters who are of very little account to themselves and a disturbing element in their own community.

The white men at the station should learn to speak the native language, something they can acquire in a few months, and then they are able to take every advantage that is to be acquired in being able to understand what they want, and, when thus equipped, they can wield a greater influence among them.

It is very early yet to determine what is going to be the best method of disposing of the reindeer, and how to get the natives to adopt the practice of domesticating them. My mind is clearly made up on one point, however, namely, that the Government should retain absolute control of the reindeer for a number of years. Just how long this should be would depend upon how fast they increased and how soon the natives learned to take care of them.

The practice inaugurated of paying the herders 10 deer each for two years' service seems to be a very good one, if, at the end of that time, they will let the deer remain in the herd. If they are allowed to take them away or dispose of them as they see fit, in a short time they would be killed for food, or sold to some man who, in a few years, would own all the deer. This would be no serious objection if the deer were as numerous as on the Siberian side, for skins then would be sold at a nominal price; but, until they do exist in large numbers, care should be taken to prevent them from getting into the hands of a few men.

It might be well to adopt the practice of giving to each herder 10 deer for two years' service, with the understanding that they shall remain in the herd for five years or longer. At the expiration of this time he will be permitted to take them out, with, say, five or ten or fifteen more. He will then have the nucleus for a good herd, which, if taken care of, will in a few years increase to a large number.

To further illustrate: If, for instance, 4 men are employed, belonging to the village near the station, for two years, and each second year 4 new ones are added, at the end of the sixth year 12 men will own 120

deer. This of itself is a pretty good-sized herd and of sufficient numbers to encourage them in preserving it; and if to this number are added, for instance, only the increase for the five years they have remained in the herd, they will have sufficient, with good care, to supply themselves with food and clothing, while at the same time the number will increase.

From the reasons given elsewhere in my report Port Clarence should become the chief station and be made permanent. If this is done I believe that, as soon as two or three hundred deer can be spared for the herd, a new station should be started 50 or 100 miles away, and this should be continued until they are thoroughly distributed throughout the territory that is adapted to their propagation. If this is done, the herders who have served their two years' apprenticeship would be qualified to go with the herd to the new station, and by this means the employment of Siberians could be dispensed with.

A few deer should not, in my opinion, be distributed to natives, or even to white men, unless it is pretty well known that they will be cared for. If a few are sent here and there, and through some cause, however unavoidable, the deer should not live, it would be a hard matter to get the natives to believe that they can be made to live and increase, and this prejudice will be difficult to eradicate. The fact that we have brought our deer through the winter successfully has done more to establish confidence among the natives and to enlist their sympathy in the enterprise than anything else that could have occurred. This is especially so because they generally predicted that they were not adapted to this country and would all die.

It might be a good idea each winter to have a number of deer killed and the food and skins distributed among the natives. This would be an ocular demonstration of what they would have if the enterprise blossomed into an industry; and perhaps the old adage that the best way to reach one's heart is through his stomach would be verified among the natives.

In conclusion, I beg to offer my congratulations on the result of the first year's experiment in this enterprise. It is all the more gratifying to me because I know and fully appreciate the difficulties under which its establishment was accomplished. Those friends who have sustained you in your ceaseless efforts in behalf of these suffering people have cause now to share in the gratification that must be yours.

I trust that future years will see the boundless area of Arctic Alaska overflowing with these beautiful animals, and that they will always exist as living monuments of your efforts in a most righteous cause.

## METEOROLOGY AT TELLER REINDEER STATION.

### 1892.

| Date. | Temperature. | | Wind. | | Remarks. |
|---|---|---|---|---|---|
| | A. M. | P. M. | Course. | Force. | |
| | ° | ° | | | |
| Sept. 1 | ..... | ..... | S | Strong | Light rains and some sunshine. |
| 2 | ..... | ..... | S | do | Heavy rain. |
| 3 | ..... | ..... | S | Fair and strong | Sunny most of day. |
| 4 | ..... | ..... | S | Fair | Do. |
| 5 | ..... | ..... | N | Light | Sunny most of day; frost. |
| 6 | ..... | ..... | S | do | Pleasant. |
| 7 | ..... | ..... | N | Fair | Do. |
| 8 | ..... | ..... | S | Light | Chilly and pleasant. |
| 9 | ..... | ..... | S | Strong | Rainy. |
| 10 | ..... | ..... | S | Fair | Rain in afternoon. |
| 11 | 90 | ..... | S | Light | Pleasant. |
| 12 | ..... | ..... | | | |
| 13 | ..... | ..... | S | Light | Clear and pleasant. |
| 14 | 38 | ..... | NE | do | Light snow. |
| 15 | 42 | 34 | NE | do | Misty. |
| 16 | ..... | 35 | N | | Pleasant. |
| 17 | 34 | 32 | NW | Light | Snowy; froze at night. |
| 18 | 32 | 34 | NW | Fair | Light snow and sleet in morning. |
| 19 | 35 | 36 | NW | do | Light snow in forenoon. |
| 20 | 40 | ..... | SE | do | Rain most of day and night. |
| 21 | 42 | ..... | N | Strong | Sunshine most of day. |
| 22 | 36 | 32 | N | Light | Afternoon, snow. |
| 23 | 35 | ..... | None | None | Sunny most of day. |
| 24 | 36 | ..... | | | Clear and pleasant. |
| 25 | ..... | ..... | | | Pleasant forenoon; light snow. |
| 26 | ..... | 32 | | | Cloudy most of day; light snow. |
| 27 | 31 | ..... | N | Strong | Cloudy. |
| 28 | 30 | ..... | N | | |
| 29 | 28 | ..... | N | Strong | Sunny and cold. |
| 30 | 28 | ..... | | | Sunny and light snow. |
| Oct. 1 | 26 | ..... | N | | Sunshine. |
| 2 | 26 | ..... | NW | | Sunshine; snow in night. |
| 3 | 26 | ..... | N | | Sunshine. |
| 4 | 28 | ..... | NE | | Do. |
| 5 | 24 | ..... | | | Light snow in afternoon. |
| 6 | 24 | 20 | N | | Sunshine. |
| 7 | 30 | ..... | S | | Rain in forenoon; no sun. |
| 8 | 28 | 32 | S | | Rain and hail in afternoon; snow during night. |
| 9 | 28 | ..... | N | | Snow in afternoon. |
| 10 | 20 | ..... | N | | Snow, cold, and raw. |
| 11 | 20 | ..... | NE | | Snowing at 11 a. m. |
| 12 | 32 | 32 | E | | Light rain in afternoon. |
| 13 | 32 | 36 | E | | Blowing a gale; heavy sea. |
| 14 | 32 | 35 | NE | None | Snow until 10 a. m.; afternoon sunshine and pleasant. |
| 15 | 32 | 20 | W | | Snow all day; pleasant evening. |
| 16 | 30 | 28 | W | None | Snowing most of day. |
| 17 | 26 | 22 | W | | Clear, wind light. |
| 18 | ..... | 22 | NNE | | Clear. |
| 19 | 35 | 30 | E | | Light rain in night; blowing a gale. |
| 20 | 30 | 32 | E | | Blowing hard last night and to-day. |
| 21 | 34 | 28 | E | | Wind decreasing. |
| 22 | 20 | 32 | E | | Blowing hard. |
| 23 | 30 | 28 | E | | Light wind and pleasant day. |
| 24 | 24 | 26 | N | | Cold and sunny. |
| 25 | 26 | 24 | NE | | Do. |
| 26 | 16 | 22 | NNE | | Do. |
| 27 | 20 | 25 | N | | Cold, and snow in afternoon. |
| 28 | 27 | 26 | N | | Pleasant day and light wind. |
| 29 | 23 | 19 | N | | Cold, and light wind. |
| 30 | 14 | 15 | NE | | Cold and pleasant. |
| 31 | 15 | 20 | NE | | Pleasant. |
| Nov. 1 | 16 | 15 | NE | | Cold and pleasant. |
| 2 | 16 | 16 | NNE., NE | | Cold; snow in evening. |
| 3 | 10 | 13 | ENE | | Cold and pleasant. |
| 4 | 5 | 2 | NE | | Do. |
| 5 | 12 | 14 | NE., E | | Cold and light snow. |
| 6 | 11 | 6 | E., N | | Moon rose 3:45 p. m.; cold, raw wind. |
| 7 | 4 | 8 | ENE | | Cold, raw wind. |
| 8 | 23 | ..... | N | | Strong in forenoon; at 5 p. m., blizzard. |
| 9 | 10 | 4 | N | None | Blizzard day and night. |
| 10 | 10 | 2 | N | | Pleasant day; blow in evening. |
| 11 | 3 | 3 | NE | Changeable | Pleasant and cold. |

METEOROLOGY AT TELLER REINDEER STATION—Continued.

1892—Continued.

| Date. | Temperature. | | Wind. | | Remarks. |
|---|---|---|---|---|---|
| | A. M. | P. M. | Course. | Force. | |
| | ° | ° | | | |
| Nov. 12 | —2 | 4 | SEE | | Pleasant and cold. |
| 13 | 12 | 18 | NE | | Light snow. |
| 14 | 18 | 20 | SE., NE | | Do. |
| 15 | 10 | 14 | NNE | | Heavy wind in forenoon; pleasant in afternoon. |
| 16 | 12 | 10 | N | | Light wind; cloudy. |
| 17 | 8 | 6 | N | | Blowing hard in forenoon; light wind in afternoon. |
| 18 | —2 | 2 | ENE., NNE | | Light wind; pleasant. |
| 19 | 3 | —3 | N | | Do. |
| 20 | —4 | —13 | N. to S | | Pleasant; dog sun. |
| 21 | —12 | —15 | NE. and E | | Cold and hazy. |
| 22 | ------ | 8 | ENE., NE | | Overcast. |
| 23 | 17 | 18 | NE., NNE | | Sleet in forenoon; overcast; wind strong in afternoon. |
| 24 | 26 | 24 | NE | None | Snow in night; pleasant day. |
| 25 | 18 | 22 | ENE., E | | No sun; wind and hail in afternoon. |
| 26 | 30 | 22 | SW., N | | Snow in night; blowing in afternoon; sun out. |
| 27 | 6 | 10 | N | | Strong wind; snow in night. |
| 28 | 10 | 14 | E., ENE | | Cold and windy; overcast. |
| 29 | 22 | 20 | NE | | Light wind. |
| 30 | 26 | 29 | SSW., SW | | Overcast; pleasant forenoon; light snow in afternoon. |
| Dec. 1 | 30 | 14 | SSE., SE., NE. | Strong last night; mild in forenoon; strong afternoon. | Overcast. |
| 2 | —6 | —4 | N | Changing; varying | Overcast; snow. |
| 3 | ------ | 8 | N | Blizzard night and day | Overcast. |
| 4 | 0 | 2 | N | Blizzard until 1 p. m | Pleasant, afternoon and evening. |
| 5 | 2 | 2 | N | Blowing strong, forenoon. | Overcast; cold. |
| 6 | 14 | 18 | E., N | Light | Overcast; light snow, evening. |
| 7 | 20 | 22 | N | Strong; light | Do. |
| 8 | 26 | 22 | S | Fair; light | Overcast; sun out a little while. |
| 9 | 16 | 14 | S | Light | Snow last night; overcast. |
| 10 | 8 | 6 | SE | do | Sunny. |
| 11 | 5 | 12 | NE | do | Overcast; light snow. |
| 12 | 0 | 6 | N | Changing; strong in afternoon. | Pleasant in forenoon; snow in night and afternoon. |
| 13 | 12 | 12 | N | Blizzard, night and forenoon. | Snow; overcast. |
| 14 | 16 | 6 | N | Light wind in forenoon, increasing in afternoon. | Snowing. |
| 15 | 4 | 0 | NNE., N | Light, forenoon; blizzard, afternoon. | Overcast. |
| 16 | —6 | —8 | N | Blizzard, night and day | Do. |
| 17 | —6 | —8 | N | Blizzard in night; forenoon fair; wind increasing in afternoon. | Snow flying. |
| 18 | —4 | —2 | N | Light, forenoon; blizzard. | Overcast. |
| 19 | 35 | 31 | SE | Strong | Rain. |
| 20 | ------ | 40 | SE., E | Fair | Snow melting; warm. |
| 21 | 20 | ------ | S | Light | Drizzle, rain. |
| 22 | 18 | ------ | NE | Very light | |
| 23 | 20 | ------ | NE | do | Sunny. |
| 24 | 10 | ------ | NE | do | |
| 25 | 4 | ------ | NE | do | Sun set at 2:10 p. m. |
| 26 | 5 | 9 | NE | Light | Fine day; sunny. |
| 27 | 2 | 9 | NE | do | Fine day. |
| 28 | 8 | 2 | SE., NE | do | Do. |
| 29 | —4 | —2 | NE | Strong, forenoon; light, afternoon. | Very fine day. |
| 30 | —9 | —9 | N | Light | Do. |
| 31 | —4 | —3 | NNE | do | Do. |

ESKIMO TRAVELING IN ALASKA.
(Native drawing.)

METEOROLOGY AT TELLER REINDEER STATION—Continued.

1893.

| Date. | | Temperature. | | Wind. | | Remarks. |
|---|---|---|---|---|---|---|
| | | A. M. | P. M. | Course. | Force. | |
| | | ° | ° | | | |
| Jan. | 1 | —6 | —9 | NNE | Strong; light | Overcast and misty; cold. |
| | 2 | —8 | —10 | NNW., N | Fair | Cold and misty. |
| | 3 | —20 | —22 | NNE., NE | do | Cold. |
| | 4 | —20 | —19 | NE | Strong | Overcast; cold. |
| | 5 | —16 | —10 | NE | Fair | Do. |
| | 6 | —4 | ..... | E | Strong | Overcast; little sun. |
| | 7 | —4 | —6 | Changing | do | Do. |
| | *8 | 2 | ..... | N | Very strong | Very cold; sunny. |
| | 9 | —2 | 2 | Changing | do | Very cold; overcast. |
| | 10 | 2 | —4 | N | Gale | Do. |
| | 11 | —4 | —4 | N | Blizzard | Do. |
| | 12 | —2 | —0 | E., N | Fair | Cold; overcast. |
| | 13 | —2 | —0 | S | Strong in forenoon; fair in afternoon. | Cold; misty. |
| | 14 | —6 | —4 | N | Fair | Fine day. |
| | 15 | —8 | —9 | Changing | do | Cold. |
| | 16 | —2 | —11 | N | do | Do. |
| | 17 | —29 | ..... | N | Strong | Very cold; sunny. |
| | 18 | —13 | —10 | N | Mild | Fine day; sunny. |
| | 19 | —10 | —18 | N., changing | do | Do. |
| | 20 | —19 | —10 | NE., E | do | Do. |
| | 21 | —10 | —6 | NE | Fair | Fine day. |
| | 22 | —9 | 11 | NE | Mild | Do. |
| | 23 | 24 | ..... | E | do | Light snow. |
| | 24 | ..... | 30 | E | Fair; gale | Light snow in night; overcast. |
| | 25 | 30 | 29 | E | Fair | Fine day. |
| | 26 | 20 | 12 | E | do | Do. |
| | 27 | 10 | 8 | E | do | Do. |
| | 28 | 0 | 5 | E | do | Cold. |
| | 29 | 28 | 25 | E., N | do | Do. |
| | 30 | ..... | 25 | E | Strong; fair in afternoon. | Overcast. |
| | 31 | ..... | 21 | E | Very strong | Snow in night and forenoon. |
| Feb. | 1 | ..... | 24 | SSW | Mild | Overcast; thawing. |
| | 2 | 22 | ..... | NE | Very strong | Overcast; snow blowing. |
| | 3 | ..... | 30 | SSW | Light | Snow falling; overcast. |
| | 4 | 26 | 11 | N., SSW | do | Overcast and sunny; fine aurora. |
| | 5 | 10 | 2 | N., SE | do | Fine day; sunny. |
| | 6 | 2 | 4 | NE., NW | do | Do. |
| | 7 | ..... | 30 | S., N | Fair | Cloudy and snowing. |
| | 8 | 22 | 20 | Changing | do | Fine in forenoon and afternoon; snow blowing in evening. |
| | 9 | 17 | 22 | N | Fair; blizzard | Sunny and fine in forenoon. |
| | 10 | 10 | 16 | N | Light | Very fine. |
| | 11 | 22 | 20 | N | Strong and gale | Snow blowing. |
| | 12 | 17 | ..... | N | Very strong; blizzard | Overcast. |
| | 13 | —4 | —4 | N | Blizzard | Do. |
| | 14 | —2 | —2 | N | Blizzard still raging | Do. |
| | 15 | 2 | 0 | N | Quieting down | Clear evening. |
| | 16 | ..... | —4 | N | Gale | Snow flying. |
| | 17 | ..... | —3 | NNE | do | Do. |
| | 18 | ..... | —6 | Changing | Light fair | Overcast; light snow. |
| | 19 | ..... | 11 | SE | Fair | Light snow. |
| | 20 | ..... | —3 | N | Strong | Snow flying. |
| | 21 | ..... | —13 | N | Fair | Snow flying; sunny. |
| | 22 | ..... | —22 | SE.; changing | Gale | Snow flying. |
| | 23 | ..... | —21 | N | Blizzard | Overcast. |
| | 24 | ..... | —10 | N., SE | Blizzard in forenoon; light in afternoon. | Snow falling; overcast. |
| | 25 | ..... | —8 | N | Strong blizzard | Overcast. |
| | 26 | ..... | —6 | N | Light | Sunny. |
| | 27 | ..... | —10 | Changing | Very light | Fine day. |
| | 28 | ..... | —9 | N | Blizzard | Overcast. |

1 this date the thermometer received a fall and the spirits separated. Heated it and got spirits together again. Put a mercury thermometer out that also had had a fall. They register differently, and so we conclude both to be out of order. Although we take the thermometer readings, do not believe them to be correct. The weather seems colder than thermometers register.

METEOROLOGY AT TELLER REINDEER STATION—Continued.

1893—Continued.

| Date. | Temperature. | | Wind. | | Remarks. |
|---|---|---|---|---|---|
| | A. M. | P. M. | Course. | Force. | |
| | ° | | | | |
| Mar. 1 | —4 | Pleasant | W., E | Very light | Fine day. |
| 2 | —9 | Very cold | E., ENE | Light | Do. |
| 3 | —20 | Cold | N | Strong in forenoon; blizzard, afternoon. | Snow flying. |
| 4 | —12 | do | N | Gale | Overcast. |
| 5 | —11 | Mild | N., NNE | Light | Sunny; light fall of snow in afternoon. |
| 6 | —11 | do | NE | do | Fine day. |
| 7 | 20 | Cold | ENE., E | Gale | Snow flying most of day. |
| 8 | 16 | Mild | SE | Light | Snowing. |
| 9 | 16 | do | NE., SE | do | Snowing in afternoon. |
| 10 | 0 | Cold | NE | do | Fine and pleasant. |
| 11 | —4 | Very cold | NE., E | Strong | Fine most of day; some snow. |
| 12 | 14 | Cold | E | Very strong | Overcast; snow flying. |
| 13 | 20 | Mild | E., W | Strong | Snow flying part of the day. |
| 14 | 28 | do | S | Fair | Overcast. |
| 15 | 26 | Warm | NW | Very light | Very pleasant. |
| 16 | 24 | Mild | S | Strong in forenoon; light in afternoon. | Pleasant. |
| 17 | 2 | Cold | N | Gale | Snow flying. |
| 18 | —6 | do | N | Very strong in forenoon; light in afternoon. | Sunny; pleasant afternoon. |
| 19 | —2 | do | NE | Very light | Do. |
| 20 | —3 | | | Still | Do. |
| 21 | —4 | | NE | Very light | Pleasant. |
| 22 | —2 | | SE | do | Do. |
| 23 | 0 | | SE | do | Do. |
| 24 | 10 | | NE., SE | Light | Overcast. |
| 25 | 16 | | NE., S., NE | do | Do. |
| 26 | 18 | | NE | do | Light snow; overcast forenoon; sunny afternoon. |
| 27 | 20 | | E | Strong | Snow. |
| 28 | 10 | | N | Light forenoon; strong afternoon. | Thaw forenoon; cold afternoon. |
| 29 | —2 | | N | Strong | Cold. |
| 30 | —4 | | NW | Strong; light in afternoon. | Do. |
| 31 | 10 | | S | Light all day | Light snow forenoon. |
| Apr. 1 | 6 | | N | Strong | |
| 2 | 8 | | N | Light | Cold. |
| 3 | 10 | | E | do | Clear; snow afternoon. |
| 4 | 20 | | S | do | Overcast; warm. |
| 5 | 28 | | S | do | Mild; light snow all day. |
| 6 | 28 | | S | do | Thawing; overcast. |
| 7 | 10 | Cold | N | do | Overcast. |
| 8 | 33 | | E | Light | Overcast; light fall of snow. |
| 9 | 32 | Mild | N | do | Overcast; light snow evening. |
| 10 | 28 | | SW | Fair | Overcast; pleasant. |
| 11 | | Cold | ESE | Light | Pleasant. |
| 12 | | do | N | Fair | Pleasant; light snow afternoon. |
| 13 | | do | N | Blizzard | Snowing. |
| 14 | | do | N., W., N | Fair | Very pleasant. |
| 15 | | do | N | Strong | Do. |
| 16 | | do | N | do | Do. |
| 17 | | Very cold | N | Very strong | Pleasant forenoon; snow flying afternoon. |
| 18 | | Cold | SE | Mild | Very pleasant. |
| 19 | | Warm | E., W., E | do | Little snow in afternoon; thaw. |
| 20 | | Mild | SW | Very mild | Overcast; fog on mountains. |
| 21 | | Warm | N | do | Very pleasant. |
| 22 | | Cold | S., N | Mild in forenoon; strong in afternoon. | Pleasant forenoon; snow blowing afternoon. |
| 23 | Cold | Mild | N | Very strong | Snow flying. |
| 24 | Warm | | S. E | Very mild | Pleasant; light rain afternoon. |
| 25 | do | | S | Mild | Light rain afternoon. |
| 26 | do | Cold | S., N | Mild; fair | Pleasant and thaw; cold in afternoon. |
| 27 | Cold | | N | Strong | Overcast; snow flying afternoon. |
| 28 | 25 | | N | Very strong | Clear and pleasant. |
| 29 | 27 | | N | Strong | Do. |
| 30 | 26 | | N | do | Do. |

METEOROLOGY AT TELLER REINDEER STATION—Continued.

1893—Continued.

| Date. | Temperature. | | | Wind. | | Remarks. |
|---|---|---|---|---|---|---|
| | A. M. | M. | P. M. | Course. | Force. | |
| | ° | ° | ° | | | |
| May 1 | 26 | 30 | ..... | N., SE., N..... | Strong in forenoon; mild in afternoon. | Clear and pleasant. |
| 2 | 28 | 40 | 25 | S., NE..... | Mild..... | Do. |
| 3 | 18 | 25 | ..... | S., N..... | Mild; fair..... | Pleasant; thawing. |
| 4 | 17 | 25 | ..... | E., N ..... | Mild..... | Very pleasant; sky perfectly clear. |
| 5 | 18 | 22 | ..... | None ..... | Very light stir.... | Exceedingly fine. |
| 6 | 17 | 19 | ..... | S., N..... | Very light..... | Light snow falling in afternoon; sky clear. |
| 7 | 15 | 25 | ..... | S., SW., S..... | ....do ..... | Light snow in afternoon; sky cloudy and dark. |
| 8 | 20 | 40 | 26 | S., N..... | Strong..... | Cloudy all day and sun obscured. |
| 9 | 15 | 20 | ..... | N., S..... | Fair ..... | Sunny and warm; thaw most of day. |
| 10 | 12 | 26 | ..... | N., S..... | Fair; strong..... | Cloudy; sun in forenoon; snow blowing afternoon. |
| 11 | 30 | 14 | ..... | S., N..... | Strong..... | Snow flying most of day. |
| 12 | 11 | 22 | ..... | N., S..... | Fair ..... | Sunny and thaw; snow falling in afternoon. |
| 13 | 20 | 45 | 17 | S., N..... | Very light..... | Very pleasant. |
| 14 | 17 | 40 | 21 | NE.. E..... | Strong..... | Cold and sunny. |
| 15 | 24 | 42 | 33 | E..... | Very light..... | Cloudy; few drops of rain. |
| 16 | 40 | 42 | 36 | E..... | ....do ..... | Cloudy; rain most of day till 2 p. m. |
| 17 | 33 | 36 | ..... | E..... | ....do ..... | Cloudy; snow in evening; light rain at times. |
| 18 | 35 | 47 | 30 | SW., NE ..... | Mild..... | Light snow most of day and night. |
| 19 | 29 | 34 | 29 | NE..... | Fair ..... | Froze last night; cloudy and cold wind. |
| 20 | 30 | 44 | 28 | N..... | ....do ..... | Cold and clear; froze last night; thaw to-day. |
| 21 | 30 | 45 | 31 | NE..... | Very light..... | Pleasant and thaw. |
| 22 | 31 | 50 | 34 | E., NW..... | ....do ..... | Pleasant; rain in forenoon. |
| 23 | 32 | 60 | 45 | E..... | Light in forenoon; strong in afternoon. | Pleasant; rain in evening. |
| 24 | 41 | 45 | 42 | SE..... | Light. | Pleasant and cloudy. |
| 25 | 40 | 58 | 42 | E., NW..... | Very light ..... | Pleasant; clear most of day. |
| 26 | 42 | 68 | 49 | NW ..... | ....do ..... | Pleasant. |
| 27 | 32 | 74 | 63 | W ..... | ... do ..... | Froze last night; warmest day we have had. |
| 28 | 43 | 54 | 49 | N..... | Strong..... | Pleasant; sunny. |
| 29 | 34 | 60 | 47 | N..... | Fair ..... | Light shower and hail in afternoon |
| 30 | 34 | 59 | 40 | N..... | ....do ..... | Froze last night; pleasant day. |
| 31 | 28 | 57 | 39 | W ..... | Light..... | Do. |

## SOME OF THE HABITS AND CUSTOMS OF THE THE ESKIMO.

The Eskimo in this portion of Arctic Alaska do not live, as many suppose, in snow houses. They live in villages, usually of eight or ten families, in huts built underground. Usually more than one family occupy one hut, and often 10 or 15 persons live for eight months in the year in a single apartment that is barely large enough for 2 persons.

Their huts are built by digging a hole in the ground about 6 feet deep, and logs are stood up side by side all around the hole. On the tops of these are laid logs that rest even with the top of the ground. Stringers are then laid across them and other logs are laid on these, when dirt is covered over, leaving an opening about 2 feet square, over which is stretched a piece of walrus entrail that is so transparent that light comes through, answering the purpose of a window in this respect.

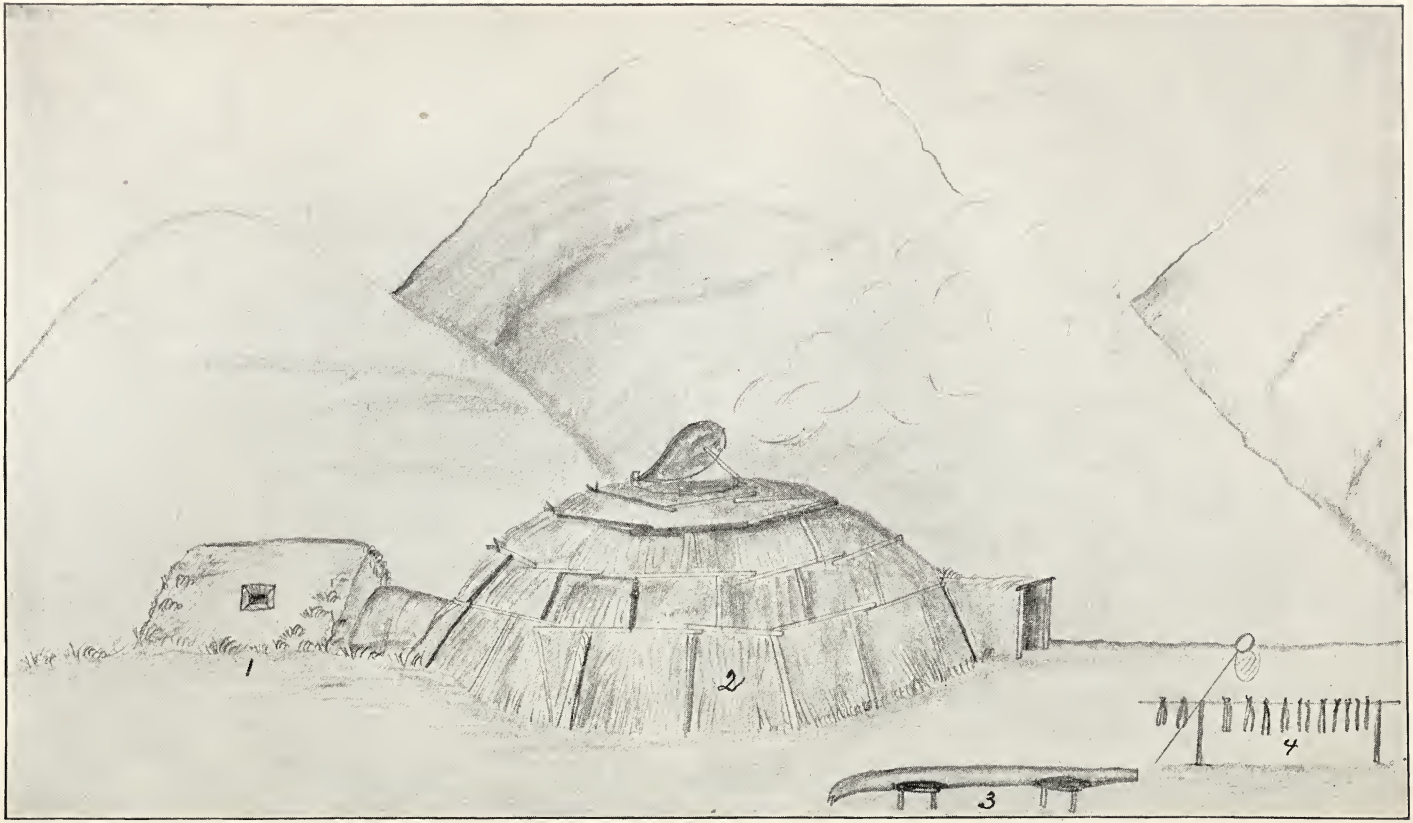
An entrance into the hut is made through an apartment constructed similar to the hut, in the top of which a hole is left large enough to admit of a person getting through, and by means of a sort of step-ladder he reaches the bottom. From this is a passageway, usually about 2 feet square, through which he must crawl on his hands and knees to reach the living room of the hut, perhaps 15 or 20 feet away.

When completed, the evidence seen on the outside of anything that looks like a human habitation is the caché, upon which is lashed a sled and such articles as are not needed during the winter, and the dogs belonging to the natives. The tops of the huts are so nearly on a level with the ground that it is the common practice to walk over them in passing about the village or from one hut to another.

It is often the case that one entrance to the passageway from the outside answers for three or four huts, passages diverging from the main entrance in as many directions.

Usually a small apartment is cut off from one side of the passageway, which is used as a cook room. It is a small affair, with a hole in the top intended for the smoke to escape through, and in this is built a fire of driftwood for cooking purposes. They are miserably inconvenient apartments, and even an Eskimo woman stays in one just long enough to see that the fire is kept going and the food does not burn, or she would be suffocated by the smoke that completely fills it.

Logs are split so as to preserve a smooth surface and laid down for a floor. On one side of the hut is built a sort of platform, about midway from the floor to the ceiling, wide enough for a man to lie cross-




AN ESKIMO BARABARA, KAGUIAH, KADIAK ISLAND.

1. Covered with sod. 2. Thatched with straw, held down with driftwood and whale ribs. 3. Canoe. 4 Drying fish.

wise, and the space above and below answers for an upper and lower bunk for the occupants to sleep in at night.

No tables or chairs are ever used by the Eskimo, and the only article found in the way of furniture is their stove, or, more properly speaking, lamp. They are all of one pattern, usually of wood, but sometimes of stone, and are shaped the same as a circular board would be if cut in halves. The center of the lamp is hollowed out to the depth of perhaps a half inch, thus leaving a ridge all around. Along the inner circle of this ridge is spread a sort of cotton, gathered from a wild shrub in summer. This answers for a lampwick, and when saturated with seal oil will burn a long time before being consumed.

The lamp is placed on two wooden pins driven into the logs on one side of the hut, and above the lamp is driven another wooden pin, on which is placed a piece of seal blubber, just far enough from the flame to cause the oil to drip sufficiently to furnish fuel for the lamp.

The Eskimo may be truly said to burn the midnight oil, for their lamps are never suffered to go out from the time they are lighted in the fall until they abandon their huts for the tent in summer. They are their only stove, and for heating purposes answer an excellent use. They are their only lamp, for, indeed, they need no other. Their huts in dull weather would be almost dark without them.

While the lamp (and sometimes there are three or four) of the hut is a large one, and the occupants can catch enough seal to keep them supplied, and furnish heat enough to keep them warm, yet there is so little covering above and the ceiling is so closely exposed to the cold that the huts are always more or less damp.

As soon as the first thaw occurs in the spring the occupants and everything in the huts are moved into tents outside, the natives all abandoning them, even while the snow is yet deep on the ground and the wind blows cold. When the warm season commences the huts leak badly and no attempt is made to again occupy them until it freezes up in the fall. They are then again taken possession of and the occupants, old and young, go through a season of coughs and colds that is so prevalent that it assumes somewhat the character of an epidemic.

At the end of the passage leading into the hut is a skin which is pushed aside when one enters or goes out. When this is closed over the hole the apartment is practically airtight, and when occupied by a dozen or more persons the air soon becomes so foul that one side of the little skin window has to be pulled up to let it escape. Occasionally a hut is found where the occupants appreciate the value of fresh air and have inserted a wooden spout in the roof through which the impure air is allowed to escape.

As has been observed, the Eskimo have no chairs or stools, and know nothing of the comfort to be derived from their use. The attitude usually assumed by the men when in the hut is to sit with their legs

folded up, tailor fashion, and the women sit down flat on the floor. It is the common practice for both men and women, when in the hut, to remove their artigas or coats, and they are thus naked from the waist up. This is customary for the boys and girls, but when the latter get to be 8 or 10 years of age they are taught that such conduct is immodest, and from that time, or until they become wives, they are never seen without some covering, however light, to conceal their busts.

Up to within a very few years the tent of the Eskimo was made from the entrails of the seal or walrus, but, while they answered the purpose of protecting them from the rain, they were easily torn, and, as the animals became scarcer, harder to get. It took a number of seals to furnish material for even a small tent, and it was only by the utmost care in using them that they would last a single season. With the advent of the whaling vessels came calico and drilling, and at the present time nearly every family possesses a tent made from some kind of cloth goods.

They are made circular in form, and are as near the shape of a globe cut in two as they can make it. Poles are stuck into the ground and bent, their ends being tied together with seal-thong, and when the tent is stretched over them, are just high enough in the center to allow one to move about in a stooping position. The bottom of the tent is brought down to the ground and sand and gravel heaped up so as to exclude the air, and, if the material is firm and heavy, are altogether warm and comfortable quarters to occupy, except in very cold weather.

The Eskimo are, as a rule, industrious. It is seldom that a lazy person is seen among either sex. They early learn that an existence is only to be had by applying themselves to some task, and the older they grow the more they are impressed with the knowledge that they can satisfy the cravings of an empty stomach only by industrious labor.

The preparation of skins requires ceaseless exertion, and when they are ready to be made up sinew thread must be braided and twisted, which of itself is an art. This is one of the first things a young girl is taught, and while she is yet almost an infant is capable of preparing thread from deer or whale sinew with all the dexterity of a grown woman.

Although the Eskimo women have long since learned the advantage of the needle over the ivory awl used by their greatgrandmothers, they find the linen and cotton thread of their white sisters inferior to the sinew thread in working upon skins, and seldom use it. The thimble of civilization has found a place by the side of the needle in the work-bag of the Eskimo woman, and it is a great improvement over that formerly used by her, which was made of a piece of sealskin cut so as to slip over the finger.

In sewing the Eskimo woman wears the thimble on the first or fore finger, the needle being inserted through the skin and drawn towards

her. Most women are expert sewers, and their stitches are often as even and regular as could be made by a machine.

It is probably from the fact that the Eskimo are obliged to put an endless amount of labor into nearly everything they make, that is to be found the secret of their everlasting patience. They will scrape at a skin a long time before hardly an impression is made upon it, and rub and pull at one when it is hard and stiff. Their delicately formed hands seem poorly adapted to such kind of work; but in the end the skin becomes soft and pliable, and is a thing of beauty.

Their hands are, without exception, small and prettily shaped. Even among those women who are tall and slimly built their hands are unusually small and shapely. The same is true of their feet; and this feature, so prominent among the female sex, is also universal among the men. And so well are they aware of this fact that a white man, weighing perhaps 160 pounds, who would in civilization be considered as possessing a good-shaped foot if he could wear a number seven shoe, is an object of ridicule to the Eskimo on account of his big feet.

The complexion of the Eskimo is also of a character that one would scarcely expect to find among people who are brought so much in contact with the elements. Although the color of their skin borders strongly on the olive order, it seems soft and clear.

In eating, the Eskimo all sit around in a circle, and the food is placed on the floor in the center of the group. No meal, whether it be of dried or frozen fish, seal or whale meat, is ready to be eaten until a vessel containing seal oil is at hand. This is placed in a position easily reached by those eating, and, before taking a bite of anything, it is first dipped into the oil, or two or three fingers are thrust into it, and then placed into the mouth and sucked. Such a thing as a spoon is rarely ever used by them, and it is doubtful if many of them would understand its use if they had one.

It is when a household of Eskimo are gathered about the floor partaking of their food that their natural disposition to mirth is given full sway, and every meal, whether in their huts or in the tent on the beach, partakes more of the nature of a family reunion than an everyday occurrence. They are naturally given to jest and laughter, and a continual hubbub reigns until the last morsel is eaten.

This predisposition toward good nature is always present. A surly Eskimo is rarely to be seen, and whether it rains or shines, or the wind blows a blizzard from the north pole, they are the same happy and apparently contented people.

It is the custom among the Eskimo for the women to gather the wood, make the fire, and do the cooking. They are also expected to do the fishing while the men are hunting, and to dress the game when brought in.

The men are also industrious, and when at home are constantly working at something. It is in the winter season that they make their nets,

prepare their harpoons and spears for walrus and seal hunting in the spring, make and repair their sleds, and engage in a thousand and one things that an Eskimo has to do to supply himself and family with the necessaries of life. They expend a great deal of labor in the manufacture of nearly every article they use. If it is something that has joints, the parts are firmly lashed together with seal thong, and when finished the joint is the last place that would give way.

The net and seine made by the Eskimo are articles that display a wonderful amount of mechanical skill, and represent a great many hours of patient labor.

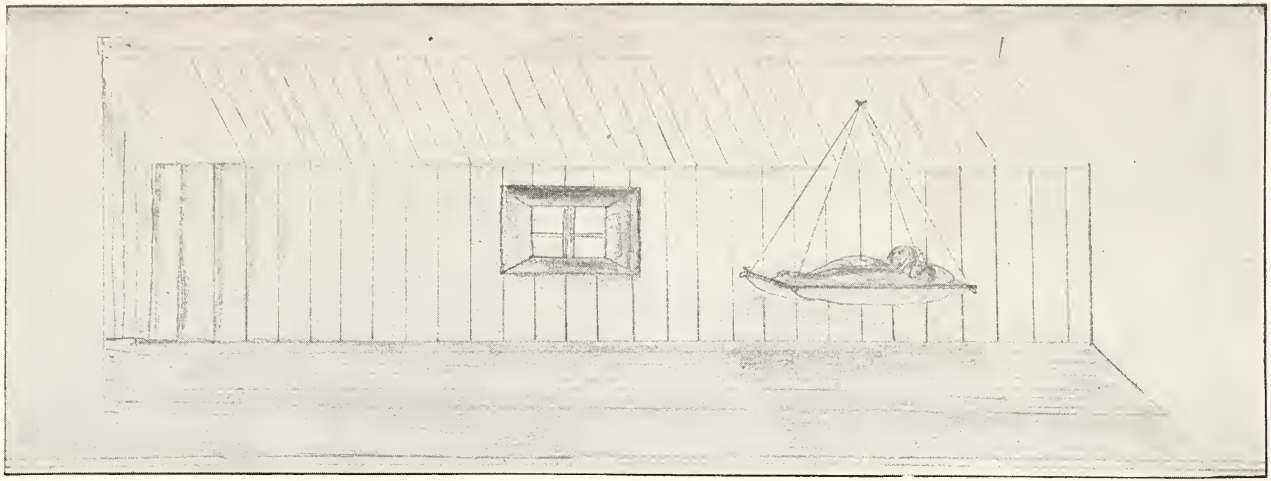
The seine is used for catching salmon, and is made 30 or 40 fathoms long by 1 or 2 wide. Like everything else used by the Eskimo in which string or rope is used, it is made of sealskin, and the fine lines are cut many fathoms long, as uniform in width as if it were the product of the best machinery.

The Eskimo have but one standard measure, and that is the fathom. It means as much as a man can span by holding his arms out at right angles to his body, and this measures about 6 feet. When buying calico or drilling of the whites, or measuring the dimensions of a boat or log, or for any other purpose, it is always so many fathoms, or "e sung nuk," as it is called by them.

The Eskimo woman has very little taste for fancy work, and, with two or three exceptions, confine their work to the making of such articles as are needed for their comfort. They often embellish their artigas with different colored fur, and trim them in a manner that makes them very pretty. Sometimes they make boots that are adorned with trimming, but they usually confine themselves to plain work, and it is always substantial.

If a woman wants to make a present, the only thing that suggests itself to her, and in fact the only thing she ever gives to a sweetheart, is a tobacco pouch, or "tee rum i ute" as it is called. These they make in various styles, and decorate them with beads or some fancy-colored fur, such as the ermine, either in its delicate yellow tinge of summer or the pure white it assumes in winter.

The men are more given to fancy work, and many of their tools and instruments are decorated with ivory. The heads of seal, cut from ivory, are often lashed to their harpoons or strung on the seal thongs stretched over their canoes, and figures of walrus, dogs, wolves, and in fact almost every animal and fish that are found there, are cut on ivory pipes, which some of them make very neatly. Some of the workers on ivory engrave pictures of these animals with an ordinary knife and will decorate a walrus tusk with a ship, which is a good imitation of one of the whaling vessels they have seen. After they have engraved the picture they rub wood ashes mixed with a little oil into the engraving, which leaves a black setting, thus showing the work in the ivory to good advantage.



Cradle.

INSIDE VIEW.

1. Fire hole.
2. Door.
3. Entrance to sleeping apartment.
4. Sleeping room.
5. Window.

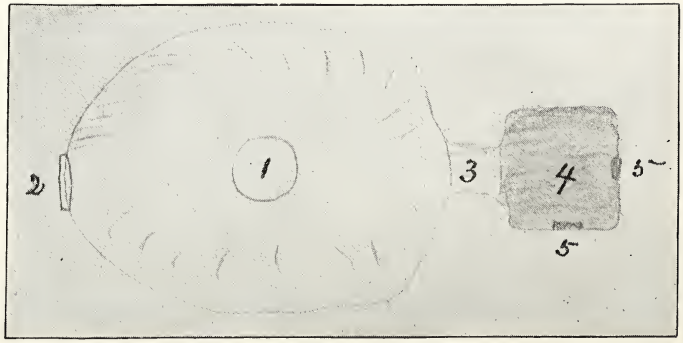



DIAGRAM OF INUIT BARABARA.

Drawing by Benj. Wooche.

Many of the implements used by the Eskimo in hunting and trapping display a good deal of ingenuity, and show that they have studied the habits of the wild animals very closely. If they do not succeed in getting much game it is not because their implements are not adapted to the purpose intended, but on account of the scarcity of the animals.

The improved firearms of civilization are now needed, because the game is scarce and has become so wary that with the old style of implements they can not get near enough to kill them. Yet some of them are still used by the natives who do not possess guns, and especially is this true of the harpoon in hunting seal, walrus, and whale.

To one not acquainted with the manner in which these people hunt seal, it would be interesting to watch one, but in doing so his patience would be very likely to give out before he has seen the seal caught, even if he has mustered up courage sufficient to follow the native over the broken fragments of ice which must be crossed in order to reach the open water where the seal is found.

When one is seen, the native cautiously crawls toward it, until he gets as near as he can on the ice. He then crouches down, and with a stick, on the end of which is fastened the claws of an eagle, he scratches the ice. A noise is made with this that resembles the cry of the seal, and seeing the native it thinks it is one of its own species, and quickly swims toward him, and when it comes within a few feet of the native he throws the harpoon at it. If the point strikes the seal, which it is pretty sure to do, as natives seldom make an attack until they are near enough to the seal to be sure of striking it, it quickly succumbs and is hauled out on the ice.

A full-grown seal of the species usually found here will weigh probably 300 pounds, and when caught a piece of seal thong is drawn over the nose, and with the line over his shoulders the native drags the seal sometimes 3 and 4 miles over the rough ice before he reaches shore, and if a dog sled does not happen to be near at hand, he continues his tiresome tramp with his heavy load until the village is reached.

Among the different varieties of seals caught, the oogasrook is considerably the largest, and will weigh probably 500 or 600 pounds. The skin of this variety is mostly used for covering the boats of the Eskimo, but that of the walrus is generally preferred, as it is larger and heavier. When the walrus skin is used for this purpose, however, it is split in two, on account of being too thick to work up well.

The oogsrook skin is also used for boot-soles, being the only variety heavy enough for that purpose.

The hunting of the walrus is fast becoming a matter in which the natives have little expectation of meeting with much success, as they are rarely seen in large numbers, and as seldom caught.

A canoe crew that in a cruise of one or two weeks secures one of these animals is considered to have been very lucky, when a few years ago they slaughtered them in great numbers. Like the seal, they are

often caught on the ice, but it is not uncommon to shoot and spear them in the water.

In hunting either the seal or walrus on the ice it is customary and far safer to wear snowshoes, as it is necessary to travel more or less across broken ice, and without them, unless great caution is used, one is liable to step between the cakes, and an accident of this character is apt to meet with fatal results.

The trap used by the Eskimo in catching foxes is an ingenious contrivance. It is made of a piece of wood about 8 inches long, with a hole through it lengthwise, and in the middle is a slot cut large enough to inclose a crosspiece or lever, with a point of iron or ivory in the end, intended to be buried in the skull of the fox. Attached to this lever is a piece of seal thong, extending through the wood in both directions, and at either end is a stick made to turn, thus twisting the thong so as to tighten the crossbar to as high a tension as is needed. The bait is tied to a piece of thong, and when nibbled at trips the lever and the fox is trapped. This kind of trap answers an excellent purpose, but is not as compact as that used by the whites, and like most articles of Eskimo manufacture gives way to the most improved ones of civilization as fast as they can procure the necessary means to obtain them.

The Eskimo, in hunting ptarmigan in the spring, usually meet with good success, and it is an interesting sight to see them catch them.

They use a net made of sinew woven similar to that used in catching seal and fish, but the meshes are about 1½ inches square. It is usually about 20 fathoms long and 18 inches wide. They take the net to the tundra land, and when a flock of ptarmigan is seen stretch it out, fastening a stake at either end. Usually two natives go together in hunting ptarmigan, and after the net is stretched they circle around them and slowly drive them toward the net. When the birds reach it, instead of flying over they try to get through, and usually all that are within the scope of it get so entangled in the meshes that they are unable to extricate themselves before they are caught. Frequently a single setting of a net will result in a catch of fifteen or twenty ptarmigan.

The ptarmigan in size and habits resemble the prairie chicken, and in their summer plumage are almost identical in color, but at the approach of winter the feathers generally assume a lighter shade, which eventually becomes pure white. They hatch out their young about the middle of July, and until nearly grown are easily run down.

The first hunting for ptarmigan I ever did was in company with three Eskimo. I was the only one in the party who had a gun, and took the natives with me to beat up the ptarmigan, as I had no dog. After my first shot I of course expected to wait until the birds had settled down before proceeding further, and was amused to see the natives all start after the birds on the run. They were soon out of ear-

shot and I began to feel provoked to think they were chasing them so far that I would not be able to get another shot, when I noticed them scampering among the tundra, jumping up and down, and soon they returned, each bringing three or four nice fat birds about half grown.

The ptarmigan, before they are hunted closely, are sluggish in their movements and like the prairie chicken will lie in the grass and hug the ground close in their efforts to prevent being seen, when a few flaps of their wings would carry them safely out of harm's way.

This country is their natural home, and in summer and fall they are very numerous. Their flesh is tender, and in flavor is almost identical with that of the prairie chicken.

The first approach of spring brings the wild goose and duck in large numbers, and the pool of water which settles about the tundra affords ample scope to use their webbed feet, and the different varieties of grass and flora furnish them with abundant food. The tundra and marshy land make excellent breeding ground, the shallow pools being especially well adapted for the young in their first venture at swimming.

Many of the natives still use the primitive method of hunting the ducks and geese, which consists of a dozen or more pieces of sinew thread about 18 inches long, tied together in a large knot at one end, and on the other end of each is fastened a piece of ivory, cut in circular form, about 1 inch in diameter. With this in the right hand they approach the flock, and when they rise, swing it rapidly and throw it among them. The instant it strikes one the strings get tangled about the feet, wings, or neck, and they immediately drop to the ground, prisoners. This simple device is wonderfully effective, and all that is necessary for the Eskimo to secure his game is to get near enough to hurl the sling among them.

They still cling to the primitive manner of making fire with flint stone and their little pieces of steel, usually a piece of an old file, and flint is as much a part of one's personal belongings as the coat he wears upon his back.

They carry these articles in a little bag, in the bottom of which are little wads of the same fibrous material used for wicks for their oil lamps, and which is gathered from a wild bush in the fall of the year. In making a light, they take a small piece of this cotton, which has previously been rolled in wood ashes, and, holding it between the thumb and flint, strike the steel against the stone, and the sparks emitted ignite the cotton, which is blown into a flame. It is a crude way of getting a fire started, but it is one of the most simple and interesting of their customs, for it comes from a period of time when the Eskimo had to depend upon their own resources for obtaining a fire, and before they knew anything about the usefulness of the match of civilization.

The advent of the whalers in this country has distributed pretty well among the Eskimo many devices and articles which they use in

conjunction with parts of their own tools to very great advantage. For instance, every native man has among his kit of tools an apparatus for drilling holes. This is one of their most useful tools, and as seal thongs are needed in the manufacture of nearly everything they have, a hand drill is essential. Occasionally one is found with a piece of ivory or bone for a drill point, but iron and steel have become so common that nearly every man has them made of one or the other of these materials. This is the only part of this useful article that is of civilized origin. A piece of wood is shaped so as to fit in the mouth, in the middle of which is sunk a piece of stone hollowed out so as to present a smooth surface for the end of the drill-stick, around which is a seal thong attached to a bow-shaped piece of wood or ivory. When the mouthpiece and drill are in position a see-saw motion is made, and the point of the drill quickly cuts the holes round and of the proper depth. It is a vast improvement over the gimlet for light work, and the natives, realizing that they can cut a hole more easily and quickly in this way, adhere to their old style.

The mouthpiece used for drilling holes is also brought into use in starting a fire when they have no flint. Only two persons are necessary to operate the piece of wood that serves as a means of exciting friction. Instead of the bow, a piece of thong is wound around the drill, each native taking hold of an end, and sawing backwards and forwards until the friction ignites the wood, which is done in a few seconds.

This method of starting a fire is very rare at the present time, because it is seldom that one is without flint stone, but it sometimes is made use of, and, if one is driven to it, fire can be obtained without much trouble.

The Eskimo are complete slaves to tobacco, and it is seldom that one is seen who does not use it in one form or another. All the men and most of the women smoke, while a child, after it reaches the age of 5 or 6 years, appears not to be a true representative of his race if he can not smoke a pipe or chew tobacco.

While nearly all the women smoke, they take to chewing more naturally, and they do it so quietly that one would not suspect it from their actions. They never spit, and only crunch it occasionally, preferring to suck it or allow it to lie quietly in the mouth, and, as spittle accumulates, swallow it. They can not understand why a white man spits when chewing or smoking, for they seem to find pleasure in the habit only from swallowing the juice.

If a native is chewing and wants to eat he carefully takes the quid of tobacco from his mouth and puts it behind his ear. From this place it is afterwards taken to be again put in his mouth, and this process is repeated until he has gotten all the substance he can from the tobacco. It is then carefully put away in his tobacco pouch, to eventually find

BUILDING USED BY METHODIST MISSION, UNALASKA. MR. AND MRS. JOHN A. TUCK AND PUPILS.

its way to his pipe, and the end of that tobacco is not reached until it is wafted away in clouds of smoke.

An Eskimo who is without tobacco is as wretched as a confirmed drunkard without his whisky, and he will go to as great extremes to secure it as he would to procure food for himself and family. It is the first thing he asks for when a white man approaches him, and the first article he wants to trade for when he has fur to sell.

Every Eskimo man carries a pipe, and it is the common property of every member of his family, and freely passed around among his friends. It is of a style peculiar to the Eskimo, but resembles in some respects the pipe used by the Chinese, only the bowl is a trifle longer. It is about 10 inches long, slightly curved, and in the bottom near the end which holds the bowl is a slot cut, with a plug made to fit closely, which is removed when enough nicotine and powdered tobacco has accumulated to furnish a pinch or two of snuff. The bowl will only hold tobacco enough for a half dozen whiffs, and the smoke is taken into the lungs and exhaled through the nostrils.

It is thus seen that an Eskimo enjoys all the pleasure there is to be found from the use of tobacco, and, when he is through with it, there is nothing left. Yet after all this is said, it is seldom that one is seen suffering from any evil effects from its use. One whose nerves are all unstrung from the habitual use of tobacco is never seen, and a shattered constitution or emaciated form resulting therefrom is not to be found. Whether their diet of fish and oil tends to neutralize the effect of tobacco is something yet to be determined, but it is certain that the habit has run a siege of many years, and if first introduced among them by the whites it probably occurred at least a half century ago.

They have a substitute for smoking tobacco in a kind of wood or wild shrub found in the country, and it may be that the habit of smoking dates back to a time before they knew of such a thing as tobacco. And for chewing, when one has no tobacco, he finds a fair substitute in a piece of seal skin, which furnishes masticating properties, at least, if not the essence of tobacco.

It is a common practice also, when one is out of tobacco, to take a piece of cloth, and, after rubbing it over the inside of his tobacco-pouch, to chew it, and he apparently finds some little comfort from the process, even if he does not succeed in extracting much of the real flavor.

The taking of snuff is also a practice among many of the Eskimo, and is usually made by mixing tobacco that has first been cut fine and afterwards ground to a powder in a little wooden mortar, with pulverized embers from a wood fire. It makes a good substitute for snuff, giving all the flavor and enough of the exhilarating properties to provoke as hearty a sneeze as one would wish to enjoy.

The snuff is generally carried in little pouches made from seal entrail and to the seal-skin string tied around the pouch is a section of a hollow bone. One end of this is put in the snuff and the other inserted

in the nostril, and, however careful one is in inhaling, he usually gets a noseful, the effects of which are only lost after it passes away in the floods of water that ooze from both nose and eyes. Occasionally an Eskimo is found who practises this habit to excess, and he usually carries a neatly engraved wooden box which contains his snuff, and which he passes around among his friends on every convenient occasion.

That the Eskimo at one time used stone instruments extensively in their work upon wood there can be no doubt, for, although this practice has now become, with few exceptions, obsolete, there are occasionally found adzes, hammers, and chisels, made of jade stone, and which they will tell you are a great many years old. Although few natives possess such a thing as an ax or hatchet, yet there are a few in every village, and they answer very well the purposes for which they are used.

The only stone tools now used are the knife for cutting skins, and a sort of chisel for scraping hair or fur from them. The former is made in the shape of a chopping knife and is usually of slate-stone, and an edge can be put upon it sufficient for all such purposes. The women use this knife very dexterously, and cut and fit pieces of skins as nicely as though cut with scissors from a pattern. In using the stone, chisel, or scraper, the hair is first covered with wood ashes, and these are rubbed in among the roots, and, after being allowed to stand a short time, seems to loosen it so that it is quite easily rubbed off. Sometimes an iron instrument is used for this purpose, but stone is preferred because the proper edge can be had upon it without being sharp enough to cut into and break the surface of the skin.

Among the Eskimo living in the interior baskets and mats of different designs are woven from wild grass, which grows in greater or less abundance on the banks of all the streams and among the low lands. They are really fine specimens of this kind of work, and are woven so closely as to become water-tight after being soaked for a short time.

Large numbers of the ground squirrel are caught along the coast and also back in the interior, and they make a very fair substitute for the reindeer skin for clothing.

These little animals are caught by placing snares over the holes opening into their underground houses, and are made of strips of whalebone in the form of a slip-noose. No bait is required, the squirrel, as he comes out of the ground, running his head into the noose, and, in trying to extricate himself, is quickly strangled to death. It takes forty of these little animals to make a single artiger, and as most of the inhabitants of some of the villages, often numbering over 100 persons, are clothed nearly throughout with these skins, it is seen that they must exist in large numbers.

The oomiak, or skin boat, used by the Eskimo, is peculiar to these people alone, and it is the only kind of boat used by them, with the exception of the kyak, which will only carry 1 or 2 persons.

The oomiak is a curiously constructed affair, and when standing on the beach looks lumbering and awkward and as if it would not carry much of a load or ride much of a sea; yet as many as 30 or 40 persons often get in one, and when thus loaded it will ride in rough water with remarkable buoyancy. The usual size of the oomiak is about 35 feet long, 6 feet beam, about 4 feet deep in the middle, and comes almost to a point at both ends. It is built something after the shape of a dory. The frame work is made of pieces of timber, the heaviest of which is about 3 inches square. These are placed crosswise in the bottom of the boat, and across them are lashed small strips by means of seal thongs, each joint being made to fit closely.

It must be remembered that in all this region there is not a stick of growing timber, save the willow and alder, and these seldom reach a height of over 8 or 10 feet and not more than 2 or 3 inches in diameter, and are only useful to the Eskimo for tent poles and for framework for snowshoes.

When the timbers are firmly lashed together, they are very firm, and a heavy sea striking the side of the boat will not cause it to yield at a single joint. When the framework is finally ready, walrus or sealskin is stretched over it, the pieces sewed together and pulled as tightly as possible and then lashed to the top rail. When the skin is in place, scarcely a drop of water can penetrate through the seams.

Over the top rail about 2 feet of the skin is allowed to hang loosely on the inside, the whole length of the boat, and when sailing in rough weather slats are raised between the skin and frame, the loose skin pulled up, thus giving about 2 feet more of surface above the sea, and if carefully managed scarcely a drop of water can reach the inside in the roughest water.

The oomiak has no keel and therefore can not beat or tack against the wind, and the only thing to do, if it blows too hard, is to seek the first landing that can be made.

There is generally but one mast to the oomiak, and this stands about one-third of the way from the bow to the stern. When there is no wind it is taken down and laid in the boat. Sometimes, when the wind is fair, a second but smaller mast is placed about the same distance from the stern of the boat, but they are only used in the largest oomiaks. The lower end of the mast is inserted in a slot between timbers in the bottom of the boat, and guys extend from near the top to both sides and also to both bow and stern.

One not used to the oomiak is in constant dread of moving about, for fear that if he should step between the framework he will make a hole in the skin, for the water is plainly seen through it. The natives pay little attention to where they step in going from one part of the boat to another, and although their feet will depress the skin 2 or 3 inches, there is no danger of its giving way, and the very spot they are standing on would doubtless hold up a ton.

That the oomiak is a curiously and ingeniously constructed boat must be admitted, and that the Eskimo has availed himself of the best materials nature has given him for navigating these waters, is evident. It may truthfully be said that everything used in its construction comes from the water, for the framework is made entirely from driftwood washed upon their shores from hundreds of miles to the south, much of it water-soaked and partly decayed, and not a nail or piece of iron is used in any part of it. In this light boat they often sail 40 or 50 miles from land and are caught in water that would severely try the strength of boats used by the whites.

The kyak used by the Eskimo is similar in construction and style to the skin canoe or bidarka found among the natives along the southern coast of Alaska. It is not much used by the coast Eskimo, as they do most of their traveling by water in the oomiak, but those in the interior use them to greater extent in navigating on the rivers and lakes, they being so light that they can carry them about with very little trouble. They are generally the single-hatch kyak, but occasionally one is found with two or three holes and capable of carrying as many persons.

The principal vocation of the Eskimo may be said to be fishing, for, although it is principally done by the women and children, the men are sometimes obliged to lend a hand, and for six months at least out of the year it has to be done through the ice.

Barricades are erected at intervals of a few yards and from 20 to 40 rods from the shore. They are built of cakes of snow cut about 4 inches thick, and 2 or 3 feet square. These are placed on end and made high enough to obscure a man standing up inside. They are usually made round and about 5 feet in diameter, the cracks or spaces between the cakes being filled with wet snow which soon freezes, and makes the inclosure nearly tight. The Eskimo stand or lie down in these snow forts, sometimes several hours at a time, when they are catching few fish. The same sort of protection is built when they spear fish, but is nearer shore and where bottom can be reached at 8 or 10 feet.

Holes are cut through the ice by means of a piece of sharpened ivory or iron lashed to a pole 10 feet or more long, and with this the ice is picked off and scooped out until water is reached. The opening thus made is about 1 foot in diameter.

An indispensable article used by the Eskimo when making holes in the ice is a scoop-shaped tool attached to the end of a pole. It is about 6 inches in diameter, made of bone bent round with strips of whalebone stretched across the bottom, so as to leave little holes, through which the water drains when the pulverized ice is scooped out of the hole. When spearing fish, the face is held so close to the water that the breath causes a coating or coagulation to form on the surface, and this implement has to be often resorted to in order to clear away the ice so the native can see through to the bottom.

PUPILS AT MISSION HOME, UNALASKA, 1892. SUPPORTED BY METHODIST WOMAN'S HOME MISSION SOCIETY OF THE UNITED STATES.

In fishing through the ice a hook is used made from ivory or a piece of steel, when such can be had, and they are seldom baited, the fish being gigged. In other words, they have a number of small colored pieces of bone, usually red, strung along the line just above the hook, which attracts the fish, and by continually raising and lowering the line it is caught. The hook used by the Eskimo has no flange like those used by the whites, but so dexterous are they in hauling the fish from the water that one seldom drops off.

The fish-line is made of strips of whalebone, each about 8 inches in length, the ends being tied together with the same material, and they are generally 20 or 30 feet long. The rod is about 2 feet long, and in fishing is held in the right hand, while the left holds a stick of about the same length, which is thrust under the line as it is being hauled out, the same motion being made with the rod, and when the fish has reached the surface the line lies in loops on the ice.

The fish caught in winter are all small, seldom measuring more than 8 inches long, and it will take 2 persons several hours, with good success, to catch enough to supply an ordinary family with food for a single day.

In spearing fish an ivory-pointed spear is used with little sharp notches cut on both sides. This is fastened to a slender pole 10 or 12 feet long. The Eskimo lies flat on the ice, the spear held in his right hand, the head within a foot or so of the bottom, and the hood of his artiger drawn closely around the hole. When in this position the minutest particle of sand is seen at the bottom, the water being so transparent and the ice serving as an illuminator. As the fish glides quietly along, the spear is quickly thrust down, and it is generally securely impaled on the point of the spear.

One can not realize the tediousness of fishing either with a hook or spear until he has watched these people, who frequently lie in one position an hour or two before a single fish is caught or even seen. The Eskimo believe a hole can be fished dry, for they occasionally change their locations and build another barricade, which they continue to occupy until the fish are all caught or migrate to another locality.

Salmon are only caught with the seine, and in some localities are quite numerous. They weigh from 6 to 10 pounds, and the only process of curing them practiced by the Eskimo in this section is that of drying. Among the natives of the interior they constitute their principal food and serve as an article of traffic with the coast people, exchanging them for fish and oil.

Seals are sometimes caught in seines. Both late in the fall and after the ice thaws out in the spring they are set in shallow localities, and occasionally with good results. It is not a common way of hunting them, however, and the number caught in this manner is comparatively small.

The only difference in the style of clothing worn by the men and

women is in the artiger and pants. In the former those worn by the women have a slit cut on both sides from the bottom to the hips, while those worn by the men are the same length all around. The pants worn by the women have the foot gear sewed to them, while those worn by the men are either cut off at the ankle or knee. When a woman is bundled up in cold weather and the hood of her artiger is drawn closely around her face, the only way she can be distinguished is by the shape of her artiger.

An article of clothing that is indispensable among the Eskimo is the "kar pee tuk" or skin coat. It is made from the entrails of the seal or walrus, strips about 3 inches wide being sewed together and made so as to slip over the head like an artiger. It is identical in shape and made the same as the "kamalika" worn by the natives along the southern coast of the Territory. If carefully sewed, it is water-tight, and will weigh but a few ounces. It is rather a neat and tasteful looking garment when dry, and rustles like silk, but when wet has a slick or slimy appearance strongly suggestive of the part of the animal from which it was made.

Pants and drawers worn by the whites are much sought after by the Eskimo, and are worn over their skin pants for the purpose of protecting them from the snow, which always clings to the fur, getting down among the roots, thus wetting the skin, which becomes hard and soon rots. For the same reason calico and drilling are much worn by them to protect their artigers.

A mark which serves as a good means of determining the sexes is that worn by the females, which consists of three or five lines about an eighth of an inch wide on the chin, which resembles tattooing made with India ink. Instead of pricking it in, a sharp instrument is drawn over the skin until blood comes, and wood ashes are then rubbed in. This practice is almost universal, and is usually put on when a girl reaches about the age of 8 years.

Among the men the practice of wearing labrets is common, though not so universally adopted as tattooing among the women. The most popular style is about a half-inch in diameter, but sometimes they reach the enormous size of an inch and a half. They are usually made of highly polished ivory with a colored bead in the center, and are occasionally worn on both sides of the chin. Glass stoppers are much sought after for this purpose, but not much worn on account of being difficult to obtain.

The tattooing by the women and wearing of labrets by the men have no significance other than being considered an adornment for the face.

Some of the women have the middle latch of the nose pierced, from which beads are suspended, but they are considered troublesome and are rapidly going out of style.

The favorite manner of having the ears pierced by the women is just above the end, from which two or three strings of beads are suspended,

passing from one ear to the other under the chin. The younger women wear beads wound around their hair, which is first braided on both sides, and occasionally bracelets and necklaces of beads are worn.

The men seldom tattoo their arms or hands, and their only peculiarity of dress is wearing the labret as above and shaving the crowns of their heads.

The Eskimo woman's ambition for jewelry extends no further than a ring or two, and a brass or copper one is valued as highly by them as a gold one would be. They do not take kindly to jewelry for the ears or neck, and if one is seen with a bracelet of any kind it is either brass or copper.

The snowshoe of the Eskimo is similar to that used in all cold countries, but with these people real thongs are used instead of strings made from deerskins. They are always carried on the sled when traveling, and are much needed when the snow is thawing in the spring. They are especially useful when hunting seal on the ice; for the wearers are thus enabled to cross over broken cakes, when without them it would be dangerous traveling.

Many natives when traveling carry with them a stick having a circular-formed piece of whalebone at the bottom about 6 inches in diameter, and pieces of the same material stretched across it in a little network. On the end of the stick is a pointed piece of ivory, and it is used as one would use a cane, the point piercing the snow or ice and the circular piece preventing it from settling into the snow. It is a very useful thing, especially if it is slippery or the snow is soft, and a native carrying one of these is enabled to walk or run over the smooth crust, while without it he would find progress very slow with his smooth-soled boots.

The Eskimos are decidedly domestic in their habits and tastes. A family is always together, whether in the village or traveling about. The men are usually kind and considerate toward their wives, and the affection of the parents for their children is very marked, and they often indulge them to a fault. The children are seldom punished, and, if so, very lightly, and they are made to come under obedience by force of moral suasion. Yet they are very obedient to a parent and usually respond quickly to a command. If one is sick, he receives all the care and attention that the parent can bestow, and this is true among the older ones. An invalid is an object of deep solicitation by friends and relatives alike, and will often receive contributions in the way of food when it comes from one whose supply will not justify giving anything away.

The observation of strict marital relations appears to be the rule among the Eskimos, and it is seldom that a woman is untrue to her husband or a husband consorts with another woman. The indiscriminate discussion of lewd topics is often indulged in, and one, to observe the manner in which they live, would expect to find them loose in their

morals; but this is not the case. Neither among the young women is there a large proportion of immoral characters. There are in every village women who are known to be immoral, but they are the exception.

Occasionally a man will whip his wife for some real or fancied wrong, and when he does so his conduct is generally approved by the woman's relatives and the public generally, who seem to regard the cause sufficient without inquiring into the particulars of it. This curious practice appears to be a sort of generally established right that the husband is entitled to indulge in, and it seems that the woman thinks more of her husband after her chastisement.

While it is true that a white man may secure an Eskimo girl from almost any family as a wife, it is not true that one can prostitute his wife or daughter at pleasure. They are very sensitive on this point, and only in view of securing a better home and plenty of food and clothing than her parents are able to provide her with is she induced to live with him or to secure the consent of her parents to the arrangement.

Plurality of wives is a practice also that is by no means common, and when it does occur it is among men who, by virtue of their possessing more property than their neighbors, are able to support more than one wife. When the custom prevails, there appears to be no disturbing or quarrelsome disposition, and if there is any the aggrieved woman bottles her wrath, doubtless from fear that she will be turned out to shift for herself, which is more to be dreaded than any pang of envy or jealously she might experience.

When a man and woman separate, it is the practice for the man to take possession of all her personal belongings, even stripping her of any part of her clothing that could be made useful for another wife.

The practice of human sacrifice or inhuman treatment of any character among the Eskimos is never indulged in, and if it ever was the custom to kill one who had become too old to be able to take care of himself, it has been abandoned, as the large number of aged and decrepit persons now living among these people will bear witness.

Neither is it the present practice in this neighborhood to put a woman about to be confined in a tent or hut by herself, unprovided with food, for any length of time, or fuel by which she can keep warm. In the large number of confinements that have occurred during the past year among the Eskimo along the coast and in the interior, not an instance has occurred where a child has been born outside of the mother's regular abode, and where she has not had the benefit of the care and attention a woman in her condition should receive.

In the matter of courtship, it seems that when two persons meet who think they are adapted to each other, all that has to be done is to obtain the consent of the parents of the girl. If the youth possesses the means to give his wife a comfortable home, and his reputation as a hunter or fisherman justifies the parents in placing her in his keeping,

TCHUCTCHEE TENT, SIBERIA.

all formalities are dispensed with, and they enter at once into the relation of man and wife. Long courtships are of rare occurrence, and they do not seem to be attended with any great degree of romance. If a young man has an elaborately trimmed artiger which he wishes to present to a girl, he seldom offers it until he is pretty certain that she will accept it. The idea that seems to prevail is that this article is secured by a young man and sent to the object of his affections as a proffer of marriage, and that his heart ceases to beat from that time until it is returned to him or he sees it upon her back, the former as a notice that she has refused him, and the latter that she accepts his proposal; but this idea seems to be a thing of the past and a part of Eskimo etiquette concerning courtship that lives only in memory. A gift of an artiger seems to be a popular one when a couple are about to live together, and is a symbol of actual engagement.

The practice of manufacturing liquor, so prevalent among the coast natives throughout southern Alaska, seems not to be indulged in among the Eskimo of this region to any extent. There are isolated cases where rudely constructed stills are made to produce a vile decoction called "tarny uk," from molasses and flour, but they are very rare. Neither is liquor sold to the people by whaling vessels to any extent, if at all.

While it is a fact that some of the whaling vessels carry more or less on board, it is disposed of on the Siberian side, and comparatively little is brought across Bering Strait and distributed to the natives on this side. Indeed, there is little inducement for the vessels to carry on this traffic with the Alaska natives, for none of them ever possess furs or whalebone of sufficient value to warrant the whalers in trading it, when by so doing they run the almost certain risk of being seized and having all their property confiscated. Even if there were a disposition to trade liquor among the Eskimo on this side, the presence of the revenue steamer *Bear* patroling these waters from the time the navigation first opens until it is closed by seas of ice in the fall acts as a standing menace against such a project.

The Arctic Alaska Eskimo is physically a fine specimen of the human race. While as a rule they will not average over 5 feet 6 or 8 inches in height, occasionally a 6-footer is found, but he is a very rare exception. They are not by any means dwarfish in stature or slow and sluggish in their movements; neither are they dull and stupid intellectually. The casual observer might think them so, for they appear subdued and reserved when among the whites; but when away from them and left to act freely, they are bright, cheerful, and intelligent.

A stout or corpulent Eskimo is never seen. Their whole life is one which calls into play every muscle of the body, and they are distinctly an athletic race. Not a pound of superfluous flesh is on their closely knitted frames, and, while their hands, lower limbs, and feet are very

small, their chests and shoulders are grandly developed, and their arms are muscular and sinewy.

They are very fond of athletic sports, and football and jumping are indulged in by them to a considerable extent. They indulge in many exercises that test their strength, such as pulling each others arms when locked together, wrestling, lifting each other or heavy weights, and many such exercises that will bring into play every muscle. Many of them excel in jumping and kicking, and occasionally one is found who can kick with both feet higher than his own head, a performance that few white athletes can accomplish.

The principal amusement of the Eskimo is dancing, and they indulge in it upon the slightest provocation. While the women take part in this pastime, it is with moderation, and as a sort of embellishment to the fatiguing and wearisome jumping about so ceaselessly practiced by the men. They seem to find the most enjoyment in blending their voices with those of the men in song. Although they do not possess the accomplishment to a very great extent, nor is the number of tunes very large, yet there is a harmony in them all that becomes the more pleasing to the ear the oftener they are heard.

When dancing, one or more of the men beat upon a drum formed by stretching a piece of walrus entrail over a hoop, and this serves as a time-marker for the participants in the dance, to which the grotesque throwing about of the arms and twisting of their bodies are made to add a pantomimic accompaniment. During all this time they jump and whirl about in the most violent manner, and only stop from sheer exhaustion.

This amusement often assumes the proportion of a festival lasting several days, and whole villages often go long distances to visit those of another. On such occasions the men bedeck themselves in all sorts of grotesque costumes, wearing upon their heads feathers of birds, their faces concealed behind hideous-looking wooden masks, and their bodies bare to the waist.

Each village possesses a large hut known as "kas gee," a place set apart for festive occasions, and it is the scene of great excitement and demonstrative joy when natives from abroad are present, and they all return home, possessing many, to the Eskimo, costly presents.

The Eskimo dog is a creature of great sagacity, in his way, and does not possess many of the generally worthless traits of the cur usually found in villages of natives in more temperate climates. He is often cared for with the indulgence of a child, and while the nature of the Eskimo is to be brutal to all creatures not human, his dog is fed regularly, and his last fish is shared with the animal when on a journey.

While the Eskimo prizes his dog highly, it is not because he is actuated by feelings of affection, for he is not looked upon at all in the light of a companion, and is never caressed and petted. His care of the brute is purely from selfish motives, for he realizes that the loss of

his dog means many a weary tramp in which he himself must become the beast of burden.

The Eskimo dogs are comparatively small, seldom weighing over 35 pounds, and their hair is of every shade and color. There is one peculiarity in their hair that is common to them all, and that is its length and thickness. It is always fine and soft, and close to the skin is as thick as it can grow, thus enabling them to withstand successfully the rigors of the Arctic winter.

An Eskimo never thinks of sheltering his dog, and pays no more attention to his comfort than if he did not possess such an animal. In fact, he does not need any protection but that which nature has given him. Neither does he seek for some sheltering nook or cover when the wind is blowing its keenest, but lies down on the snow or ice, exposed to the full fury of the storm, curled up like a ball, and sleeps as soundly as he would if on a bed of furs.

A dog with a frozen ear or tail is never seen, and, although they will lie in one position for hours at a time, are never known to shiver or in any way show that they are experiencing any bad effects from the cold. It often occurs that a search has to be made for a dog, for he will lie so still that the snow completely covers him, and if not completely covered, and his hair happens to be light colored, it is hard to distinguish him from the drift piled up about him.

But few females are allowed in each village, and these are kept only for breeding purposes and are seldom used in the sled. The pups, when large enough to run about, are made to wear a harness continually, and a great deal of the time are kept tied to heavy logs or stones. This is to accustom them to the harness from their infancy, and in their struggles to get loose will pull and haul about, thus developing muscle and strength, which makes them valuable draft animals after they are full grown.

Six or eight dogs make a good team, and it is wonderful what loads they can haul. If the traveling is good, a team of six dogs will haul as many hundred pounds and go along 25 or 30 miles a day without experiencing very much fatigue. If the snow is soft or the ice is rough, it is sometimes necessary to pull to one side a little, or push it ahead a trifle, if they should become stalled, when they will immediately take up the slack and start on again. They are very persistent when unable to move a heavy load, and will jump up and down and in a broken chorus of barks and howls manifest their impatience to go, and when they start settle down to an earnest pull, only to give it up after they have exhausted all their strength.

The favorite way of driving dogs among these people is one ahead of the other, each tied to a long rope, and they are placed so that half of them are on one side and half on the other. The harness is a simple device, slipped over the head and passing under the forelegs, coming up on the side, where a backband is tied, thus bringing the draft on both shoulders and back.

The Eskimo seem to understand how to break a dog to haul a load and keep his place in the team, but they have yet to learn the art of guiding a dog by motioning to him from behind. If only one native is with a team he must run ahead, and they will follow, but if he drops behind the dogs do not seem to understand that they are to keep on. When there are two or more natives with a team, they can take turns running ahead and riding on the sled, and in this way the dogs are kept going.

When traveling by boat the dogs are usually carried along, and when there is no wind, and a beach is near by, the dogs are put ashore, a line is fastened to the oomiak, the dogs being hitched to the other end, and the boat is pulled along at a lively rate of speed, and the occupants settle back to enjoy a sleep, eat, or sing, and pass the time as they see fit.

When the Eskimo doctor has exhausted all his resources in his efforts to cure a sick person without success, the patient is taken out of the hut and put into a tent to die. This is done only when all hopes for his recovery are given up, and he lies on his bed of furs, surrounded by weeping relatives and sympathetic neighbors, who often carry their grief so far that their lamentations are heard throughout the village. When death relieves the sufferer from his pain, which has doubtless been hastened by the show of grief all about him, there is no ceremony over the body. It is wrapped up in seal or walrus skin and taken either to the village burying ground or to a spot some distance removed from the other graves, and either placed upon a frame of logs or on the top of some ridge of ground, and logs and stones are piled about him. If a man, it is customary to bury him with some of his personal belongings, such as his tobacco pouch, pipe, spears, or other articles, and sometimes his rifle, but this is very rarely done. If a woman dies, her thimble, earrings, knife, and other little trinkets are placed by her side.

After the burial is completed no member of the family ever visits the grave, and other natives never go near. The grave of an Eskimo is shunned completely, and with the burial all association on this earth with the deceased is at an end, and rarely is any reference ever made to him, unless to recall to memory some of his virtues, which soon appear to be forgotten, and his loss ceases to be mourned for.

Very respectfully, yours,

MINER W. BRUCE.
*Supt. Teller Reindeer Station.*

ESKIMO TENT, ST. LAWRENCE ISLAND, ALASKA. SCHOOL BUILDING IN THE DISTANCE.

Photograph by A. L. Broadbent, U. S. R. M.

Exhibit A.

## LIQUOR SEIZED AT REINDEER STATION.

Teller Reindeer Station,
*Port Clarence, Alaska, September 25, 1892.*

Sir: Early yesterday morning a Port Clarence native, known by us at the station as "The Thug," came to the house very drunk and insolently demanded some matches.

I was standing near some natives who were at work sawing wood at the time, and 20 or 30 more natives stood around, some of whom were evidently frightened at the sudden appearance of this man in such a condition. He is the bully of this camp, and is in the habit of running things about as he wants to, and for sometime it has been evident that he would try to run this station. Last winter he killed a native at this place in cold blood, and he evidently considers himself a better man on that account and entitled to the privilege of running over everyone in whose contact he is thrown. This position is made more emphatic because it is known he carries a big revolver about him all the time.

In view of all the circumstances, we made up our minds that this was the time for a little heroic treatment, and I at once took hold of "The Thug" and dragged him to the beach.

I then went to a tent occupied by some Cape Prince of Wales natives who had arrived the day before, and from whom "The Thug," as we concluded, had obtained his whisky. They all protested that he got it from some Diomede natives that had left that morning, and I finally returned to the station. Here I found two natives who declared he obtained the whisky from the strangers, and after consultation with Mr. Gibson we concluded to search the tent. On our way there we saw a native start away in a suspicious manner, and when we arrived there they were anxious we should not make a search.

As previously arranged, Mr. Gibson stood near to be ready in case of any hostile action, and I went into an adjoining tent, where I found two quart bottles of whisky, which I still hold.

For a while it looked as if we might have trouble, as some of the natives were a little demonstrative, and "The Thug" had joined them, but they evidently thought better of it, and we returned to the station. The natives soon went on to Grantley Harbor, but will return in a few days on their way home.

Some of the natives about here, either through a spirit of fun or because they really contemplate making trouble, have told the herders that the herd of reindeer will be raided this winter and all of us killed.

We do not apprehend any trouble on this score, but the herders are evidently fearful that something will happen. We realize that if our Siberian herders are molested it will be a very difficult matter to save the deer.

What effect our action in seizing the whisky will have remains to be seen. It will either effectually stop the sale of it at this place or cause trouble. We feel now as if we will be obliged to carry out the policy of seizing all the whisky brought here at whatever cost, and have served notice on the natives to this effect. We have also notified the teachers at Cape Prince of Wales of our determination, and asked them to take pains to notify their people that we will not tolerate it here.

I believe you are aware that besides your instructions to seize all the whisky brought here, Capt. Healy made the same order, and told us to tell them he would settle with them when he returned next season.

There is evidently a system of whisky traffic among these natives after the departure of the *Bear*, and it is the cause of all the trouble among them. Only last week Mr. Lopp sent word that one of the Cape Prince of Wales natives had just been killed by another in a drunken brawl, and there are three or four murderers running around who have killed their men. The entire freedom of these men from punishment seems to make them conspicuous examples for others to follow, and it seems to me that steps ought to be taken at once to show these people that such conduct will not be tolerated.

I believe if Capt. Healy would take a few of these people to Sitka next season and have them punished as they deserve it would prove a wholesome lesson. Nothing would be worse punishment to them than to be confined to jail at Sitka or sent to prison for a term of years, and I believe the authorities at Washington can be induced to take steps looking to this end.

It seems to me that, in view of the reindeer project and the objects sought to be attained by the establishment of this herd, the natives should be made early to understand that any infraction of the peace, or interference with the herd or employés, will be severely dealt with. If the Government does not take the matter in hand the whites will have to do so for themselves sooner or later.

I presume the marshal of Alaska could appoint a deputy at this place who would be authorized to make arrests, but without being so directed by the authorities at Washington it is doubtful if compensation would be allowed. If nothing better could be arranged, I suppose the deputy marshal at Unalaska could be ordered to proceed here and make the arrests.

My only chance to send this letter to you this year is to send it to Cape Prince of Wales and ask the teachers there to send it out to some passing whaling vessel bound south.

Will send a copy of this letter to Capt. Healy.

Will it be a good idea for you to communicate with Marshal Porter at Sitka and ascertain his views on the subject?

Will add that we have the testimony of two witnesses as to the manner and quantity of whisky obtained by "The Thug," and testimony that he paid for it in calico; also witnesses can be had of his killing the native last winter.

I have the honor to be, very respectfully,

MINER W. BRUCE,
*Teacher and Superintendent.*

DR. SHELDON JACKSON,
*United States General Agent of Education in Alaska.*

---

EXHIBIT B.

## W. T. LOPP ON THE REINDEER HERD.

CAPE PRINCE OF WALES, ALASKA, *May 13, 1893.*

KIND SIR: Thanks for yours of the 1st instant. I am glad to have an opportunity to express myself on the reindeer question.

After three years' study of the habits and peculiarities of the Eskimo on this coast, I feel safe in saying that I think it both practicable and possible, if proper allowances be made at first, to make herders of a sufficient number of our Eskimo hunters and fishers to care for all the deer that may be brought across the Straits.

As to food, the natives all along the coast are at the mercy of the winds, and for deerskin clothing they are dependent upon exacting "oo mal-git" (traders) of this place and the Diomedes Islands, who monopolize the Siberian deerskins traffic. Their dependent condition leads me to think that mission herding and training

schools would be the best and quickest means of Christianizing and civilizing them.

When Mrs. Lopp and I visited your station last August and viewed the acres of horns, we could hardly believe our eyes. It seemed as if we had suddenly stepped into the fairy land of Santa Claus, although, when seen in the distance, the deer resembled a herd of cattle quietly grazing on a gentle hill slope in the States.

Again, when I visited you in April last, and rode out to the herd behind two fleet-footed deer, saw the fawns gamboling over the snow, and the big herd feeding in almost the same place where we had seen them in August, witnessed four deer drawing four sleds loaded with driftwood, which would have required twenty dogs, I realized more fully than ever before how completely and admirably the domesticated deer are adapted to the wants of the inhabitants of these frozen waste lands.

The exhilarating excitement which I experienced in taking my first ride behind reindeer is a pleasure which I shall always remember with pride.

On our recent missionary trip, Mrs. Lopp and I had a good opportunity to study the habits and adaptability of the Eskimo dog. We traveled from here to Point Hope, more than 300 miles, in twenty-three days, sixteen days of actual traveling. The other seven days we were laid up on account of bad weather or to rest our dogs.

With deer I think we could have reached Point Hope in half the time, especially had herds of deer been available at two or three settlements along the route, so that we could have changed our team occasionally. At times we were compelled to haul dog food 100 miles, while with deer they could have picked their food, as there is an abundance of moss all the way.

It may be of interest to note that while on this midwinter journey we were clothed in deerskins, carried a deerskin tent (seven winter skins sewed together) and sleeping bag of the same, and escaped without a frostbite, although there were days when the thermometer registered 33° below zero, and we camped out when it was as low as 22° below.

We explained Dr. Jackson's and Capt. Healy's philanthropic scheme to natives of twenty-two settlements, and they were all delighted with the idea. Some looked as though they thought it too good to be true, but their doubts soon vanished when I told how nice they were doing at your place. They would often say, "Hurry up," "Bring the deer next year," "Plenty moss," etc.

The farther north we went the more poorly clad we found the people. Most of their artigers were made of squirrel or rabbit skins. At Point Hope only a few wore clothing made of Siberian (summer) deerskins. Most of them were clothed in wild (winter) deerskins, which, on account of their weight and long hair, are only adapted to tents and sleeping blankets.

Our chiefs here at the cape, who visited the station last winter and saw the herd, seem very highly pleased, and are anxious to invest in small herds of their own.

In conclusion, let me congratulate you in bringing the herd safely through the first winter, thus forever closing the mouths of those who have prophesied failure.

With many thanks for your kindness during the winter, and for the trouble you have taken to enlist in the cause our people who have visited the station I am, very truly yours,

W. T. Lopp.

Miner W. Bruce,
*Superintendent Teller Reindeer Station,*
*Port Clarence, Alaska.*

EXHIBIT C.

## H. R. THORNTON ON THE REINDEER HERD.

CAPE PRINCE OF WALES, ALASKA, *May 22, 1893.*

DEAR SIR: It affords me pleasure to express my sense of the successful result of the experiment of introducing domesticated Siberian reindeer into this section of Alaska.

American whalers have made millions out of the whales of these waters—the natural support and property of the Eskimo—it is only just that our Government should ward off the starvation not improbably produced by killing off the whales, by giving the Eskimo an opportunity of cultivating an equivalent food supply in reindeer.

The skins of the reindeer are indispensable for winter clothing and bedding, and the pleasant drive Mrs. Thornton and I took behind your pair of deer in March convinces me of their great value to these people as draft animals. They were here six days, I believe, unmolested by our 150 dogs; so there seems to be no great difficulty on that score.

Very truly yours,

H. R. THORNTON.

MR. M. W. BRUCE,
*Superintendent Teller Reindeer Station,*
*Port Clarence, Alaska.*

---

EXHIBIT D.

## JOHN A. DEXTER ON REINDEER HERD.

GOLOVIN BAY SILVER MINE, ALASKA, *June 14, 1893.*

MY DEAR SIR: During my visit to the reindeer station last winter, which was extended much beyond the time I had expected it would be before I left home, I had an opportunity to get an insight into the reindeer question, and learn many things about this useful animal that were not only a surprise but a sort of gratification to me.

Since my return home I have had time to think it all over, and the more I think of it the more firmly I am impressed with the importance of the movement, not only to the natives, who, the Lord knows, need something to relieve them from their destitute and suffering condition; but it seems to me it can be made a matter of pecuniary profit to civilization, and convert the boundless wastes of Arctic Alaska into the field of a valuable industry.

During the past two winters I have spent in this country I have traveled over a large extent of territory, and my means of traveling has been by dogs. They have always been the best I could procure, and until I saw what a deer was capable of doing, I thought them a superior animal for Arctic traveling and the only one that could be used for that purpose. While I am still of the opinion that dogs are not only valuable, but perhaps essential for certain purposes, and will always be used by the Eskimo to a greater or less extent, I see many ways in which the reindeer are superior, and can be made to take their place as a valuable substitute.

In the number of trips I made with reindeer while at the station, and especially the one to Cape Prince of Wales, their capacity for traveling was fully and satisfactorily demonstrated. On that trip our teams traveled right along with the dogs, apparently with little fatigue, and you and I rode all the way and were comfortable, while the natives with the dogs were obliged to walk or run most of the time.

The pleasure I experienced on this trip was greater than any I have ever enjoyed before in my frequent journeys in Alaska, but I shall always regret that part of it


GROUP OF ESKIMO AT ST. LAWRENCE ISLAND, ALASKA.

Photograph by A. L. Broadbent, U. S. R. M.

on our return home when, by some means, I allowed my team to be attacked by dogs. Subsequent experience showed that I was wholly to blame for the accident, but I find some little satisfaction in realizing that no permanent injury resulted to the deer.

I need not speak of the great need of some means by which the natives can secure proper clothing to enable them to withstand the severe winter of this latitude, in place of the light squirrel and rotten rabbit skins now used almost entirely by them all through this section, for you are fully apprised of that fact.

Neither is it necessary to discuss the importance of some other food supply than that had now only by patient and continual labor in all sorts of weather by the natives, for you have had experience enough with your own people to know what trials and dangers they undergo to get sufficient to preserve life. But if the propagation of reindeer throughout this region is hastened, it will place these people in a position that will make their lives worth living, and raise them from an existence where toil is accompanied with the ever-present shadow of starvation.

My hopes that you would bring the reindeer through the balance of the winter after I left the station, all right, I am happy to learn are realized, and I also learn that you have a large number of young deer.

The native I took with me to your place has set the natives here wild on the reindeer question, and he wants me to ask you to give him a place on the herd. I know you have many applications for such positions, but I can recommend him as a good man, and believe it would be a good idea to let these people have one of their men represent them at the station. If this can not be done, I wish you would urge the authorities to either start a station here or send a small herd somewhere in this section of the country.

The most exaggerated accounts of the number of deer at the station are in circulation among the natives, many of them thinking you have several thousand. As you prophesied, I am unable to find a single native now who predicted last summer that the deer would all die. It is like everything else in this world. Nothing succeeds like success, and the natives who knew the venture would prove a failure are now the first ones to say that they knew the deer would come through all right.

I outlined the character of the country down this way to you while at the station, and I have seen no reason since my return to change my opinion that it is as well adapted to raising deer as in your section. Moss is everywhere abundant, and there are large tracts of grass that afford an unlimited supply of summer feed. You will remember I told you of the quantity cut and put up for our mules, both last year and this.

I hope you have fully recovered your health, and that your experience with the reindeer will prove as successful at the end of the coming winter as the last.

I am, with respect,

JOHN A. DEXTER.

Mr. MINER W. BRUCE,

*Superintendent Teller Reindeer Station, Port Clarence, Alaska.*

## AGRICULTURAL COLLEGE AND EXPERIMENT STATIONS RECOMMENDED IN ALASKA.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
*Washington, D. C., December 15, 1890.*

DEAR SIR: In 1884 Congress passed "an act providing a civil government for Alaska," which was approved by the President on May 17 of that year.

As the act provided for no legislature or legislative control, or for any taxation, all educational matters were devolved upon the Secretary of the Interior, and he was charged with the duty of making "needful and proper provision for the education of the children in Alaska."

This he has commenced to do through the Bureau of Education in the establishment of elementary and industrial schools, in which are taught a few of the mechanic arts.

In the growth of these schools and in the development of the educational system the time has come when the conditions of the country and people demand an enlargement in the line of the act of July 2, 1862, providing schools for the benefit of agriculture and the mechanic arts, and the supplementary act approved March 2, 1887, establishing an experiment station in connection with agricultural schools, and also the act approved August 30, 1890, for the better support of the schools for the benefit of agriculture and the mechanic arts.

There are in Central and Arctic Alaska about 400,000 square miles of moss-covered tundra that is especially adapted to the grazing of the reindeer and is practically useless for any other purpose.

To reclaim and make valuable this vast area, to introduce a large and permanent industry, where none previously existed, to take a barbarian people on the verge of starvation and lift them up to a comfortable self-support and civilization, is certainly a great and important work.

In the States and Territories situated in the temperate zone, one of the leading features in the course of instruction in an agricultural school is stock raising. In Alaska the environment would cause the care, management, and propagation of domestic reindeer to be one of the leading industries.

The stocking and utilizing of the vast plains of polar Alaska would be a great event under any circumstances. But just now it is especially important and urgent, from the fact that the destruction of the whale and walrus has brought numbers of Eskimo face to face with starvation, and something must be done promptly to save them. This

can be accomplished through the introduction of domesticated reindeer and by teaching Eskimo boys and young men the best method of taking care of them.

Again, thousands of miles of the southern coast of Alaska, owing to the "Japan current," has a temperate climate, and it is probable that some fruits and vegetables could be grown with success, but no intelligent experiment has been made to test the agricultural capabilities of the country.

Until quite a recent period the European population were fur-trading Russians. They were followed by fur-trading Americans, and more recently by the gold seekers. No one expected to remain long in the country, and there has been no incentive to carry forward intelligent experiments in agriculture.

As early as my first report to the Commissioner of Education (1885), I called attention to the fact that there was a very wide diversity of views concerning the agricultural and horticultural capabilities of Alaska, and, necessarily, very great ignorance; that no systematic effort, intelligently prosecuted, had ever been made to ascertain what could or what could not be raised to advantage; that it was of very great importance, both to the people of Alaska and the country at large, that careful experiments should be made, extending over a term of years, to ascertain the vegetables, grains, grasses, berries, apples, plums, trees, flowers, etc., best adapted to the country; the best methods of cultivating, gathering, and curing the same; tree-planting and grafting of fruit trees; the development of the wild cranberry; cattle, hog, and poultry-raising; butter and cheese-making, etc.

The acts of Congress relating to the agricultural schools above mentioned require the assent of the legislature of the State or Territory in order that their provisions may become available.

But as Alaska has no legislature, and on that account Congress has devolved upon the Secretary of the Interior the duty of establishing and conducting schools and making the rules for their government, I would respectfully and earnestly recommend that you apply to him for the establishment of an agricultural school as contemplated by the acts above cited.

And if it be decided that he has not the power to do so, then ask Congress for legislation empowering the Secretary of the Interior to extend the benefits of said acts over Alaska.

Very truly, yours,

SHELDON JACKSON,
*U. S. General Agent of Education for Alaska.*

Hon. W. T. HARRIS, LL. D.,
*Commissioner of Education.*

## REQUEST FOR THE ASSISTANCE OF CAPT. M. A. HEALY, U. S. REVENUE MARINE.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
*Washington, April 24, 1891.*

SIR: During the last session of Congress a resolution (H. R. No. 258) extending to Alaska the benefit of the laws encouraging in the several States and Territories instruction in agriculture and the mechanic arts, was considered and reported favorably by the House Committee on Education, but failed to be reached on the calendar. The matter is so important that the resolution will be again introduced next session.

It is hoped that by this means the domesticated reindeer of Siberia may be introduced into Arctic Alaska, both to increase the present insufficient food supplies for the Eskimos, and to create a new and profitable industry which will insure their self-support.

I am informed that Capt. M. A. Healy, of the Revenue-Marine Service, during his regular cruise this summer in Bering Sea and the Arctic Ocean, will have occasional opportunities of securing information with regard to the practicability of procuring and transporting the domesticated reindeer from Siberia to Alaska.

As such information will be valuable in connection with the proposed legislation, I respectfully suggest that the Secretary of the Treasury be requested to authorize Capt. Healy to make such inquiries, as far as is consistent with his regular duties, and to report upon the same on his return.

Very respectfully,

W. T. HARRIS,
*Commissioner.*

The SECRETARY OF THE INTERIOR.

*MEMORANDUM CONCERNING THE PURCHASE OF DOMESTICATED REINDEER.*

The U. S. Revenue-Marine steamer *Bear*, Capt. M. A. Healy, commander, is under orders to cruise this summer in Bering Sea and the Arctic Ocean.

Permission has been granted by the Secretary of the Treasury to Dr. Sheldon Jackson to accompany the *Bear* on its cruise, and thus afford him an opportunity of visiting and inspecting the schools of northern and western Alaska.

These duties will necessarily take him close to the Siberian coast, where with but little extra labor he can procure the domesticated reindeer, with which a commencement can be made in stocking Alaska.

To accomplish this it is proposed that the *Bear* on its way northward should call near Cape Tchaplin or Walan, Siberia, and assist Dr. Jackson in purchasing from

SCHOOLHOUSE AND GROUP OF ESKIMOS, ST. LAWRENCE ISLAND

Photograph by S. J. Call, U. S. R. M.

150 to 300 head of domesticated reindeer and transporting them with their keepers over to the island of St. Lawrence.

If upon arrival off the coast of Siberia it is found that too much time will be consumed in negotiating for the reindeer, the captain may, if he deems best, place a lieutenant and a couple of men in camp on shore to conduct the negotiations for the reindeer, while the ship continues on her way, calling for them on her return.

St. Lawrence Island is about 100 by 20 miles in extent, and is well fitted as a central depot and base of operations for the future distribution of domesticated reindeer on the adjacent shores of Alaska. The island being only about 40 miles distant from the coast of Siberia, it will take but a few hours after the reindeer are loaded to transport them across.

It is proposed to hire a few of the Siberian men to accompany the reindeer and take charge of them under the supervision of the white teacher stationed upon the island. These Siberian herders will also teach the young men of Alaska the management of the animals.

---

## CAPT. M. A. HEALY, U. S. REVENUE MARINE, AUTHORIZED TO TRANSPORT REINDEER FROM SIBERIA.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
*Washington, D. C., May 18, 1891.*

SIR: Rev. Sheldon Jackson has been designated by the Bureau of Education, Department of the Interior, to procure domesticated reindeer from Siberia for the purpose of introducing the animals into Alaska, both to increase the present insufficient food supply for the natives and to create a new and profitable industry which will insure their self-support; and that Department has requested your cooperation both in the purchase and transportation of the reindeer. It is proposed, as will be seen from the inclosed copy of memorandum, that the steamer *Bear*, on its way northward, touch at certain points on the Siberian coast, and that you assist Dr. Jackson in purchasing from 150 to 300 domesticated reindeer, and transfer them with their keepers on the *Bear* to the island of St. Lawrence.

You are accordingly directed, if it can be done without interfering with your regular cruising under orders of this date, to proceed to the coast of Siberia and assist in carrying out the wishes of the Department of the Interior as expressed in the inclosed copies of correspondence upon the subject.

If considered necessary, you are authorized to leave an officer and two men on shore to conduct negotiations for the reindeer, while the vessel continues on her way north, calling for them upon your return.

Respectfully, yours,

O. L. SPAULDING,
*Assistant Secretary.*

Capt. M. A. HEALY,
*Commanding Revenue Steamer Bear, Seattle, Wash.*

U. S. REVENUE MARINE,
*Washington, D. C., May 20, 1891.*

MY DEAR CAPTAIN: * * * If you think desirable after talking the matter over with Dr. Sheldon Jackson, you can land a small party on Siberian shore to collect reindeer and have them ready for transportation to St. Lawrence Island on your return.

This scheme is carried out by the Interior Department under direction of Dr. Jackson, and you only assisting him with the work.

L. G. SHEPARD.

Capt. M. A. HEALY,
*U. S. Revenue Marine, Commanding the "Bear."*

## REPORT ON FOOD SUPPLY OF ARCTIC ALASKA.

By Messrs. Thornton and Lopp.

Cape Prince of Wales, Alaska, *July 25, 1891.*

Dear Sir: In reply to your inquiries as to the food supply at this point, we have to make the following statement of facts:

During the last year there have been several periods when the natives could not go hunting on account of unfavorable winds. When the wind blows off shore, the floating ice is carried away. At such times the hunters can't go out, because if they did they would be carried off on the floating ice to a miserable death from cold and starvation in the icy wilds of Bering Sea and the Arctic Ocean.

Within the last ten years 16 men, forced to tempt fate by the grim spectre of approaching starvation, have perished in this manner. During the past year 10 hunters were carried off in the same way; some were saved by a fortunate change in the wind, and the others happened to be seen by a party who dragged an umiak over the ice and rescued them.

During the periods we refer to, many of the natives were forced to sustain life by chewing pieces of old walrus hide, a substance about as palatable and nutritious as sole leather.

We consider it not at all improbable that an unusually long period of unfavorable weather would bring about great suffering and very probably numerous deaths from starvation.

Such a condition of affairs would place the lives and property of the missionaries, miners, and traders in this section of Alaska in imminent jeopardy.

Seals, whales, walrus, and fish constitute the main dependence of these Eskimo for food; and we have good reason to believe that all four are fast diminishing in numbers.

The canneries in southern Alaska have gone far toward destroying the salmon of these waters, as is very generally known. This diminishes the food supply of the seals and consequently their number. Many whaling vessels destroy considerable numbers of them; and, from what the natives tell us we are inclined to think they are being gradually driven away from these shores by the use of firearms.

It is a well-known fact that the number of whales in these waters has been very much diminished by the energetic pursuit of American whalers, and that those which remain have become more wary, and are every year going off further and further from the haunts of men. The natives tell us that the whale was one of their chief sources of

food in times past, and the large number of whalebones you see scattered about the village corroborates their testimony. But in the season of 1889 they secured only 3 small calves; in 1890, none; and in 1891, only 1, not much larger than a well-grown beluga.

Again, it is a well established fact that American vessels almost exterminated the walrus in their relentless pursuit of them some six years ago. Last spring we hunted walrus with the natives, and therefore know whereof we speak. The season virtually lasted only three days; after that only an occasional walrus was seen, and in all only 109 were killed to supply these 139 Eskimo with food and with skins for their umiaks. If this is repeated (and even worse may and will probably happen) we can not see how the people are to live. There are 51 umiaks in the village, and each umiak requires an average of at least 4 walrus hides to cover it. The only wood we have here—driftwood—can not be used for making boats, and without umiaks, by means of which to attend to their seal nets, to hunt seals, whales, and walruses, and to go on their other fishing and hunting expeditions, these people would surely perish.

The number of fish caught here in summer is so insignificant as not to be worth taking into consideration. Nine-tenths of the people are forced to go up the coast 150 or 200 miles in order to catch fish enough to live through the summer and have a few for the beginning of winter. As canneries multiply fish will probably become still scarcer.

There is no adequate supply of land animals for food. Not a single Arctic bear has been seen for years. Only 19 Polar bears were killed last year, and that was an unusually large number; only 5 white foxes, 3 red foxes, 1 mink, and about 45 ptarmigan were killed during the whole year; and the number of ducks secured is a mere trifle.

The destitution from which these people have suffered may be inferred from the fact that they eat even gulls, loons, and the blood and entrails of seals, walrus, and other game, often raw. Nothing is wasted, and no people are more industrious in the pursuit of a livelihood.

In view of these facts, we hail with delight the proposed scheme for introducing domesticated reindeer here—a plan that we often discussed between ourselves last winter and had intended to recommend if you had not anticipated us.

Both from what we have seen ourselves (on our exploring tour, undertaken for the purpose) and from what the natives tell us, we feel sure that ample pasturage for a large herd can be found within a radius of 5 or 6 miles from the village. The tundra will support them admirably in summer and the sheltered mountain valleys in winter.

The old men told us that wild reindeer were abundant here in their youth. That fact alone would seem to be conclusive as to the question of the fitness of this locality for the purpose contemplated. It is to be noted, too, that all the information we have given, as coming from the natives, was given to us before we said anything to them about the

HOISTING A WALRUS ON THE DECK OF STEAMSHIP "BEAR."
Photograph by A. L. Broadbent, U. S. R. M.

proposed plan, thus precluding the possibility of interested testimony. Lately we have told them about the plan, and they seem very much pleased with the idea. They say they will do everything they can to promote the success of the undertaking.

Reindeer will be exceedingly useful here, not only as a food supply, but also as beasts of burden. Now wood is hauled on dog sleds 6 or 7 miles, and hunters and traders use the same means of locomotion. Reindeer would be stronger and swifter, and the animal food now necessary to support the dogs could be utilized by the people.

As American whalers have killed off the whales and walrus, the natural support of this people, for the benefit of Americans at large, it would seem that the American Government owes them some compensation. The proposed step is merely one of decency and justice then, not an act of mere charity.

The surest way of attaching them to our Government, and so of making them good and useful citizens, is to show them that the American people are not merely powerful, but just and merciful as well.

If something of the kind you suggest is not done, and that speedily, there are only two alternatives, we think—either to let the people starve, at the risk of sacrificing the lives of innocent white men, as we have indicated, and to the lasting shame and disgrace of our country, or to make them pensioners upon the bounty of the Government, to the utter destruction of their self respect and manliness, and to the sorrow of all who have their true interests at heart.

The latter course would not only be a cruelly mistaken policy (as shown by the history of the Indian tribes in the States), but would involve the expenditure of millions of dollars, where thousands would accomplish the purpose better if spent in time.

Very respectfully, yours,

R. M. Thornton.
W. T. Lopp.

Rev. Sheldon Jackson, D. D.,
*Washington, D. C.*

---

## DR. SHELDON JACKSON COMMENDED TO THE RUSSIAN OFFICIALS IN SIBERIA.

[Translation.]

Russian Legation,
*Washington, D. C., April 20, 1892.*

The bearer of this, Dr. Sheldon Jackson, is commissioned by the U. S. Government to our northern coast of the Pacific Ocean and to Kamchatka for the purchase of reindeer and for the transportation of these animals to the northern part of the American domain. Of

this the minister of the interior has notified the general governor of the Amoor province.

I most respectfully request of the authority concerned not to refuse Dr. Jackson friendly reception and any practicable cooperation.

STRUVE, *Envoy.*

---

## TRANSPORTATION FOR GENERAL AGENT ON CUTTER BEAR.

TREASURY DEPARTMENT,
*Washington, D. C., March 11, 1893.*

SIR: In reply to your letter of the first instant, I have the honor to state that Dr. Sheldon Jackson, general agent of education in Alaska, will be permitted to take passage on the revenue steamer *Bear* on her cruise to Alaska the present season, and the commanding officer of that vessel will be instructed to convey Dr. Jackson to such points on the west coast of Alaska as he may desire to visit when it can be done without interfering with the regular duties of the cutter.

Respectfully, yours,

J. G. CARLISLE,
*Secretary.*

The SECRETARY OF THE INTERIOR.

---

## REVENUE CUTTER BEAR AUTHORIZED TO TRANSPORT REINDEER.

TREASURY DEPARTMENT,
*Washington, D. C., April 4, 1893.*

SIR: I have the honor to acknowledge the receipt of your letter, dated the 24th ultimo, inclosing, with favorable recommendation, copy of a communication from the Commissioner of Education, in which the request is made that Dr. Sheldon Jackson be again permitted to take passage on the revenue-steamer *Bear* for the purpose of procuring reindeer in Siberia and transporting them into Alaska, and that the commanding officer of that vessel be authorized to assist Dr. Jackson in his work and to allow him all the time needful for the purpose.

In reply, I have respectfully to state that Capt. Healy, commanding the steamer *Bear*, will be instructed the present season, as heretofore, to render Dr. Jackson all possible assistance in procuring the reindeer and transporting them to the localities required.

In this connection I have to state that to properly perform this additional service will require at least 100 tons of steaming coal extra of the quantity otherwise needed for the vessel's use. This coal will cost

$15 per ton at Port Clarence, and information is desired as to whether the cost of this extra fuel will be paid by the Department of the Interior.

Respectfully, yours,

O. L. SPAULDING,
*Acting Secretary.*

The SECRETARY OF THE INTERIOR.

---

## LETTER OF INSTRUCTIONS TO THE SUPERINTENDENT OF THE REINDEER HERD.

PORT CLARENCE,
*U. S. Revenue-Marine Steamer Bear, July 4, 1893.*

SIR: I have the honor to inform you that, in response to a suggestion of Capt. M. A. Healy and in consideration of the best interests of the reindeer station, Messrs. Bruce and Gibson will retire from the service and you are placed in charge.

You will need an assistant, and as none can now be procured from the States, I have requested Capt. Healy, as a favor, that he let you have a good man from a crew.

You will need four paid herders, two being on watch at a time. There is now one Eskimo who has been in service with his wife (the wife has cooked for the herders) the past year. He seems faithful and had better be continued.

It is possible Capt. Healy may secure three experienced Siberian herders. If so, you will have sufficient force. But what he fails to secure from Siberia you can supply on our side. Be very careful whom you employ on our side as an inexperienced hand. The herders are to be fed and clothed and housed, also furnished with tobacco or its equivalent at Government expense. The Siberian herders and the experienced Eskimo one will receive, in addition to the above, $50 worth of barter goods at the end of the year, and the inexperienced ones $30 worth. If they prefer it, they can be paid a portion of the above from time to time as they may need it, only that at the end of the year the amount received shall not exceed the total amount allowed.

When food is plenty and cheap, you will purchase, with the supplies at the station, such oil, meat, dried fish, skins, etc., as are needed at the station. You are also authorized to purchase wood from the natives.

In addition to the paid herders, it is desired that you take into the station a number of wide-awake young men to learn the management of deer. They will be fed, clothed, and housed at Government expense. If they have been faithful to their duties and shown aptitude in learning for one full year at the station you are authorized to allow them two deer, which can be marked with their brand, but must be contin-

ued in the general herd. At the end of the second year you can give them five more. I think it will be well to encourage them to remain with the herd for three or four years, when they will have sufficient deer so that two or three of the herders, by combining their holdings, can start a new herd.

If, after a fair trial of a few months, a young man is lazy, indifferent, or dull, you had better send him away from the station and give his place to a more promising one. There is a constant sifting process going on among white men, and the same process is equally needful among the natives.

I would like the first herders, especially, to be picked men, the ablest and best among their people, as that class will alone secure the best results from the introduction of the deer.

Please read carefully the first letter of instructions given last year and printed in the appendix to my report, which you have.

For the present fiscal year, closing June 30, 1894, you can use the Government fuel and kerosene oil.

You will keep a kind, but firm discipline, and take special pains to care for the Siberian herders, and make them so like the work that they shall become weaned away from Siberia and led to settle down permanently in Alaska.

Very respectfully, yours,

SHELDON JACKSON,
*U. S. General Agent of Education in Alaska.*

Mr. W. T. LOPP,
*Cape Prince of Wales.*

CAPE PRINCE OF WALES NATIVES ON "BEAR." ESKIMO RECEPTION DAY, REVENUE-MARINE STEAMER "BEAR."

## REPORT OF PROGRESS BY W. T. LOPP, SUPERINTENDENT.

TELLER REINDEER STATION,
*Port Clarence, Alaska, August 26, 1892.*

DEAR SIR: I inclose the reports which you kindly loaned me.

Since I last wrote you we have completed the "lean-to" or shed and have the herders living in there. We are just completing a small office in the hall, where we will keep all our trade goods and do all our trading over a half-door. In a few days we will have a log house (15 by 12) finished. I think we will let Charley and Mary live in it. Charley is anxious to get a herd of deer, and is willing to stay and trust to your generosity for his reward. Of course, I can only promise him 2 deer for the first year, but he thinks you will give him more, as you promised him more last year, and I hope you will give him more than 2 if he stays here and does his duty. Charley is almost as good as a white man to have around—in some ways much better.

Moses, from the Yukon, will remain here. It is no wonder he would not stay last spring. They put him in that filthy herders' dug-out, which was already overcrowded, to sleep, and he refused to stay, preferring, he says, an Eskimo house to the one the United States had built. We have 13 herders now. We have 3 on night watch and 2 on day watch, and use all the extra men on the work. The *Bear's* carpenter built us a scow and dingy, both of which have been very useful already. We made three trips after drift logs for our log cabin and for fuel. That carpenter is a good workman and worked very hard during the summer. Mackey did very well.

Very truly,

W. T. LOPP.

DR. SHELDON JACKSON,
*U. S. General Agent of Education in Alaska.*

---

TELLER REINDEER STATION,
*Port Clarence, Alaska, August 31, 1893.*

DEAR SIR: I inclose you our order for supplies for next year and also orders for herders' supplies and for trade goods. I suppose it will be most convenient to order of Mr. Foster. I have no choice in the matter, but I want everything first class. The list for herders' supplies and trade goods express about the proportionate amounts of the various supplies, so you will have to decide as to the quantity, etc. The teachers' supplies are for superintendent and wife and one assistant, only, so, if more whites are employed, additional supplies must be sent. Since making out the trade list I have received quite a quantity of ammunition from the *Bear* and Mrs. Thornton, but you can see how much it amounts to from the receipt and order which will be forwarded to you, and can decide how much we will need.

I am ordering no trade goods for myself. If we remain here another year we would prefer to take what little stuff we want out of the reindeer goods, and then you could take it out of our salaries. This would save us the trouble of having separate shipping bills, keeping the goods separate, etc.

Since Mr. Thornton's death it has occurred to me that it would simplify matters if the station owned all the furniture. As it is here, the station owns part and we own part.

I suppose the board bill of the men who worked here all summer we will settle next year when we settle about the supplies.

I have consulted Capt. M. A. Healy in regard to the most important steps I have taken this summer. I have purchased some arms, ammunition, and supplies of Mrs. Thornton; also from the American Missionary Association.

We have found that cement, lime, and clay make very good mortar for log houses We have just completed one for Charley (12 by 15). We hope to build several more. We want to make some seines and nets next year. So we hope you will have an opportunity to investigate and send us the proper kind of twine. I think it would be well to send up more lumber for storehouses, flooring, and lining of log houses. As for building a new dwelling house next year, I don't think it necessary unless you can afford to put more people here.

I have furnished the *Bear's* surgeon with a copy of our drug bill, and he says if you will write to him he will tell you what drugs will be needed for next year. Part of our mail this last year was lost on the *Jennie,* so we would like if the *Bear* would bring most of it. If you would write me per steam whalers in February and March, I might be able to hear from you a few days before the *Bear* arrives.

Grubin is doing very well.

Very truly, yours,

W. T. LOPP.

DR. SHELDON JACKSON,
*U. S. General Agent of Education in Alaska.*

P. S.—If you can get lumber shipped up here as reasonably as you did last, I think it would be well to send up about the same amount of lumber which you sent last year, with the exception of the 1 by 4 stuff, and instead of 4-inch flooring send 6-inch.

I have bought some clothing of Mrs. Thornton for Mr. Grubin and have given her an order on you.

---

TELLER REINDEER STATION,
*Port Clarence, Alaska, August 31, 1893.*

DEAR SIR: Now that Mr. Thornton has been murdered at the instigation of a bad boy—hoodlum—and pilfering thief, it seems evident that we need, too, a rude native police force organized by the U. S. revenue-marine cutter at all these Eskimo settlements. These police should be liberally paid and be appointed by and responsible to the cutter. Hoodlum characters like Ti talk should be punished by these police or held prisoner until the cutter arrives. And the cutter should have authority delegated to try and punish all offenders. I hope you can influence the Interior Department to ask the Treasury Department to confer such power and authority on its cutter in these waters. If Capt. Healy were instructed accordingly I am sure he would take pleasure in providing and organizing such a police force, as he has had so much experience with these natives that with the help of the teachers he would make a success of it.

I hope you will do everything in your power to bring about such a state of affairs.

Nan oo gok, the man who was put in irons and was shipped on the *Silver Wave,* is here, and is reported to have made threats against the station. The natives have promised to send him to King's Island.

If the native police had been employed, as they were the year previous, I think Mr. Thornton would not have been murdered by the pilferers.

We have appointed four police here.

I write you hastily.

Very truly, yours,

W. T. LOPP.

DR. SHELDON JACKSON,
*U. S. General Agent of Education in Alaska.*

TELLER REINDEER STATION,
*Port Clarence, Alaska, September 2, 1893.*

DEAR SIR: I have been so rushed with the work this summer that I have not given the deer, their management, distribution, etc., as much thought as I had expected. I herded, however, one night with Jack, one of the shepherd dogs you left us. There are about 345 in the herd now, and I suppose next year we will have about 500 with the increase. I think it would be a good plan to give or loan Charley and three or four more herders about 20 deer each, so that they could put them together and have a herd of about 75 or 100 deer. They could keep them south or north of here, and at the end of two or three years could pay back to the station here the number of deer which they had received. I think it important to do something like this next year. One real example of a man like Charley at the head of a herd of deer would do much towards educating the people up to the advantages of becoming deermen. I hope you will consider this matter.

I have often thought that if you were removed from office by this administration, the success of the reindeer scheme might be imperiled, and I hope, if such a thing should happen, you could have the management of the station turned over to Capt. Healy. He is very much interested in the deer and people, has spent a great deal of time and labor trying to further the scheme, and, I suppose, has had such an extensive experience that he could give the station a thorough overhauling every year.

Capt. Wagner traded 5 gallons of liquor on the other side this year for deer.

Those who herded here last year and have two deer in the herd have offered to sell them to Charley (who is now a herder) for four deerskins each.

If they have trouble in finding a man for the cape, and you can get a good man for the station here, Mrs. Lopp and I will go back to the cape. But, of course, since we are settled here, we would prefer to stay here another year. I sincerely hope a good conscientious minister can be found to come up to the cape next year.

Probably I have not made clear to you our proposed plan of distribution.

I think while natives are learning to herd they should be clothed and fed and paid a small salary, from $1 to $4 per month, according to age, efficiency, etc.; and at the end of one year, in some cases two, loan four or five of your best herders 20 or 30 deers each. Let them put them together and keep them on a new range of pasture 10 or 20 miles from here, the superintendent of this station giving them general direction as to the management, slaughtering, etc. At the end of two or three years their herd will have increased so much that they can pay back to the Government what they have borrowed, and will have become so thoroughly acquainted with the best methods of breeding, managing, restrictions in slaughtering, etc., that they can be trusted to assume the whole management of their herd. By this method fifteen or twenty herders could be trained here every year and could be sent out with two or three new herds of deer, which the Government would loan them until they could pay them back, on condition, of course, that the Government superintend and regulate the management of the herd as long as they have deer in it.

Of course the original policy may be the best, but at this writing it occurs to me that it is easier for the Government to control what it owns than what Eskimos own. I write you this so that you can consider it and it will not be new to you next year.

Very truly, yours,

W. T. LOPP.

REV. SHELDON JACKSON, D. D.,
*General Agent for Education in Alaska.*

## CAPT. M. A. HEALY, U. S. REVENUE MARINE, REPORTS ILLEGAL TRAFFIC IN REINDEER.

REVENUE-MARINE STEAMER BEAR,
*Port Clarence, Alaska, July 5, 1893.*

DEAR DOCTOR: You had no sooner left than I learned some facts that I would like you to know. Mr. Bruce's indecision seems to have been for a purpose, for all the time he has been telling the whaling captains that he would not remain at the station another year. I learn to-night that after we left here he bought from Capt. Newth, for 150 mink skins, about $125 worth of trade goods, among which were four breech-loading rifles and ammunition. He put these on board the schooner *Berwick* and chartered her for $200 to go to the other side and bring over twelve deer for him. He has no right to trade arms there for his private account under the consent of the Russian Government, for this vessel to trade them for reindeer, and from his position as superintendent of the station only brings the project into disrepute. As a private individual he has a right to trade legitimately, but the presence of competition only enhances the price for us, and for him to engage in such trade while holding his position, without saying anything about it, is underhanded and dishonorable.

I do not tell you these things to worry you, but that you will have a better regulation and hold on these people in the future.

Very respectfully,

M. A. HEALY,
*Captain, U. S. Revenue Marine.*

REV. SHELDON JACKSON, D. D.,
*Unalaska, Alaska.*

---

## AFFAIRS AT THE TELLER REINDEER STATION.

STEAMER BEAR,
*East Cape, Siberia, August 25, 1893.*

MY DEAR DOCTOR: To keep good my promise to write you of our cruise, I take it up where I left off, at Port Clarence. As I wrote you, the captain was very much put out that Mr. Bruce should have sent Capt. Wagner for deer without speaking of it. He did not like his underhand way or his assumption. Consequently, he left orders with Mr. White not to permit the deer to be landed. Mr. Bruce had scarcely left the harbor when Capt. Haynes arrived with the deer, and you can imagine his surprise when informed that the deer could not be landed without passing through the custom-house. They were like so many elephants on his hands. He could not return them to Siberia, on account of the ice, and could not land them on our shore. They were eating him out of house and home. So he made application to land them on St. Lawrence Island. The captain, not wishing to appear unduly severe, permitted him to do so, provided he would enter them at the custom-house at Unalaska or Kadiak. He heartily wished he had never seen Mr. Bruce or the deer. The captain's disgust and expressions I leave you to imagine when he learned upon arrival at Enchowan that whisky had been part of the barter paid; and the Indians were told the deer were purchased for him, and that the schooner was Capt. Healy's also. He could not make the Indians believe to the contrary. The result was, when he talked deer the Indians talked whisky, and so it was all the way along the coast. They would say, "You like deer, me like whisky. No whisky me, no deer you." After

AN ESKIMO SCHOOLGIRL, POINT BARROW, ALASKA. TAKING LESSONS IN COOKING.

Photograph by J. W. Kelly.

running a week or more without being able to get near the shore, on account of the ice, we left for Point Barrow, stopping at the different places along the coast up to that point. At Point Hope Dr. Driggs came on board. He looked much better in person than the previous years; he impressed us favorably. He remained on board with us until late at night. The captain was much pleased with him and his conversation.

Arriving at Point Barrow we found things at the Refuge House in a better condition than last year. The 75,000 feet of lumber were landed all along the beach at Point Barrow. They could not land it at one place on account of ice, which was quite heavy on the beach. But the captain doubts if there will be much of it there next year, as no one seemed to take the trouble to pile it up during the two weeks we were there. The captain allowed Dr. Beaupre to live for this year in the station, but gave him the little house, in which Mary lived, to hold the school in. Mr. Kelley was well and very much improved in looks from last year. You remember he looked quite miserable. Although the ice was in large cakes around us, yet we were quite safe so long as the wind lasted in the northeasterly direction. The pack was not far from us. As you can imagine, we had to keep constant watch of its movements. They told us the northeast wind had been blowing constantly for thirty-three days, and was still the same when we left. The *Jennie Wand* went ashore, and the captain got her off without any damage.

This is the vessel that took up Mr. Brower's supplies. After his lumber was landed Mr. Brower had two stone houses built for his goods, while we were there. He had only the natives to help him. He and Mr. Kelley employ nearly all (if not all) the natives between them. Hearing there were four vessels in a critical condition in the ice, we remained some ten days longer to render them assistance if necessary. At the end of that time the ice opened a little, and they came out. Everybody thought they were doomed. Seeing them safely out, we left and returned to the Siberian coast. Meantime, whisky-trading for deer had reached Cape Serdze, and with exactly the same results. The captain calculates that Mr. Bruce's action has lost him a hundred deer or more, besides augmenting the expense. We went to Cape Serdze, as it was pretty clear of ice. During this clear interval on the north side the Indians held off in hopes of compelling the captain to sell whisky. As the ice began to come in and they saw it useless to wait for whisky, they began to bargain. Tourassie offered 100 deer, which the captain accepted, but before they could be taken off, the ice drove the vessel out to sea. The old fellow was on board for four days before he made a move to trade. Milka was the same, holding off to the last. However, we got 26 deer from him. The captain held on so long, notwithstanding the ice coming in, that we lost our propeller in forcing our way out of the ice. Once out of the ice, we steered for Kocodillin's place. Here was the same, "No whisky, no deer." Here the ice came in, as last year, only much heavier. Still we hung on and procured 19 deer. More were beyond. So Mr. Jarvis was dispatched to get them as quickly as possible, but before the deer were caught he was hurried on board.

Great fields of ice, owing to a northwest gale, began to crowd into the bay. We were in a few hours completely hemmed in. Then began the ramming and pushing to get out. I thought a dozen times we would lose another propeller. But everybody was on deck with ice poles to keep it clear, if possible, of the propeller. It was indeed a hard fight, and we were all relieved when we reached clear water. In all the trips you have made, you never saw such heavy ice and never saw such a struggle to get out of it. We were no sooner out than there came a dense fog. During the night a heavy northerly gale came up and we were obliged to heave to, with no chance to land anywhere, and no food for the deer. The captain decided to go to Port Clarence, which we reached safely through wind and fog the next day. They were all glad to see us. Our long absence made them begin to fear we were lost, for when we left we told them we should return in a week, and we did not return for six weeks. We found everybody well. Mr. Mayo died a month previous,

and is buried across the creek, opposite the dugout, which, by the way, caved in before he died and nearly caught him. The carpenter and two men we left here during the six weeks made great improvement in and about the station. I will try to describe the house. The room made for Mr. Bruce last year is the same, only with double floor and walls. The hall is the width, taking in the outside door. They filled in with earth under the entire flooring of the house, even with the rafters. A double floor has been laid, with tar paper between, throughout the entire length and width of the house, from the hall to the other end of the house. The two front rooms are used by Mrs. Lopp, her private room and a kitchen off it. By the side of this is the assistant's room and a dark room used for immediate stores. From this a ladder runs up to the attic. This, too, has a double floor, and the whole house has double sides, with tar paper between. They are sadly in want of double windows. They built a "lean-to" the whole length of the house. On one end is a very large storeroom, with double water-closets off that. The rest is one long room for the herders. They have a stove, a table, knives, forks, everything to make their table look nice and civilized. There are two benches for seats around it.

I saw them at supper and they seemed perfectly happy and contented. Along the side of the wall are built some eight or ten bunks. With these they are particularly happy. The news of this improvement had reached the Siberian side by the time we went back, and the old herders wanted to return. The new herder is so pleased he says next year he will bring his wife and deer over and take up his residence at Port Clarence. Charley and Mary are to work for the Lopps. Charley has built a log house near the Lopps. I wish you could see it. It is fine. Mr. Lopp, in fixing the attic of the house, found 27 pairs of deer horns. The baby is doing well, and is very cute. Mary adopted a little baby boy 5 months old whose mother was going to kill it. She carries it on her back, and takes the best of care of the little thing. It is the third she has saved from death. She is truly a Christian soul, and a good example for others to follow. She says there were several killed last winter. This would, indeed, be a truly Christian missionary work, to save these little ones from death at the hands of their mothers and others. We have had a most disagreeable summer, such dense and heavy fogs to contend with, and the cold intense. Truly your good angel called you home in time to escape the most disagreeble part of the cruise, for, up to the present time, August 25, we have had but one pleasant day. Do you remember the crazy man we took on board at Port Clarence? Well, he went to Mr. Wadsworth the other day and said, "Mr. Tineye, will you give me a glass of whisky?" We have still another on board whom they are obliged to keep watch of, and at night he is chained to his bed, for he is bent on self-destruction. The doctor had him on deck the other day for an airing. Crazy No. 1 came up and said, "Hello, pard. You work this racket better than me, for I have to work and you don't. How do you manage it? You know you are no more crazy than I am. You are only lazy. Go to work, and you will get $30 per month." The man to whom he was talking was perfectly oblivious of what he was saying, but it amused us much.

On August 27 we stopped at Cape Prince of Wales to take Mr. and Mrs. Thornton down, should they have concluded to leave. We were surprised to find no one came off to meet us, and the village seemed deserted of Indians. We remained all night, the captain giving orders that Mr. Jarvis and Mr. White should go ashore early in the morning and find out where Mr. and Mrs. Thornton were. They came off in a short time with two notes from Mrs. Thornton, and told the captain that Mr. Thornton was killed on the 19th of August by three of their scholars, and that his body still lay in the house unburied. The natives took his wife to Port Clarence. So the captain had a coffin made and sent Mr. Jarvis ashore to bury him, with Mr. Jacobs, who read prayers over him. They killed him in the darkest part of the night with a whale gun. They knocked at the door and he stepped from his bedroom into the

hall, and asked what they wanted, and received the shot through the door. He walked into his room, shut the door, and said "I am shot," and fell to the floor dead. His poor wife jumped from the bed frantic, afraid to go out and call anybody. The next morning, when the Indians heard of it, the one living in the house nearest to her came up to the house with others and said they would protect her and take her to Port Clarence. The Indians then turned out and got two of the Indians, marched them up to the house, shot them and threw their bodies out near the flagstaff for the dogs to eat. The third man had gone up the coast, but he is doomed, for they will kill him, and they told Mr. Lopp they would bring his body so as to let him see that they had killed him, thereby testifying that they had no part in killing Mr. Thornton and did not sanction it.

Mrs. Thornton is now on board, on her way to her father's home in Maine. She tells us the Indians were very kind to her; yet she did not feel secure until she was with the Lopps. She passed the night alone after it happened, and the natives all fled to the hills when they saw the cutter. She said, on her way to Port Clarence the natives saw the vessel and she had hard work to keep them in the canoe. She promised them she would tell the captain how good they were to her, and would ask him to spare them and their families. She said they would not take a thing from her, not even matches, which they so much prize, to show her that they did not give her protection for pay. They would not come on board.

After burying Mr. Thornton we went to Port Clarence, took on board Mrs. Thornton and Mr. Lopp, and returned to Cape Prince of Wales to let her pack up her things. While they were packing, the captain had made a large cross for a headboard and a footboard and placed them at the head and foot of the grave. It took Mrs. Thornton until 8 o'clock to get the things packed and placed on board. Mr. Lopp suggested that, as the Indians were afraid to come on board, the captain go ashore for a talk with the natives. He sent runners to inform the people he wished them to assemble on the beach, and they came as fast as their legs could carry them. The captain then spoke of Mr. Thornton's death, and told them Mrs. Thornton and Mr. Lopp had asked him to spare them, and, as they had taken the law in their own hands and killed the murderers and had befriended Mrs. Thornton, he felt satisfied they knew nothing of the murderous intent, etc. Had they not avenged Mr. Thornton's death, he said he would have done so, and would not have left a single one of their people alive, and that he would have followed them north and south, over mountains and sea until everyone of them was killed or afraid to say they were of Cape Prince of Wales. Mr. Lopp says it is the first time in his experience with them that he ever noticed any demonstration. They were more than eager to please the captain, and exclaimed frequently and vehemently that they would hunt for and kill the man who, although not active in Mr. Thornton's death, had fled. The captain did not wish to second this death-hunt, but, as Mr. Lopp thought otherwise, he said nothing. The fear of the cutter's reeking revenge on the village caused the swift and sure killing of the murderers. The Indians had not slept from the time of the murder. The captain told them he would place the houses in their care until some one came up to take possession of them in the spring, and that he would then see if they were sincere. They all gladly assumed the charge and were very grateful that they and their families were spared. Mrs. Thornton will write you when she returns to her home. She bears up bravely. I find her a very nice, sensible woman, and I like her much. Poor soul! I cannot tell the dreadful agony she went through until she found herself in the hands of friends.

We are now at St. Michael, on our way to Unalaska (September 7). We have taken on board from here 37 miners, one of the Catholic brothers, and Mr. Wilson, so that you see in the cabin we are full. The miners say that Mr. Healy is a fine man and will do well. He has labored under many difficulties, but is coming out all right. The captain had a talk with Mr. Lopp about the distribution of deer to

the natives. He does not think it feasible to deal out one or two to the different natives, and told Mr. Lopp he thought it much better to give 10 of the best and most reliable natives 10 deer apiece and let them form a little colony by themselves and herd them. In a few years, he thought, it would prove flourishing. He told Mr. Lopp to write you about the matter, and if you can not understand Mr. Lopp, the captain will be in San Francisco the middle of November, and you can write him for what information you want.

I will leave this open until we leave Unalaska, so if anything of interest happens I can add it.

I trust you found your good family are well, and everything moving to your entire satisfaction.

Sincerely yours,

MARY J. HEALY.

Rev. SHELDON JACKSON, D. D.

---

STEAMER BEAR,

*Unalaska, Alaska, September 21, 1893.*

DEAR DOCTOR: I inclose you a reindeer account, which explains all the transactions for reindeer, etc., since you left the vessel.

The number secured represents a fair season's work, and as they are nearly all bearing females it is an especially good lot for breeding.

The ice bothered us considerably. Fifty-one more deer were actually bargained for at Cape Serdze, but the ice drove us out before they could be secured.

During the latter part of August the ice was down to East Cape and nothing could be done there. Mr. Bruce's trading expedition and its whisky also interfered greatly with our trade. Every man we bought from asked for whisky and delayed trading until we convinced them that they would get none from the vessel. In the time spent at Cape Serdze we might have secured at least 100 deer before the ice came down but for the delay caused by the whisky.

A number of the natives along the coast wanted me to fit them out to trade for me during the winter, and I selected "Peter," at South Head, as the most likely man. He is a deer man, having a herd of his own, which he drives back every year. If he is successful and has the deer at St. Lawrence Bay it will be great saving in time and coal.

Two more Siberian herders were taken to Port Clarence, one from South Head and one from Cape Serdze.

The carpenter and a man I left at the station completely remodeled and fixed the buildings, so now they have a comfortable, warm house. An addition was put on the back, and the natives given very good quarters, with bunks, tables, etc. They now take an interest in the place, and it is more popular than ever before.

I talked over with Mr. Lopp the scheme to distribute deer among the people, and let him write it to you as superintendent of the station.

In three years the normal increase from the herd that is already here will be more than can be handled, and something will have to be done to distribute them.

I have a proposition from an interpreter, who was so well pleased with the country as a grazing country that he moved his family and herd over to the vicinity of Port Clarence and settled there. If a few of the Tchuktchis could be settled in this way in the country they would do much to popularize the deer.

You have heard of Mr. Thornton's death by this time. Mr. Lopp was to have written you of it. Comments by me are unnecessary, as the situation must be so well understood by you.

I have on board a boy from East Cape for an interpreter in the future.

CEMETERY OF NATIVE VILLAGE, ST. MICHAEL, ALASKA.
Photograph by A. L. Broadbent, U. S. R. M.

Mrs. Healy sends her regards. We are all well. The fleet is about to depart, and, so far as I understand, I am to remain here alone. I hope you are well and that I shall have a letter from you on your arrival in San Francisco.

Very truly yours,

M. A. Healy,
*Captain, U. S. Revenue Marine.*

Rev. Sheldon Jackson,
*Bureau of Education, Washington, D. C.*

---

## MEMORANDA OF REINDEER IN NORWAY.

Paris, France, *January 26, 1894.*

Dear Dr. Jackson: I meant to have a letter awaiting you on your return to Washington in October, but a number of circumstances (one of them la grippe) has prevented me from writing. I remained almost four months in Norway, but for only a small portion of that time was I where I could see the reindeer. I stayed for five weeks at a small hotel on the borders of the Hardanger Vidda, the great mountain plateau above the Hardanger Fjord in Norway. The Norwegian with whom I boarded was a third owner of a herd of 1,000 reindeer, but the deer ranged over the Vidda and were a two days' difficult journey (on foot or in the saddle) from the house.

I was therefore unable to see much of the deer or make measurements and sketches which I had planned to make.

While at this place, however, I took one day's excursion almost to the center of the Vidda, and at that time I saw 800 of the deer for a short time. I also collected some interesting facts about the deer from the Garm (the man at whose house I stayed), and from others who were familiar with the habits of the deer.

I hope this winter to write a short article (illustrated) upon my trip across the Vidda. This will contain some facts about the semidomesticated reindeer, and other animals on the Vidda. As this article, however, may never see type it seems best to write you some of the main facts which I have collected about the deer. I am sorry they must reach you at such a late date.

These deer (or rather their ancestors) were first brought down from Lapland by a Norwegian farmer living near Thelemarken, on the southern side of the Vidda, more than twelve years ago. But at that time there were many wolves in that district, and the herds suffered much from their depredations, so much so that there was little profit in the keeping of the deer. Now the wolves have almost disappeared, and many farmers are beginning to keep small herds, which find pasturage all the year round on the Vidda. Usually 3 or 4 farmers combine, and own the herds together, each man sending some one to tend the herd for a week at a time. In this way, much time and labor is saved, as a herd of 500 deer can be cared for almost as easily as one of 50.

Grass or hay is scarce in Norway, from the comparatively limited area of land suitable for its cultivation. The raising of deer, therefore, is growing in favor with the Norwegians whose land is situated near the mountain uplands, for the deer require no winter feeding, but live all the year round on the lichens, moss, and short alpine grasses which grow upon the Arctic lands which are too barren for some sheep pasturage.

The Hardanger Vidda I found most interesting. It slopes gradually from the borders to the center. At the border nearest to the Fjord the elevation is perhaps 2,500 feet. At that latitude, of course, the altitude implies almost an Arctic, certainly a "Boreale" growth of vegetation. Here, for a long day's journey, one finds the "saeter" country, the land where the saeters or summer dairies of the Fjord farmers are situated. The cows come up from the valley about the 20th of June, and in favorable seasons remain until the middle of September. At long distances apart one finds the wretched little huts of turf and stones where the saeter girls

live and work all summer long. Here the grass is short, but very sweet and good; the cattle thrive, and the milk is of a far better quality than that of the valley. The sheep, too, range in the same district, but usually they penetrate farther into the Vidda and feed on higher, rougher ground. Then comes the interior of the Vidda, a most desolate, wild region, too far for the location of saeters, and where only the reindeer find good pasturage.

The deer will feed wherever the cattle do. They like the same grasses, and there is no antagonism between the herds, but on the whole the deer prefer the higher ranges, where the moss and lichens and a little alpine plant, called in Norsk "rensdyblakke" or "reindeer-leaf," grows profusely.

There are about 3,000 wild reindeer still upon the Vidda. The presence of these wild bands causes some confusion and loss to the owners of the tame animals. Often the tame deer are killed by mistake by hunters, and sometimes members of the tame herd stray away and join the wild deer. When only a few deer are seen at a time it is difficult to discern the difference between the two herds; but if a large herd is seen, one can tell at a glance whether it is tame or wild. The wild deer present a uniformly brown appearance, while in a herd of tame deer there are many whitish or piebald animals. The tame deer all have ear marks, also, but these can be distinguished only at short range.

The "open season" for hunting the wild deer is now only from August 15 to September 15. There are about 34,000 tame deer in southern Norway. Most of these are scattered throughout the mountains of the Saeterdal district, but about 7,000 live on the plateaus of the Viddas and surrounding districts of Hallingdal, Thelemarken, Numedal, and Sogne.

The deer of these districts are not milked as are those of Finland and Lapland. The profit comes from the sale of meat and skins, and occasionally the horns to tourists. Much of the meat is sent to Bergen, Christiana, and Christiansand and exported to France, Holland, and Germany, and some to England.

France affords a ready market for the skins, which are much used for gloves, and there is always a home demand for the skins. Winter clothes and sleeping bags are also made from the skins, with the hair left on, and any peasant who hunts or travels on the Vidda has his Arctic outfit. Later, when I crossed the entire length of the Vidda, with a guide and pony, I slept at night in an Arctic sleeping bag, and found it most comfortable.

The farmers who live in the Fjords near usually own a certain amount of saeter or dairy land, but the tracts of land where their reindeer herds feed are taxed annually, according to the district occupied and the size of the herd.

The herders usually have some little rough shelter, where they stay, but often they are obliged to sleep in the "open."

The deer are restless creatures and often wander too far from the hut for him to return at night. The herder does not try to keep his flock together as closely as one would do with sheep. If he keeps them within his land, and sees that no strays join the wild herds, he is satisfied. He is aided by a small dog, which is called a reindeer dog, and which tends the sheep also. I saw a good many dogs on and near the Vidda, and they all looked much alike. It seems that a Laplander introduced, some years ago, a true Laplander dog from the North, and from him are descended the Vidda deer dogs. They look much like a small Huskey dog, small, rather short, dark in color, with erect ears, long hair, and wolf-like faces. I do not think the Herdanger an especially good place for the purchase of dogs. There are not enough of them, and the prices would probably be high. I think that Trondjhem, Norway, might be a better place. Though not in Lapland, there are herds of deer not far away, and the connection with Tromsoe, where there are many herds, is easily made by steamer. Probably the U. S. consul there could supply desired information. I found that one had to pay about $10 apiece (perhaps $12) in the Herdanger district for reindeer dogs. I see no reason why they would not bear the ocean trip well, and thrive in Alaska. I doubt if the true Eskimo dogs could be trained as deer dogs,

though they might be, if taken as puppies and reared with the true deer dogs. I should think any hardy western sheep dog would serve quite well in Alaska. I think they could bear the climate. I know that an English mastiff dog thrived well at Fort Simpson, on the Mackenzie, where the cold is quite as severe as in Alaska, much severer than in southern and western Alaska.

One of the enemies, or, one might say, the only enemy of the deer on the Vidda is the wolverine or "glutton," which kills the little fawns often. It sometimes will spring upon a doe from behind a rock as she passes, but as a rule it does not attack the grown deer. The sheep, being more defenseless, suffer more.

The deer are not very tame. I called them up to me by offering them salt and singing the little tune by which their herdsmen call them, but they were very timid. I took some measurements of one deer, a rather small doe, but found it out of the question to try it with the larger bucks. It required all the strength of two strong men to hold the doe a few moments, and four men would have been necessary to subdue the largest animals. So I made no sketch, as I had hoped to do.

The doe measured 46½ inches from the ground to the shoulder. A girth of 40 inches. A little more than 63 inches from the tip of the tail to the base of the horns. A good-sized deer weighs about 240 pounds, but the largest bucks sometimes attain the weight of 600 pounds.

I think the largest Siberian deer can hardly exceed this. The wild deer, on the whole, are not such fine animals. In two years a tame deer will attain a growth which it takes four years for a wild deer to equal. The principal reason for this is the life of tranquility and safety which the former live. The latter are fearful and live in dread of a surprise, and this really retards their growth. Aside from this reason, the Herdanger Vidda is especially favorable for the growth of the deer of both kinds. The domesticated deer, brought down from Lapland, increase rapidly in weight on the Vidda, as the climate is better and the food more abundant than in Lapland.

The Vidda must resemble very closely the Barren Grounds of Canada. I noticed the same vegetation that one finds at Fort Rae on the north shore of Great Slave Lake; the same flora (though more limited in species); the same mosses and lichens, only that on the Vidda one is quite above the true tree limit, only the dwarf birch growing a few inches from the ground, and the tiny Arctic willows being found.

The Norwegian deer seem very closely allied to the Barren Grounds deer, much more so than to the woodland caribou.

I have written necessarily very hurriedly, and have no doubt omitted much that might be of interest about the subject. I shall be very glad to give you any more information I have if you will question me further.

I have written and illustrated two articles on my trip to the Mackenzie delta. These may have already appeared in Outing, published on Fifth avenue, New York. It should appear about this time. These articles are very unsatisfactory to me. They were written (while I was visiting friends) too hurriedly for their own good. However, I hope you may see them, as I think you may find some information in them which may be of interest to you.

I have, of course, many notes taken on my trip, which I may make some use of later. In a hasty trip like mine, of course, I could not do much real study about the country, but I tried to have my facts reliable, so far as they have gone.

I found two new species of flowers, and the British Museum has published a pamphlet about my insects, among which are two new species.

I should be very glad to have some future report about your work in Alaska. Any letter addressed to me here will reach me.

Hoping to hear from you, I am,

Yours very sincerely,

ELIZABETH TAYLOR,
Care of the American Woman's Club, No. 4 rue de Chevreuse (Luxembourg), Paris, France.

DR. SHELDON JACKSON,
*Washington, D. C.*


176°

# MEMORANDA

ON

# LAPPS AND REINDEER

BY

## SCANDINAVIANS IN THE UNITED STATES.

# MAP OF PORT CLARENCE REINDEER STATION AND VICINITY ALASKA

Scale 1:700 000

*Prepared for U.S. Bureau of Education by the U.S. Coast and Geodetic Survey to accompany Reindeer Report by Sheldon Jackson D.D. U.S. General Agent of Education in Alaska, 1894*

ARCTIC OCEAN

EASTERN SIBERIA

BERING STRAIT

BERING SEA

GULF OF ANADYR

NORTON SOUND

KOTZEBUE SOUND

Herds of Domesticated Reindeer

Herds of Domesticated Reindeer

C. Onman

Burney I.

C. Shelagin

Inreelen
Pinlekef
Inrayatsop
Inglunnuk
Nagteskef
Gemmi
Ajapka
Ulanic

C. Serdze

Village

Kotzebue Bay

Tchan
Chutpa
Utan
Watan
East Cape
Village

Arctic Circle

Shushmarefsky

C. Krusenstern

Shesha-legamute
Kowak R.
Village
Blossom
Hotham Inlet
Selawik L.
Selawik R.
C. Espenberg
Bay of Good Hope
Eschscholtz B.
Kowagamute
Buckland R.
Kowak R.

Diomede Ids.
Ratmanof I.
Imachuktoo Vlg
Krusenstern I
Imaguktoo Village
Fairway Rk

C. Prince of Wales
King-e-gan Vlg.
Reindeer Station
Tarpkarzomete Vlg.
Poolazermete Vlg.
Sinarmete Vlg.
Teller Reindeer Station
Kuzermete Vlg.
Port Clarence
C. Spencer
Nookmete Vlg.
Sinargomete Vlg.
Katon River

Ouk-u-vak Village
King I.

C. Rodney
Village
Chitoshkuk
Oomikhlagowik
Ayakherwik
Imakhtegakhtuk
Okpaktalik
Sledge I.
Aziak Village
C. Nome
Tupka-ak
Chikkuk
Igniuk
Reindeer Station
Cyclone Peak
C. Darby
Atnuk

Ogowrunangak
Kivalina
Kivik R.
Inglulik R.
Village
Kivik
Village
Oonarkitolik
Villages
Norton Bay
C. Denbigh
Besboro I.
Shaktolik
Ulukuk
Egowik
Iktigalik

Egg I.
Stuart I.
St. Michaels I.
St. Michaels

C. Romanof
Aphoon Mouth
Yukon River
Pastol B.

Holy Cross Bay
Village
Mechken I.

C. Bering
Nigchigan Pt
C. Aggen
Kayne Tribe
Yerkes Tribe
Kayne I.
Wain
Ittygrane I.
Am. Tel. Exp. Camp
Cheveruk R.
Village
Three Providence
Village
Indian Pt.
Nukanok
Fitzgerald B.
C. Chukotski

C. Chibukak
Village
St. Lawrence I.
S.W. Cape
N.E. Cape
S.E. Cape

Nalegomiut
Imaklimiut
C. Kreugin
Kiguin
Mechygme B
Mechumen
St. Lawrence B
Villages
C. Nuniamo
Chaimun

Statute Miles
10 5 0 20 30 40 50 60 70 80 90 100

178° 177° 176° 175° 174° 173° 172° 171° 170° West from Greenwich 169° 168° 167° 166° 165° 164° 163° 162° 161°

66° 65° 63°

THE NORRIS PETERS CO., PHOTO-LITHO WASHINGTON, D. C.

# NOTES ON THE LAPPS AND THE REINDEER.

By Rasmus B. Anderson.

*Author of "Norse Folk-lore Stories," "Norse Mythology," "Viking Tales," etc.*

---

Madison, Wis., *February 17, 1894.*

The name of the Lapps is supposed to be derived from the word "lappan," to flit or move from place to place. They belong to the Ugro-Finnic race and have inhabited the northern part of Norway, Sweden, and Russia from time immemorial. The race includes less than 30,000 people, there being in Norway, in 1875, 19,269; in Sweden in 1880, 6,404; and at the same time about 3,000 in Finland and Russia. The large majority of the Lapps now live in permanent homes and subsist on fishing and stock-raising near the sea, on the west coast of Norway, where the climate is greatly modified by the gulf stream. But there are a couple of thousand of the race, the so-called "Mountain" Lapps, who are nomadic and get their living exclusively from the semidomesticated reindeer, making their homes in the interior on the mountain plateaus, where neither other human beings nor other domestic animals could exist.

These notes refer only to the nomadic mountain Lapps, of whom you are now about to transport a few families as reindeer-herders to Alaska. These dusky people are able to suffer hardships and privations which it would be utterly impossible for the white man to endure.

The Lapp lives with his reindeer day and night, getting his entire subsistence from the animal. Every part of the reindeer, young or old, living or dead, is utilized. The blood, meat, entrails, and marrow are all eaten; the skin is made into shoes and clothing, and the sinews are spun into thread for sewing; the antlers and bones are made into all kinds of household utensils and into ornaments. What can not be converted into food or clothing, utensils and ornaments, is boiled into soup for the dogs or manufactured into glue. By the sale of skins, meat, cheese, and glue the Lapp is able to buy cloth, salt, coffee, and tobacco.

It seems incredible, but is nevertheless a fact, that the Lapp frequently sleeps upon the mountain plateaus, with no other covering than the snow and the clothes he wears. He digs a hole in the snow, and in the morning, when he awakes, he sometimes has to crawl out of a couple of feet of snow, which has fallen while he slept the sleep of the just. It is his reindeer clothing that keeps him warm, and makes such life possible even for his hardy nature.

The Lapp and his family employ well nigh all their time in taking care of the herd, partly in protecting it from wolves, and partly in seeing that it is increased as rapidly as possible; for the size of the herd determines his wealth. A family can live comfortably on 300 reindeer, and if they own 1,000, they are considered to be in good circumstances. One Lapp family in Norway owns a herd of 6,000 reindeer, and some years ago there was a herd of 10,000 belonging to one man, but by his death this large herd had to be divided. A reindeer herd of 2,000 is expected to increase by 200 to 250 fawns annually.

In Norway the Lapps spend the winters far in the interior, on the mountain plains near Kautokeino and Karasjok, where the snow is not so deep as it is nearer the coast, and hence it is easier for the reindeer to get at the moss and other lichens.

The Lapps are more or less superstitious in many things, but they are not afraid either in the dark or in snow-storms. They rarely, if ever, succumb to the weather, and they never lose their bearings in the most blinding blizzard. They are perfectly cool and self-possessed in the midst of every danger.

The post is carried by Lapps and reindeer overland in Finmarken from Alten to Vadsö, Kautokeino, Karasjok, and other points in the Arctics, and it rarely fails to arrive on schedule time.

The Lapp tent, 12 to 14 feet in diameter, consists in summer of a canvas, while the winter tent is made of matting woven of rags and lined with reindeer skins. The fire-place is made of three or four stones laid on the floor in the center of the tent, and a hole in the top of this coniform wigwam serves as chimney. On the fire-place the coffee-pot is constantly boiling.

One Lapp and one dog can take care of 500 reindeer, but, as the herd has to be watched both day and night, the twenty-four hours are usually divided into three watches of eight hours each, and thus three persons (say, husband, wife, and a child or servant) are required for the constant care of a herd of 500.

While the Lapp is not herding or taking his sleep he is busy making various articles of horn or bone, repairing his pulk, harness, making shoes (snow-shoes), etc. The wife takes her turn in herding, and she does the most of the sewing, while the cooking is done by the men and women alike.

A Lapp owning 800 reindeer and upwards keeps one or more servants, whose wages consist in a certain number of reindeer cows with calf. These animals are regularly marked on their ears and sides as belonging to the servants, and remain their property. When the servant marries the reindeer belonging to the boy and the girl are united and form the nucleus of a new herd.

The chief food of the Lapps is reindeer meat, with a small amount of bread. They are fond of tobacco, and consume an enormous amount of coffee. They also like intoxicating drinks, but the laws of Norway and Sweden make it extremely difficult for them to get liquor. They were converted to Christianity about 200 years ago, and belong to the Lutheran Church, which is the state religion of Norway. While their knowledge of Christianity is very superficial, they cling with tenacity to the outward forms, and are very particular to have their children properly baptized and confirmed; the marriage knot tied by the priest, and the dead buried in consecrated ground. The children attend school during the winter months, in Norway, at Kautokeino and Karasjok, where they are taught to read and learn the rudiments of Christianity. As a rule, the Lapps are thrifty. Besides their herds, they usually own a considerable amount of money deposited in banks. As they have but little occasion to spend money, these deposits increase from year to year, and when the head of a family dies, there frequently are thousands of dollars to be divided among the heirs.

In moral character, the Lapps rank much higher than might be expected, considering their education and circumstances. They are greedy and stingy, but at the same time hospitable to strangers. They are a remarkably chaste people, adultery being scarcely known among them. Mixed marriages are extremely rare, it being almost impossible to persuade a Lappish man or woman to marry a white person. Their chief weakness is their passion for stealing reindeer, and many Lapps are annually sent to prison for this crime. They are expert traders and buy and sell for cash.

In the summer the reindeer steers are made to carry on their backs the tents, household utensils, the food, and the children that are too small to walk, while in winter they draw the boat-shaped pulks, in which the Lapp seats himself, with his baggage. Much experience is required to keep one's balance while riding in the pulk, up and down hill, over stock and stone. The reindeer will travel with ease 100 miles per day and draw a load of 300 pounds. The Lapp is also an expert on ski, a kind of long, wooden snow-shoes, used throughout Norway and Sweden.

GROUP OF ESKIMO MEN CLAD IN KAMILEKAS (RAIN-PROOF COATS).

Photograph by S. J. Call, U. S. R. M

Much of the property not required in summer is left at the winter quarters. The Lapps return from their summer wandering in August, and early in October is slaughtering time.

The reindeer cows drop their fawns about the middle of May of each year, and at this time great care is necessary to keep them separated from the bulls. At this time the herd needs the closest attention both day and night, and both men and women have all they can do. This particular work would be utterly impossible without the aid of dogs. Every Lapp owns his dog and frequently is more attached to this highly developed canine animal than to any human being.

The cows begin to be milked twice a day soon after they have dropped their fawns, and for this purpose they are brought near the tent.

I was informed by you that in Eastern Siberia the reindeer cow is milked by sucking the teats like a babe and spitting the milk into a bowl or cup. The Lapps in Norway and Sweden are more civilized in their mode of milking. There the man catches the cow by the antlers with a lasso, throws her down and holds her while the woman milks her with her fingers. In a large herd this involves a great deal of work, for several hours morning and evening. A cow gives from three to six cubic inches of milk at a milking. The milk is nearly as thick as the best cream and is very rich in cheese. Mixed with one-third or one half water, with the addition of vinegar or some other acid, it makes a good drink, though the Lapps make cheese of the most of it. In connection with the care of the reindeer in Alaska it may be worth while considering whether the milk-producing quality of the reindeer cow can not be greatly improved so as make her yield a larger quantity of milk. It would also seem that she could be trained to be milked like other cows. The former object may possibly be gained by an improved system of feeding and the latter by getting the fawns used to the ordinary method of milking.

The semidomesticated reindeer (*cervus tarandus*) of Lapland are smaller in size than the wild ones. Of the semidomesticated reindeer in Norway there are again two kinds, one called the forest the other the mountain reindeer, the latter being smaller than the former.

If the reindeer had not been domesticated, the larger part of the country north of the arctic circle in Europe and Asia would be utterly uninhabitable. The reindeer serves as a substitute for the horse, the cow, the sheep, and the goat. None of these domestic animals can exist in those arctic regions. The reindeer will endure any amount of cold, and its broad and deeply-cleft hoofs are admirably adapted for traveling over the frozen snow. It lives on young shoots of willow and birch in the summer, and in winter it feeds on reindeer moss and other lichens, scraping away the snow with its hoofs.

With the efforts you are now making, a great industry will doubtless be developed in Alaska giving sustenance and employment to thousands of inhabitants, and in addition thereto, developing a large reindeer product for export. The reindeer will in time make those large moss-grown tracts of Alaska a suitable abode for civilized man. The rich fields of reindeer moss will supply food for millions of reindeer, and these will in time give sustenance to thousands of human beings. The enterprise deserves the most cordial support of the Government.

RASMUS B. ANDERSON.

To Dr. SHELDON JACKSON.

---

PHILADELPHIA, PA., *June 27, 1893.*

DEAR SIR: Referring to your favor of the 8th ultimo, and my reply to the same dated the 31st ultimo, I herewith inclose a synopsis of the Norwegian book. I have limited the translation to the paragraphs describing the reindeer, their habits, peculiarities, etc., (in Norway), presuming that it would be of less interest for your

intended work to give a description of the Laplanders. Should you, however, desire this I am at your service. I have made the translation as short as possible, omitting all I considered not to the point—suitable to your purpose.

I should like to go to Alaska at some future time. Could you tell me the expenses?

It is a common belief of experts in Norway that the reindeer will decrease; that in some future time there will be lack of reindeer-moss, as the plants grow too slowly, in thirty to fifty years where it has been entirely consumed, and in twenty years in places where only the tops and fine plants have been eaten by the reindeer which are more fastidious where there is abundance.

What do you think of an experiment to get Laplanders over from Norway, transplanting them in Alaska? It is only a suggestion. I know too little of Alaska to be able to use arguments, nor could I tell at the moment the modus operandi for an experiment of that kind.

Yours, respectfully,

N. Width.

Rev. Sheldon Jackson.

---

THE LAPLANDERS AND THEIR REINDEER.

By N. Width.

The Laplanders belong to the Greenland or Polar race; are small, but with sinewy bodies; their skin is grayish-yellow, their faces broad, the eyes small, dark brown, and oblong; the hair is plaited, the cheekbones protruding, the lips very thin, the mouth very broad, and the chin very sharp; their beard is very thin and spare.

The language is related to the Finlandish (spoken in Finland, now a Russian province), but of not so harmonious a character. They are good-natured, pacific, and very honest. They are exceedingly courageous and enduring, and are accustomed to dangers and inclement weather from their very infancy. I remember from my boyhood that the women carried their infants in a box on the back (the box, however, was well provided with reindeer skin); these boxes were fastened on poles, and when the women entered the stores in the town for shopping, the poles were stuck in the snow and the babies left there for hours, their small faces exposed to the cold and the wind.

A sad drawback is the love of the Laplanders for brandy, in which both sexes indulge very freely; both sexes are passionate smokers.

They are not considered as subjects of Norway and Sweden, pay no taxes, are not obliged to do military service; the Christian faith was introduced among them some three hundred or four hundred years ago, but with no great success; many of them are still adhering to their old gods (represented by wooden images), and they are suspected by the Scandinavian population (who are very superstitious in the northern provinces) to be sorcerers, particularly the old women, of whom we boys stood in great awe; this may be partially justified by their extreme ugliness; they are regular "witches of Endor."

They are divided into four classes; mountain Laplanders, forest Laplanders, fishermen, and agriculturists; by nature they are all nomads, but if they lose their reindeer by beasts of prey, starvation, etc., they try other employments, always, however, with the object in view to save some money, buy some reindeer, and resume their mountain life.

They are good hunters and keen shots, not afraid of encounters with the bears and the wolves.

On the mountains they live in tents made of reindeer skins; some of them build small huts of earth and brushwood. For their meats and other supplies they build small stores standing on high poles, so as not to be reached by the wild beasts.

REINDEER.

The reindeer is to the Laplander "omne in omnibus;" it gives him food, clothes; of the horns he makes spoons and other articles for the household; the tendons serve as sewing thread, etc.

The reindeer lives (at least in Norway and Sweden) only in the mountains. During the summer months it lives chiefly on grass and leaves; in the winter months on "reindeer moss," which it seeks under the snow.

At times it happens that the reindeer can not get at the moss; for instance, when there suddenly comes a severe cold after some rainy or mild days, and the ice or snow crust is too hard to be removed (which the deer does with its hoofs). Lots of reindeer then die of starvation. No other food can then be procured, except the moss on the trees, which the Laplanders cut down for this purpose. Another drawback is generally connected with scarcity of food; the animals generally keeping together, watched by their owners and the dogs, try to find food at a distance and spread themselves, getting out of control, and become an easy prey to the wolves and other beasts.

The Lapland dog is a very clever, faithful animal; without their assistance the reindeer owners would be quite helpless and never be able to keep their herds together. There are Laplanders owning from 1,000 to 2,000 reindeer. As a boy, I sometimes joined parties from my native town to visit the Laplanders and see their herds. When we arrived we saw nothing but a couple of tents and snow; the Laplanders said some words to the dogs, which disappeared; in ten to fifteen minutes we had before our eyes from 600 to 800 reindeer. One might almost think they had been conjured from the underground regions.

The reindeer meat, eaten fresh, gives a delicious steak, considered as a perfect treat, but it must have a little "haut gôut" as other game. It is mostly dried and smoked, rather tender. The smoked reindeer tongues are considered delicious and sell at a good price throughout Europe. The cows give a very fat, uncommonly strong milk (they say in Norway "it bites on the tongue"), but very little, I do not think more than a teacup per day, perhaps less.

Toward the winter the Laplanders leave the high mountains and move downward nearer the wood regions (where the trees commence to grow); then he makes his provisions for the winter, kills a certain number of reindeer; what he does not keep for his own use he brings down to the villages and towns, exchanging it for brandy, coffee, and some small luxuries.

I think a reindeer runs faster than a horse. It is in driving not governed by two reins, but only by a single one, fastened on the head, and thrown at the right or left to guide the reindeer. The sleighs are very primitive, a kind of board, with flat bottoms on a very broad heel, fastened to the chest of the animal with a leather belt, between the forelegs. The Laplander does not use a whip, but a short stick, having an iron ring in which are fixed several other rings. If the animal is wanted to quicken its pace the driver shakes the stick, making the rings rattle. As the sleighs are very apt to capsize, the drivers are furnished with very thick clothes and fastened to the sleigh.

The reindeer is very shy, but I do not think it is very good-natured. When irritated or angered it attacks its driver as the nearest person in view, kicking with the forelegs; but the Laplander does not mind this diversion much; his thick dress protects him from being seriously hurt, if he takes good care of his head and face, and the animal, for some unknown reason prefers to attack the chest or the back of his adversary. In earnest, deadly combat it uses its horns. I have also been told that the horns get loose every year and then new ones grow out again. The glue made of reindeer horns is considered the best existing.

The Laplanders are of course skillful "ski" runners. The "ski" is a kind of very long snowshoe, illustrated and described in Leslie's Monthly of February 2. With

these on the Laplander can run over soft, new snow without sinking in. He is then a dangerous enemy to the wolves.

Although in my boyhood the Laplanders were frequent, almost daily visitors in our small town, I never heard it mentioned that they were punished for thefts or other transgressions. It is true some thirty years ago there was, in the heart of Lapland, a riot in which two persons (the one a clergyman) were murdered, but this was caused by religious fanaticism and superstition, and can not serve as a characteristic.

### REINDEER IN NORWAY.

The reindeer (*cervus Tarandus*) is domesticated with the Siberian tribes and with the Laplanders. Its olfactory organs are strongly developed and it smells the mosses lying beneath the snow, and off which it is feeding itself in the winter. It is a very lively but rather shy animal. It lives in herds and in polygamy. The raking season is in September and October, during which period the males are continually fighting each other; for this reason there are few males in the herd of tame reindeer. Usually only one calf is born; the does are pregnant in thirty weeks, or about eight months. A reindeer has a height of about 3½ feet and a length of about 5½ feet; in the wild state it attains an age of 28 to 30 years; when domesticated, 15 to 16 years; but it is usually slaughtered at an age of 8 to 9 years.

The reindeer is not very strong; it can carry on its back only 40 to 50 pounds, and draw a weight of 200 to 250 pounds. It is a very fast runner, but never used for riding.

It never transpires through the skin, but probably through the tongue, which is hanging far out of the mouth when the animal is running.

The cow is milked once per day, giving only about one-half pint of milk, which in the fall is kept in dried reindeer stomachs; in the winter in open vessels, frozen. This milk is chiefly used to the coffee and for making cheese; it has a very sharp taste.

All the domestic reindeer have the mark of the proprietor in the ear. In the winter they are kept near the tents; the dogs drive them together in flocks and they are caught by means of lassos. It is rather hard work to watch the animals in the winter and to keep the wolves away, which frequently frighten the reindeer, spreading them to all parts of the windrase; this gives the Laplanders many sleepless nights. In the summer they are mostly left to themselves, and in the fall they are gathered again and driven toward the places where they get their winter food. The reindeer prefers to run against the wind, probably as the hair then lies more tight to the body.

The reindeer provides its owner with clothing, food, bedclothes, shoes, gloves, harness, even with twine (of sinews), and various household articles, made from the horns—knife handles, spoons, boxes, pipe bowls, etc.

The reindeer seeks the coast in the summer, to enjoy the cool air, and chiefly on the reason of the hornets (*vestrus*), which are seldom found on the east side and from which they are suffering terribly.

There are two species of hornets, the reindeer hornet (*vestrus Tarandi*), which lays its eggs on the back of the animals, where they slide down between the hairs to the skin and are hatched through the animal warmth; the masks (larvæ) are growing themselves through the skin, remaining there the winter over, creeping out in July the following year, being then full grown. Each mask forms a tumor in the back of the reindeer, and the constant itching causes matter (pus), which troubles the animal greatly. The other hornet is the nose hornet (*vestrus nasalis*), which lays its eggs in the nostrils, where the hatching is favored by the breathing and the moist, warm air. The larva creeps up in the nose and then in the frontal bone, which has a cavity under the root of the horns and is connected with the passage of the nose through an aperture on each side answering to each nostril. In this cavity it is

REINDEER ON AMAKNAK ISLAND, ALASKA.

covered with a thin and very sensitive slimy membrane, which serves as food to the larvæ; when full grown they creep back into the nose, causing the animal to sneeze and throw out the larvæ.

The hornets attack with preference the younger animals, having a thinner skin, which gives the larva easier admittance.

These larvæ impair very much the value of the hides which sometimes look as if riddled with bullets.

The tumors, caused by the larvæ, are so tender that the mere touch brings the animal down on its knees to avoid being touched.

The smallest number of reindeer considered sufficient to a Lapland family is 150 (100 cows and 50 oxen), but even this small number requires a large area (of territory), as the reindeer lives only off the moss and the moss can not be cultivated and gathered, it must be eaten where it grows.

It is fortunate for the Laplanders that the plains where they live can never be inhabited by farming people or utilized in any other way; they need not fear being driven away (as the Indians in the United States).

The reindeer moss (*Cladonia rangiferinas*) is grayish white when dried, but with a greenish shade when moist; it takes its nourishment chiefly from the air, avidly absorbing the humidity, which makes it swell and become elastic; in a dry condition, however, it is very brittle (crisp). It contains flour and gelatin stuff, which makes it nourishing to the reindeer and cattle. It grows very slow; when eaten by the reindeer which only eat the tops and fine parts of the plants, the moss requires about twenty years to regain full size. If taken up with the roots it will hardly grow again.

On the Scandinar Peninsula the Laplanders are never interfered with by the population; they are not in the way, occupying only districts which can not be utilized by the Scandinavians, and the trade in reindeer skins and meat is a very lucrative one to the merchants in the neighboring towns. The governments in Sweden and Norway have declared that the land required for the existence of the Laplanders in the mountains, should not be sold. It was also agreed upon in a compromise in the year 1751 between Sweden and Norway, that in the event of war the movements of the Laplanders from the one country to the other should not be interfered with. I believe that the same compromise was made with Russia too, the same year, but canceled in the year 1852 by the Russian Government, forbidding the Norwegian Laplanders to use the reindeer fields in Russian Finland, whereupon the Norwegian Government in 1854 passed a law forbidding the Russian (Finland) Laplanders to use the Norway fields.

---

PHILADELPHIA, PA., *April 11, 1893.*

DEAR SIR. I am sorry to say I have not received answer from the partner of my cousin from Toomro. My brother wrote me yesterday he had talked with a mountain Lapp about dogs and got the fellow information.

It is so difficult to train a dog satisfactorily that a Lapp will not sell a good one under 100 to 125 kroner (1 krone equals about 28 cents,) and that the Lapps do not like to sell them; whereas common Lapp dogs (not trained on reindeer, but used as common domestic animals) can be had for 25 to 35 kroner.

He further says that wounds caused by insects, and also lung diseases, are not unfrequent.

If you can take a moment's leisure, please read the inclosed letter from a friend in Seattle, an uncommonly clever and enterprising gentleman, who would like to work for the colonization of Alaska. I am also interested, as in Fairhaven there has been organized a fishing company, backed by four millionaires, with the purpose of sending vessels to Alaska for catching herring, cod, etc., and I have been invited

to take a position in the business. I declined to come just now, but perhaps I shall go to the State of Washington next fall, if I do not make arrangements for residing here as agent for the Eastern States. What do you think of an essay to recommend Alaska for Scandinavian emigrants, and would you kindly give me some points about this matter? Perhaps I could use them for my friend, if not for myself. If the fishing trade could be in the future conducted on an exclusive scale there, Alaska might be a favorable plan for my countrymen of the fishing trade.

Kindly return inclosed letter.

Respectfully, yours,

N. WIDTH.

Rev. SHELDON JACKSON,
*Washington.*

## CIRCULAR LETTER SENT TO THE SCANDINAVIAN NEWSPAPERS IN THE UNITED STATES.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
*Washington, D. C., December 14, 1893.*

*To the Editor:*

As you have access to the Scandinavian and Lapland population in the United States and Canada you will confer a favor by publishing the following notice in your journal.

Very respectfully, yours,

SHELDON JACKSON,
*U. S. General Agent of Education in Alaska.*

---

*MEN WANTED TO TAKE CHARGE OF REINDEER IN ALASKA.*

In the introduction of domesticated reindeer into northern Alaska a few men are wanted who have had practical experience in the herding and management of reindeer.

If any reader knows of a Laplander in the United States or Canada who has been brought up to the care of reindeer, and who would like to go to Alaska to take charge of reindeer, please communicate his name and address to Dr. Sheldon Jackson, Bureau of Education, Washington, D. C. Also state condition of health, age, experience with reindeer, and wages asked.

---

NO. 1205 PINE STREET, DES MOINES, IOWA,
*December 18, 1893.*

DEAR SIR: Your favor of the 13th addressed to Chicago came into my hands only to-day.

I am very sorry I have not been able to do anything for you. In Chicago I tried to see the Norwegian manager of the Laplanders' exhibition at the Fair, but I never succeeded. I wrote him then a letter, and mentioned this in a letter to you at Washington, presuming you would visit Chicago on your return from Alaska.

For reasons earlier mentioned the Laplanders are afraid of going to America, and they do not like to part with their trained dogs.

You may, however, write direct to Consul Conrad Holmboe, 6 Langes G, Christiania. When we met in Philadelphia last June he promised to use his influence, but wrote me later from Tromsöe that he had not succeeded there.

A steerage trip to New York from a Norway port costs probably some $25, and from Lapland to such port from $6 to $10, thus, making the cost from Lapland to New York about $31 to $35. I have no opinion about the wages a Laplander would eventually demand; perhaps $8 to $10 a week. If anything would tempt him it would be the prospect of saving some money with which he might return to his mountains. The Laplanders at the Fair have probably returned long ago. I believe I read something about their doing so in a Chicago paper some four or five weeks since.

It would scarcely be of any use to advertise in Scandinavian papers. You might, however, write to the U. S. consuls in Bergen and Christiania, Norway; Stockholm, Sweden; also Helsingfors, Finland. They would give you information and good advice.

Write also to Mr. Axel J. Schwabe, Drantheim, Norway. There are many Laplander families living east of that town, and he may be able to do something through his business friends up in the country.

Perhaps the best thing would be to make an arrangement with some party about going to Norway and making contract with some Laplanders, taking them and their dogs with him to New York. Northern Sweden and Finland can not be visited in the winter before May or June, owing to the ice, but the Norway coast is open all the year round. It would, however, be rather an expensive trip, costing about $300.

I would like very much to see your new report on reindeer in Alaska.

Yours, truly,

N. WIDTH.

Dr. SHELDON JACKSON,
*Washington, D. C.*

---

EVERETT, WASH., *December 24, 1893.*

YOUR HONOR: I am informed that men are wanted as overseers for imported reindeer in Alaska, am therefor so free as to offer you my service.

I am 44 years of age and have a family; have been in the United States twelve years. By birth I am a Norwegian, born in the northern part of Norway, 70° north, and used to a cold climate. At my birthplace there are hundreds of thousands of reindeer, and I am very well acquainted with the Lapps and their language, as well as Russian, used in Alaska among Eskimo and natives. From a child I have been used to training and driving reindeer, of which my father had a good many, and I myself had some for several years in the old country. If you wish to have any Lapps for the service I can easily get them or go to Norway for them, my brother, Johan Dahl Vadso, Norway, being a merchant and having a large trade with the Lapps there. Dogs I can get enough of in Alaska from the natives. It is necessary to have 4 men at least to watch the reindeer, 2 in daytime and 2 in the night, as the deer are very easily frightened and scattered if they are not closely watched, the wolves being their worst enemies and after them especially in the nighttime. The men ought to have good Winchester rifles, as the wolves sometimes will attack men when hungry. In summer time (July), when the calves are born, they have to be taken care of more than usual the first three months after the birth. The reindeer grow rather slowly, as they are not full grown before 5 years of age. They live until 14 to 16 years of age. The training for driving commences when they are 2 to 3 years old, but they are never put to hard labor before they are 5 years old, as they can very easily be spoiled by careless treatment, being of such a tender and slender construction. The females are seldom trained. A reindeer when trained can travel with 200 pounds burden on the sleigh on unbroken snow without any road 50 to 70 miles a day. Sometimes I have traveled 100 miles, when in a hurry, and with good, trained deer, but they need to be fed every four hours.

In summer time there is a kind of mosquitoes that lay their worms or eggs in the hide or skin of the deer. This bothers the reindeer a good deal and makes the skin of less value. To avoid this trouble we always drove the deer to the seashore, as the fresh, salt-water breeze would keep the flies away. It is necessary also to change the feeding place for the reindeer every year (for large herds of 7,000 to 10,000 deer), as the moss which grows on dry land or high plateaus and mountains grows very slowly, so slowly that it takes several years to grow again after being eaten off by the reindeer. The moss eaten by deer grows up to 7 to 8 inches high. The top

SWEDISH EVANGELICAL MISSION, YAKUTAT, ALASKA.

of that moss is of a nice, yellow color, and the deer, being very particular, eats only the top of this moss.

I shall be glad to undertake the position as overseer for reindeer in Alaska, having been used to their habits and wants, and am interested in reindeer and animals in general. I think I can obtain 3 or 4 Lapps from my brother in Norway for about $40 to $50 a month, without board; but am afraid I would have to go and bring them over, as the mountain Lapps, or reindeer Lapps, understand only their own language, and will never be able to learn the English language before they have been years here, and hardly then. Of course you would have to pay their fare from Norway to Alaska. I shall be glad to give you any information regarding this subject, so far as my knowledge goes, whether you accept my proposition or not. So far as I am concerned I am in good health, do not use liquor or tobacco, am a sailor, having my papers as pilot and engineer, and am willing to undertake the position for $1,200 a year, with free transportation of baggage, provisions, person, and family to destination. I refer to the Norwegian minister of this place, Rev. Carl Hael; also to Mr. Swarthout, president of First National Bank of Everett, Wash.

With my best respects, I am,

Your humble servant,

REGNOR DAHL.

Dr. SHELDON JACKSON,
*Washington, D. C.:*

---

SEATTLE, WASH., *December 24, 1893.*

Dr. SHELDON JACKSON,
*Bureau of Education, Washington, D. C.:*

In reply to your advertisement in various journals concerning reindeer-keepers in Alaska I take the liberty to give you the following information: I am born in Finmarken, Norway, and have lived in Vadsöe, and along or about the Varanger-Fiord (rivers) for circa forty years; have owned, kept, and traveled with reindeer over the mountains to Haparanda and Trana-elven (small river), over Karasjak to Altin, and through the Russian Lapmarken, etc., for about thirty to forty winters. I speak Laplandish, Finnish, and the Russian language, besides German, and I have been in America for about eight years. In this city I have resided for four years as professional druggist and doctor (physician). I am 63 years of age and was recently married here (three years ago). I am married the second time and am in perfect health, and would like to take the position at $1,200, or $100 per month, if things are arranged as they should be in order to accomplish the great object on hand. I have often thought how it could be possible to propagate the reindeer without the proper supervision by night and day with men and trained dogs, as reindeer always attract wolves.

From the end of the Varanger River over to the Tana River there has been erected a fence of circa 20 English miles in length and 12 feet in height for the purpose of protecting the reindeer from the month of May to October; thus all the herds have to be gathered together upon the Varanger fields, which are 200 miles in length and 100 miles in breadth, and then and there the animals are cared for by the owners, and the calves are marked. The fence I had reconstructed some fifteen to sixteen years ago at the expense of the Government, it costing about $800. In the care of reindeer one has also to be on the outlook for sickness and death, and nothing should be done halfways. The young calves have to be looked after in respect to their teeth (they have to be crushed, in a particular way, by biting stones, etc.), otherwise the animals will be too wild.

My advice therefore is, if I should be appointed, that a few genuine Fjeldfinner (Laplanders), perhaps 4, should be secured from among my acquaintances from Finmark (Sweden). It would be best to have some who are married, and they

must bring some dogs along. These men can be had for $200 a year; accordingly $800 for 4 Laplanders, besides traveling expenses for them and family and for the dogs. There ought to be 6 dogs of both sexes, since the reindeer have to be closely watched by night and day with dogs and rifles.

Hereto must be added winter tents and cooking utensils, skies (skates), pulkhas (a Laplander's traveling sleighs), and traveling implements and tools, which they can manufacture themselves. The State ought to provide for shooting utensils, food, and clothing to begin with. I have a son in Finmark, 26 years of age, who is married and the father of 6 children, with a strong physique like I, who perhaps would like to take the place if you think that I am too old, which I hardly think is the case. In Everett I have a brother, 18 years younger than I, who perhaps also will write to you in this matter. I do not consider it necessary to cross the ocean in order to make arrangements for the undertaking. I have relations and friends who can attend to the affairs. However, if you, in order to save time, wish me to go I will undertake the journey, with the conditions that my salary be paid from the date of my departure, besides the traveling expenses. I take a great interest in the matter, as it is so highly important a question for Alaska, and whether you engage me or not as superintendent or director I shall always be at your service with good and practical advice, if you desire so.

Very respectfully, yours,

H. Dahl, Dr.

---

Red Wing, Minn., *December 28, 1893.*

Dr. Sheldon Jackson,

*Bureau of Education:*

In the Swedish Minneapolis Weckoblad I read the following advertisement:

* * * * * * *

From the pure standpoint of civilization and in the interest of our Swedish mission in Alaska I have with special attention observed this announcement of the Department of the Interior in Washington. Prompted by the same and for the sake of the object itself I take the liberty to very respectfully address my views on the subject to you.

Through repeated travels in the northern provinces of Sweden I have come in constant contact with the Laplanders and had the opportunity to study not only the customs of these people but also their breeding of reindeer, which is the most important source of livelihood for the Laplanders. I thus learned to understand that this occupation is a very difficult one, requiring great physical strength and endurance.

On account of the nature and instincts of the reindeer the life of their owner is subjected to all the dangers and toils of a nomad. Experience shows that the reindeer can not, with advantage to the owners, be forced, like a horse or cattle, to remain upon one and the same place; he must, led by natural instincts, roam about from place to place and forces the owner to a continual change of abode. Facts show that resident families never, with any advantage, could bring up or keep reindeer, and the resident reindeer owners therefore always give them over to the care of nomad, or so-called "rein-Laplanders," who, for a small compensation, take charge of them. In the true interest for the introduction of reindeer in Alaska I therefore set forth my views and experience, and wish to say that, for the sake of obtaining satisfactory results, it is desirable in the undertaking that only Laplanders should be engaged for the execution of the work in question. It is also a common fact that Laplanders who become used to the life of resident inhabitants refuse to or are unwilling to continue the ways of living of the true reindeer herdsmen; indeed, they seem to lose their faculties for the toilsome labors and life of the tribes who are accustomed to it. In the real interests of the aim in view and from an economical standpoint therefore it would be advisable to

engage a few Laplander families who, from their earliest childhood, have led a nomad life and prefer it to a resident life. It can not be difficult to accomplish this. The women of the Laplanders are extremely useful in the management of reindeer, and in physical strength and endurance they can contend with any man. In case 4 such young, strong, and hearty families could be transported to and naturalized in Alaska, bringing with them some of their reindeer, principally "cow reindeer," and sleighs, these families would, with a small support and encouragement from the Government as a start, soon and to their personal advantage be able to take care of themselves without any cost to the Government.

There are in Sweden "rein-Laplanders" who have been brought up in the Christian faith, and I entertain such lively interest in the matter that I would like to serve the Government, and at its cost procure such families, and as their leader go to Alaska with them.

Having lived a short time in this country only and finding difficulties in expressing myself in the English language, I have taken the freedom to address you in Swedish.

With the highest consideration, I sign,

Respectfully,

J. NYVALL,

*Pastor of the Swedish Mission Church, Red Wing, Minn.*

---

SAN FRANCISCO, *January 1, 1894.*

Dr. SHELDON JACKSON:

To-day I heard of your advertisement in the Danish paper Bien and, desiring to secure a position as reindeer overseer in Alaska, I will try to convey to you some idea of my practical experience in that occupation. I come from Bergen, Norway. I am 25 years old, and am 5 feet 9 inches in height, of strong build and hearty and healthy. When quite young I went to Finmark, in the north of Norway, and had the best opportunities to study the characteristics of reindeer and what care they need. But I must inform you that the tameness of the reindeer and their vitality do not depend on the competency of the herdsmen only, but greatly on the conditions of the country in regard to its physical structure and to food. It is of importance to have a sufficient number of watchful dogs. If the country is covered with mountains and valleys, steep slopes and tracts, then the reindeer are much more difficult to handle than those reared on plains and prairies, where it is easier to tame them and keep them in flocks and herds. Well-trained dogs can much easier bring scattered herds together than any men can possibly do. The dogs follow the command of the herdsmen, and these should be competent enough to secure good dogs. In Finmark we used snowshoes (skis) during the winter, which enabled us to surround the reindeer and drive them in the direction desired. Bears and wolves often scattered the herds in all directions and then the herdsmen had to follow them upon his "skis" and the dogs would bring them together. Of 1,000 to 1,500 reindeer there were at such occasions sometimes from 30 to 40 found dead upon the rocks. The increase and welfare of a reindeer herd depend greatly upon the watchfulness and painstaking of the overseer, who has to be awake at almost any hour of the day or night. One has to be kind-hearted toward them and search for the best pastures, and the reindeer grow quite tame if treated well. I am a good ski-runner and marksman and have used rifles both in self-defense and in orders to defend the herd. Besides, I am skilled in skinning animals that have perished in one or the other manner.

Two years ago I hunted kangaroos in Australia, and had the best opportunity to handle rifles and strip off the skin of the killed animals, and I am used to roaming about upon the prairies. In Finmark we had, of course, big bags of reindeer skin

to sleep in, which we buried deep in the snow to keep warm. This was all the house we needed, and our provisions we procured from the reindeer. It is impossible to state wages. In the first place I have not lived long enough in America to know the conditions and circumstances, and in the second place I ought to know the number of animals in charge of each man, and if the position is permanent.

If you count on my services please inform me at an early date regarding particulars, and I should like to start as soon as possible. The company, however, must pay traveling expenses and other expenditures for equipment. I expect only a reasonable remuneration for services. I know the English language thoroughly in regard to speaking it, but I am less versed in writing.

Very respectfully,

P. EINARSEN,
*507 Marion Street.*

---

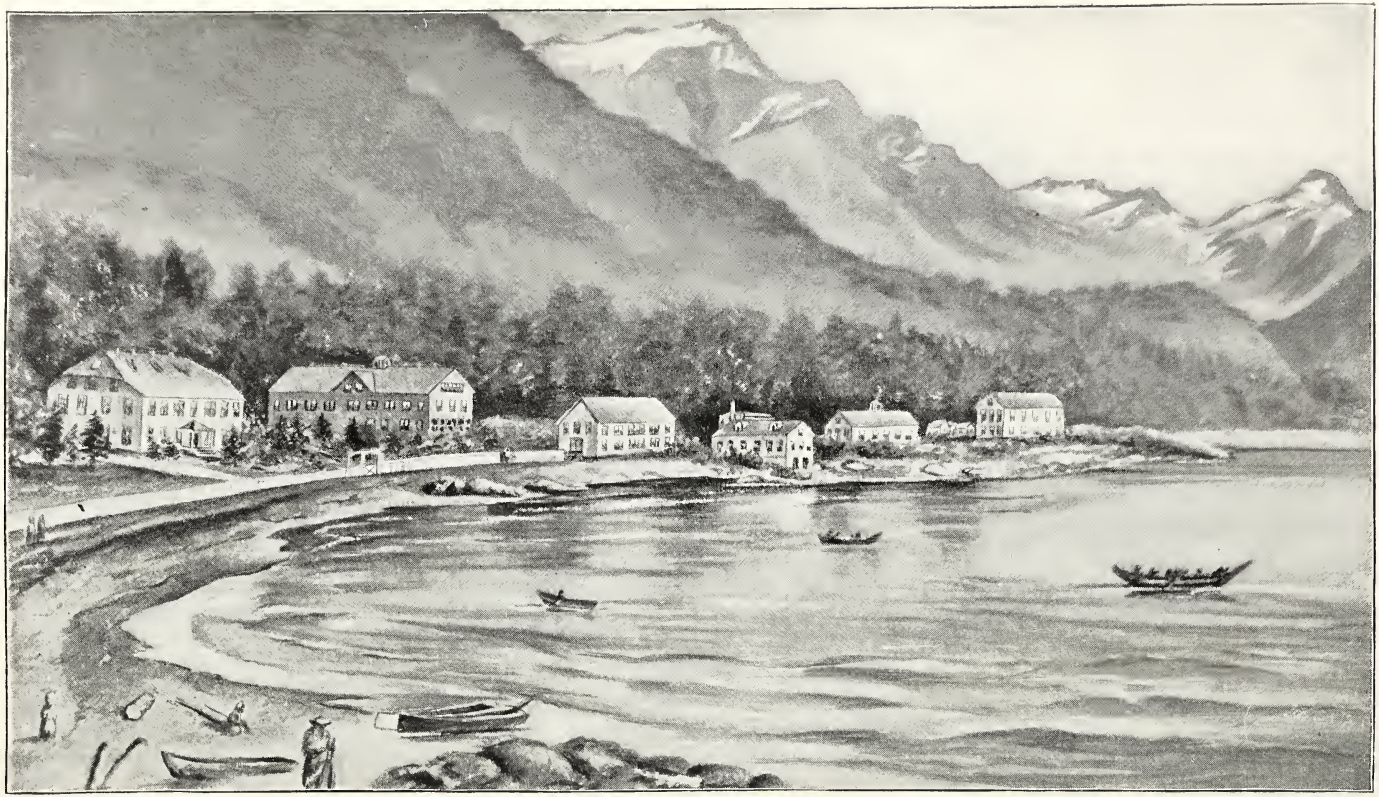
McNEILS ISLAND, WASH., *January 2, 1894.*

DEAR SIR: In the newspaper Skandinaven, of Chicago, I noticed an advertisement from you about men wanted to go to Alaska to take care of reindeer. As I am from that part of Norway, where they keep the reindeer in flocks of a hundred to thousands, and as I have some knowledge about herding and taking care of reindeer, I might give you a few points on the subject matter. In the first place, I do not think there is a Laplander in the United States or Canada, as that race very seldom emigrate. They are a people that cling to their forefathers' customs and traditions like the Mongols of Asia.

In Norway and Sweden they live as nomads in the mountains with their reindeer, and associate very little with the farmers and other inhabitants of those countries, and they have their own language, though the most of them speak and understand the Scandinavian languages. They are a true, honest, and faithful people, and, if once induced to accept a position they will give up their lives at the post before neglecting their duties. And if you can not find Laplanders in the United States or Canada, I would advise you to send to Norway for them, by the aid of the American consuls at either the city of Christiania, or Throneblyin. They could be hired in the neighboring country. And I can also give you the address of a friend of mine from boyhood, who is the proprietor of a big estate a few miles from the city of Throneblyin, and his estate is surrounded by mountains, where Laplanders roam with their reindeer, and, as he is a man of cosmopolitan habits, he would gladly aid you in an enterprise like this, and free of charge, and you can correspond with him in the English language as he is an educated man. His name and address is Jacob S. Gram, Stenkjeer post-office, Norway.

Another important matter is to secure good, trained dogs to help herd the reindeer. In case they are chased by savage beasts, like bears and wolves, the reindeer will spread out, and they can not be brought together without the help of good dogs, no matter how many herders there are, and the dogs will also, by their fine scent, notify the herders of the approach of any enemy, and the herders will be on their watch, and I do not think this kind of dogs can be found in this country, either. In case you have to write to Norway for Laplanders to go to Alaska, you know they are ignorant of the English language, and it may be they would not be willing to go to a foreign country, unless they could have a guide that understands their language, and, in that case, I would be glad to accept a position, and go to Alaska with them and take care of the reindeer. When about the age of 20 years I traveled among them in the old country, and know their customs and habits, and take interest in their care of the reindeer. I am 38 years of age, have good health, am used to fishing and hunting, and at present live on my ranch in the State of Washington.

As to what wages I would ask, I will say $75 a month, with board, and, without board, so much more as the board would amount to.



Austin hall. (Boys.) Kelly hall. (Girls.) Church. Museum. Parsonage. Hospital. Mount of Cross.
Elliott F. Shepard industrial building. Model cottages.

INDUSTRIAL TRAINING SCHOOL (PRESBYTERIAN), SITKA, ALASKA.

As to my character and responsibility, I will refer you to Congressman H. E. Boen, from Minnesota, now in Washington, D. C., or State Senator Louis Foss, of Tacoma, State of Washington. They have known me for years.

Hoping for an answer at an early date, I remain, yours, truly,

C. TANGEN,
*Steilacoom Post-Office, Pierce County, Wash.*

SHELDON JACKSON, Esq.,
*Washington, D. C.*

---

RICHMOND, WASH., *January 6, 1894.*

DEAR SIR: Have seen in my newspaper that you want a few Laplanders to go to Alaska to take care of some reindeer. I am a Laplander, have lived in this country since 1880, am able to talk English better than I can write. I am 36 years old. I can't say anything about wages before I hear how it is with board and the necessary outfit. I will say this much: you ought to have some of the Laplander dogs; without them one can't do much. If you should wish to get some of those valuable dogs I am ready to give you all the information possible.

To take care of reindeer and to train the reindeer you ought to have one or two Laplanders fresh from Lapland, with their dogs, and other things.

Yours, truly,

A. N. STOKES,
*Richmond Post-Office, King County, Wash.*

Dr. SHELDON JACKSON,
*Bureau of Education,*
*Washington, D. C.*

---

REDMYER, COOK COUNTY, MINN.,
*January 9, 1894.*

HONORABLE SIR: I wrote a letter to you the 5th instant, in which I applied for a position as foreman to take care of reindeer; but as I did not show my ability for such a duty, I thought I would tell you more about myself. If this position should be placed in my hands, I shall call your attention to the selection of two Laplanders and four dogs. The dogs must be of the kind used by Laplanders, which I think I can recommend or furnish from Norway. In the summer the reindeer have to be kept close to the seacoast or on an island near by, as they like the salt water, and on this island is generally to be found fine grass, which is saturated with sea air. Also they will be protected from the wolves and flies. They are easily overcome with heat, and the sea air will protect them from that also. There must be two men night and day watching them in order to make them as tame as possible. In the summer the reindeer is made to pack all the provisions to the place where the men may be located. I understand how to do it, also how much each reindeer can carry. In the fall, before the snow comes, they must be taken back in the valley behind mountains, or to a valley where there are high ridges around, and there has to be lots of food or moss for them to live on over the winter, which place should be located in the summer, thereby saving lots of trouble. The provisions can be hauled up by reindeer on toboggans or cherist (Lapland name). It takes two good men to handle twelve reindeer, a raidy, with toboggans, when they are game or "hilbass." The dark gray reindeer are more game and can protect themselves better against the wolf than white reindeer. If I knew how many reindeer there were I could tell you what you needed for the whole outfit.

I think it would be well to go up to Alaska and find a good place for the reindeer before taking them up there. As to the salary or wages, I could not say, as I do not

know how expensive the provisions are up there. I suppose it is very high, but as there is lots of game and fish, it is not necessary to buy much of that kind. I told you in my first letter that I was over 50 years old, but I am a man in good health and can stand lots of hardships, and such a life would agree with me. I hope that I may get this position. Please let me know soon.

Yours, respectfully,

HENRY J. REDMYER,
*Palisade, Lake County, Minn.*

DR. SHELDON JACKSON,
*Bureau of Education, Washington, D. C.*

---

AUDUBON, *January 12, 1894.*

DEAR SIR: In reply to your request in an advertisement concerning reindeer herdsmen wanted for Alaska, I address these lines to you with an inquiry if you have already been supplied with men who are experienced in this pursuit. In a negative case, I should like to accept such a position, as I have had a practical experience of six years in Lapmarken, Sweden. The reindeer prefer the mountainous, wooded regions, and live principally on moss, especially on specimens growing upon fir and pine trees; during the summer they will feed on leaves and grass. They do not like warm weather, and prefer the colder climates. When in search for food the Laplanders use snow-skates in traversing the wood-overgrown tracts as well as when they try to bring together the scattered herds. For the latter purpose it is necessary to have well-trained dogs. For transportation purposes the Laplanders use sleighs, so-called "akjas," that are dragged by means of a rope, one end of which is fastened to the "akja" and the other around the neck of the reindeer; a second rope, for guiding, is fastened to the head of the animal. A Laplander's habitation consists of a tent which has an opening at the top to let the smoke escape; a chain descends from this opening, and a cooking-pot is fastened to it, in which the daily meals are prepared. May and June are the season when the reindeer have calves, and then inclosures are erected by the Laplanders, within which the cows are milked. I am 26 years old, and have never been sick as long as I remember. I leave it to you, sir, to determine about the wages, as you have a better judgment of the conditions in Alaska. Please let me know if you wish the reindeer to be herded in the manner of the Laplanders; if board is provided or not, and I would ask traveling expenses to be paid. I have only been one year in this country and am not able to speak English.

NILS LUST,
*Audubon, Becker County, Minn.*

DR. SHELDON JACKSON,
*Washington, D. C.*

---

1205 PINE ST., DES MOINES, IOWA.
*January 18, 1894.*

DEAR SIR: I see from the papers that the Laplanders in Jemtland (in Sweden, nearest town is Ostersund) are very discontented with certain restrictions made by the Government, and that reindeer culture under the present conditions is almost impossible, so that the Laplanders, although unwillingly, have commenced farming, for which they are not all fitted. This might perhaps make Laplanders inclined to emigrate. You should correspond with the U. S. minister in Stockholm (or the U. S. consul-general).

Yours, truly,

N. WIDTH.

DR. SHELDON JACKSON,
*Washington, D. C.*

CHICAGO, ILL., *January 18, 1894.*

DR. SHELDON JACKSON,

*Bureau of Education, Washington, D. C.:*

Having recovered from an illness (a cold), which lasted six weeks, I herewith, in reference to your letter of January 5, forward the following information: I was born and educated in the northern province of Sweden, Norrbotten (Lapland), and resided there until the year 1889.

I am 39 years of age, an unmarried man, and a total abstainer from alcoholic drinks.

I am a member of the Evangelical Lutheran Church and do not belong to any other sect.

I am hearty and strong in body and have been sick only twice within the last twenty years.

As mentioned in my former letter, I am fully acquainted with reindeer breeding and management, partly because I grew up among people used to that occupation and partly because I, for ten years, performed the functions of a Crown liegeman of some of Sweden's largest Lapland districts, and thus was in constant intercourse with Laplanders. I naturally became acquainted with the principal occupation and resources of the inhabitants.

In regard to my ability in the line as a superintendent (overseer) I can refer you to two Swedish Government officials, namely: The director-general, Lars Berg, in Stockholm, and the lord-lieutenant, (Landshöfdingen) K. S. Husberg, Luleå, Norrbotten, who both will be pleased to recommend me for the position if inquiries should be made.

For the furtherance and interests of reindeer introduction into Alaska it would be advisable to engage true Nomades, i. e., Laplanders, and of these from 4 to 8 persons for each 500 reindeer, until the whole enterprise has been established satisfactorily. One overseer would be necessary to supervise and examine the different herds and posts, to keep account of the number of animals, their marking, if such a thing is required, and to keep the books, accounts, and carry on the correspondence, etc.

The supervisor ought to have $100 per month as salary.

There being dissatisfaction and depression among the Laplanders in * Sweden at present, it would no doubt be an easy matter to persuade some to come to Alaska and take charge of the reindeer as herdsmen.

WILHELM BERGSTROM.

(161 Randolph street, (room 54) Chicago, Ill.)

---

SEATTLE, WASH., *January 19, 1894.*

HONORED SIR: Your valuable report to Congress I have read and take this occasion to very respectfully advance a few remarks and hints on this subject, demonstrating how the reindeer raising and traffic is carried on in the most northern regions of Norway and Russia.

Every mountaineer Laplander is at the same time a fisherman, i. e., from the spring time after the reindeer are driven to the seacoast until the fall when they are gathered into herds for marking, shearing, assorting, etc., and then again driven back upon the mountainous moss-fields, they have boats and fishing implements of their own. The fish they catch are principally cod-fish, salmons, halibuts, etc. In the spring and fall they dry the fish which later on are sold to merchants who ship them to Italy, Spain, and China, partly America and Russia. During the summer these fish are sold in an unprepared condition to the Russians who salt them on board their vessels and transport them to cities lying along the shores of the White Sea. In the fall before the fisheries are closed, they salt and dry fish enough for domestic necessaries until the next spring, and store them in the houses

* On account of a new law.

of people that live near the seacoast. During the run of the winter, the Laplanders call for these fishes, by means of reindeer transportation, whenever they are in want of a new supply. The livers and the oil of the fall fishes are collected, likewise, for domestic uses and kept in large fish bladders which are blown up for that purpose and are easily transportable. The oil and liver will keep in this manner until the next season. The oil is used in the preparation of food, as a sauce to the fish, and for moistening the bread with it. It is further used for lighting purposes, vehicles, and for preparing skins.

My advice is to supply every family with from one to two nets for catching salmons, cords and hooks for lines, and from two to three tubs of salt, besides boards from one-half to three-fourths inches in thickness; the boards should be of cedar-wood. This arrangement will insure greater rest to the reindeer and an increase in their number. (Mr. Dahl means, of course, they will not kill the reindeer for food, etc., but leave them browsing and resting at leisure instead of keeping them on the go at all times.)

With so small a number as from 200 to 300 reindeer, of which one-third probably are bucks, you easily understand that their increase would not be very rapid. Even if there were 1,000 animals, I would advise strict protection of the flock during the next three or four years. In Scandinavia we count from 500 to 600 reindeer to each family of eight members, servants and children included, and then these people pursue fishing besides in order to make all ends meet and provide themselves with the general necessaries of life. Even in so large a number as 1,000 animals, the increase is small, provided they are spared by diseases and wolves.

I have myself been a fisherman, have owned many reindeer, etc., and I should be truly pleased if I could go and live among those poor, forsaken people. I could teach them many occupations, how to catch fish, dry and salt them, make boats and cords, how to spin, and to preserve the oil, besides many other things. I would train the young people so that they in future years could work independently. However, I should not like to accept such a post for a longer term than from two to three years, if God permits me to pursue my duties that length of time; and during that period I could promote the welfare of the people and the country to a considerable extent.

I am a huntsman and have also, for many years, been active in the possession of a doctor (nonexamined), and I am in possession of a license as druggist, which may be of advantage in Alaska. As I said before, I take the greatest interest in the whole undertaking, which opens such a wide, rich field for the future.

You must kindly excuse, sir, that I correspond in my mother-tongue (Norwegian), but I am lacking a sufficient fluency to express myself satisfactorily on this subject in the English language. Both my wife and my son know the English perfectly. No doubt you will still have many subjects to write on before everything is settled, and I am always at your service. I hope that you will soon recover from your attack of "la grippe," and be enabled to reopen the correspondence; in the meantime I thought it well to send you word.

If the funds permit I advise you to engage some civilized, clever young Laplanders from the old country, who easily and more quickly can train the Eskimos. The coasts of Alaska abound in fish, and all that is necessary to utilize them would be implements and a knowledge of how to catch, prepare, and sell them.

Also, in the old country you will encounter the same difficulties in buying up reindeer in larger numbers, even from rich mountaineer Laplanders, and the same maneuvers as those in Siberia have to be observed. Yet, during the summer, when all the reindeer are near the seacoast, if one leaves orders at the first reindeer station to have ready a certain number of animals at one's return from the last station, it will be easier to gather a larger number of animals on the homeward route. One should never leave out of sight the great importance of obtaining a larger number of cows than bucks.

MRS. TILLIE PAUL AND CHILDREN. NATIVE TEACHER, SITKA INDUSTRIAL SCHOOL.

When I consider the advantage it will lead to, in case a sufficient number of reindeer for transportation purposes are obtained, and pulkahs (sleighs), to be drawn by a single reindeer, with the necessary outfits and implements, such as we use in Norway, and with which we drive through deep snow, carrying along a load of 200 pounds, besides mail and passengers, driving hundreds and hundreds of miles (the reindeer are changed every hundred miles), traveling over uncultivated tracts of land, where no roads can be maintained, then it will be understood what Alaska can be some day, with its rich fisheries and future large reindeer herds, and that these rich lands will soon be peopled.

Now, I will close, or my imagination may carry me too far, yet it is a fact that I have been an eye-witness of the great progress in Norway, Finland, and Russia.

The greatest and most difficult step you have conquered, sir, but there you can not stop without everything being lost. Indeed, you have accomplished a great and good work, but much is left to be done before you can harvest.

In my last letter I did not mention my son who lives here in Seattle. He is 32 years old, is courageous and manly, and graduated from the most superior schools. He speaks and writes well the English, Russian, Laplandish, Finnish, and German languages, besides the Scandinavian. For seven years he has lived here, performing the functions of a land agent, but three years ago he had the misfortune to lose his foot just below the knee, and he walks on a cork foot, which, however, does not interfere with his work. My son has lived in Alaska one year, and he is much interested in this affair. If I should be chosen for the position, I would take him along, and perhaps later he might step into my place, as he is well versed in all concerning reindeer. There are more persons in this neighborhood who are anxious to go along.

I lived circa forty years in the most northern part of Finmark, which, about sixty years ago was a place of exile for Norwegian criminals, like Siberia for Russia. At present it is a most important country in Norway, with its rich reindeer herds, fisheries, and extensive exports by sea.

With the kindest regards for you, sir, and your heroic work, I am,

Very respectfully, yours,

H. DAHL.

Dr. SHELDON JACKSON,
*Washington, D. C.*

---

SEATTLE, WASH., *January 27, 1894.*

DEAR SIR: Through my father, Dr. H. Dahl, of this city, I have had opportunity to read your report to the Senate on introduction of domestic reindeer into Alaska, and it is with great interest I have read your report; so much more so as I have had ample opportunities, both in Finmark among the Lapps, and also during a two years' stay in Northern Russia, where I was frequently brought in contact with the Samoïdes, to study the animal and its ways, and also the people herding them. In fact, I was for several years employed in trading with the Lapps, buying live stock as well as hides, etc., and giving them different supplies for it. I was sent to Russia when 18 years old to study the language, and as I had then already studied several languages my father thought it best to send me as far as possible away from cities and civilization, so that I should have no opportunity to speak with anybody but Russians and thereby learn the language quicker and to perfection. So after nine months' stay in the district of Mecen (city of same name), adjoining the district of Petchora, I left and traveled south to Petersburg, visiting England and Germany before I went to my home in Finmark, Norway. I stayed at home ten months and again took up quarters in the same district of Mecen, this time, more than anything to look into a business enterprise in sealing. During these two years' stay in Russia I had every opportunity possible to study the Samoïdes and their reindeer.

The reason I have to go into details in relating this is to show you that I am perfectly familiar with the subject I am going to touch. In looking at the pictures in your report of Eskimo, I am thoroughly convinced that this people are of the same origin as the Russian Samoïdes that you find under different names and in different tribes all along the Siberian coast, from Bering Straits to Canin Nose on the White Sea in Russia. Eskimo, as you find them in Greenland, and this people that you introduce under the same name along Bering Straits, must be two different peoples entirely. There are many things in your report that confirm me in my belief that this people are Samoïdes and not Eskimo. For instance, their way of driving with two or more deers before the sledge; the same kind of sledge; the long stick used by them to steer and drive the deers; all these customs you will find to be exactly the same with the Samoïdes at the White Sea in Russia, thousands of miles away. But more than anything, in their physiognomies they are to perfection the same. This people I speak of is perfectly harmless and good-natured. I have stayed with them in their tents many a night out on the tundras when traveling in those parts of Russia.

I have read through your "Instructions for Guidance at Reindeer Station," and find there many valuable points, but there is much that could be added under the heads of winter grazing and shelter; but this not being for me to pass on I only mention it.

I understand the Government is looking for a good man, who understands something about reindeer and the taking care of them, as superintendent of the station. Well, the selection of such a man should be made very carefully, as the success of the whole trial will largely depend on him. Being a single man, I should have nothing against undertaking it myself, provided there is sufficient pay in it. Under all circumstances I feel greatly interested in the enterprise, and wish you every success, considering it a good step in the right direction. If you will favor me with a few words you will oblige,

Yours, respectfully,

ADOLPH DAHL.

Dr. SHELDON JACKSON,
*Bureau of Education, Washington, D. C.*

---

McNEILS ISLAND, *January 29, 1894.*

DEAR SIR: Yours of January 17 is at hand, and I am very thankful for the interesting reading matter you send me; and according to those reports I have to say the introduction of domestic reindeer into Alaska is a success from the very beginning. Concerning what Du Chaillu says in the Appendix about the increase of reindeer in Norway and Sweden I will give a few reasons why there is not so large an increase. In the first place, the pasturage both in Norway and Sweden is limited, as the Lapps have the right to pasture their herds only on Government land. If they come on private owners' territory they are subject to heavy fines. And, in the second place, they kill some of the fawns every year to use their skins for certain pieces of clothes, and to have the mother deer furnish milk for family use and also for cheese-making. The cheese from reindeer milk surpasses any kind made from cows' milk in nutritive value.

So the value of reindeer for people in Alaska can hardly be overestimated. First, they are an excellent article for food, as well as useful for transportation. Certain newspapers in Tacoma and Seattle, Wash., have for the past three years agitated the question of forming a colony of Scandinavian fishermen for permanent settling in Alaska, but men with families are somewhat afraid of the winter in that region through the lack of a domesticated house animal; but what a help would not a few reindeer be! The cost of his feeding would be but a trifle, as the moss is found in abundance almost everywhere. Since I wrote my first letter I have asked many

Scandinavians if they have ever met a Laplander in the United States, but the answer so far has been, "No." As I said in my previous letter, I think you will have to bring them from Norway and Sweden; and I will say they might be hired for about 40 crowns (1 crown equals 27 cents) a month if hired direct from the old country; but, as I have said before, they are a funny, suspicious people, and there may be some difficulty in inducing them to emigrate to a foreign country, but they would be a good example for the Eskimo they would come in contact with, as they are trustworthy, and combine a great deal of respect for religion with high morality.

Hoping soon to hear from Dr. Jackson, I remain,

Yours, truly,

C. TANGEN.

W. HAMILTON, Esq.,
*Washington, D. C.*

---

ORTONVILLE, MINN., *February 12, 1894.*

DEAR SIR: In my last letter I promised to write you something about how the Laplanders take care of the reindeer and make them useful.

The reindeer generally travel twice a year, spring and fall. In the spring they come down from Lapland to the seacoast of Northern Norway. When the weather is warm they always go up in the highest mountains, and when it is rainy and cloudy they come down in the valley and lowland. Toward fall they start to travel back to Lapland, where they live in the heavy-timbered valleys in the winter time, and they live on moss. When the deer are traveling the Laplanders have to follow them and keep them together in flocks. They have to be watched by night as well as by day to keep the wolves away from them. They also have them marked on the ears. In the summer time they have big yards, where they drive them into, where they catch and milk them, and where they also catch the calves and castrate them. They have a peculiar way of doing this. They never use a knife. They use some other remedies. The deer are very easy to break for driving and for pack animals. A Laplander never strikes or pounds his animal. He simply throws him to the ground, jumps on him with hands and knees, and punches him around till he gets up.

The Laplanders are very saving people. They make use of every part of the animal, even the horns. The skin they use for bedding and coats; the skin of the forehead is used for moccasins; the skin of the legs is used for leggins and pants, as well as many other articles, mittens, and so on. All the tools a Laplander needs wherewith to take care of the flock are a good lasso, a good dog, and a good, strong walking stick, and any man that takes care of reindeer must have the same three things—dog, lasso, and cane; the dog for helping keep the flock together and driving them where he wants them, the lasso to catch an animal when it is necessary, and the cane when one is traveling in the mountains.

I think I have told you the principal things, except as to feeding places in the winter time. They must be herded in places where there is moss, because in the winter time they are fattest, the meat is best, and the hide is best for butchering.

Hoping to hear from you as soon as possible, I am,

Yours, truly,

LORENTZ M. LORSON.

Mr. SHELDON JACKSON.

---

NEW LONDON, MINN., *February 27, 1894.*

Mr. SHELDON JACKSON:

Your last letter, of February 27, 1894, has been received, and I observe that you do not need my services, the Government having engaged the men necessary for Alaska.

You request me to give you some particulars concerning reindeer in Lapland, and it affords me great pleasure to be able to do so. However, I must call your attention

to the fact that I, in a letter, can hardly give you so complete and wide-ranging details as I could do if speaking to you in person.

The Laplanders in Norway usually remain during the summer on the Norwegian mountain ranges (fjelde) and in the winter they move over to the northern parts of Sweden, the so-called Swedish Lapmarken, because there is better food for the animals. The reasons for these conditions may be found in the extensive forests which moderate the climate in Sweden, while the mountainous ranges in Norway are bare of woods; further, in the fact that in the large forests, consisting of fir and pine trees, there is a great quantity of what we call "lav" (lichen), a certain kind of moss that the reindeer are fond of and which grows upon these trees. Thus, when the snow lies deep and the animals have a hard time in finding food, then the Laplander travels about on his skees and gathers such food, felling trees in order to obtain this kind of moss. And, whenever the snow is very deep, the Laplander must find water for the reindeer and drive them to the watering place, observing that they have plenty to drink. It frequently happens that these forests harbor a great many wolves, in which case the Laplanders suffer great losses among their herds and are actually forced to keep watch by night and day. During the season when the cows have calves (in the latter end of April and beginning of May) it is likewise necessary to watch by day and night and see to the calves. The reindeer generally go for the mountainous tracts as soon as the spring sets in, on account of the numerous insects that infest the swampy forest tracts and because the climate is so much colder on the mountain ranges where the best reindeer mosses are found during the warm season of the summer. Many Laplanders move far beyond the Norwegian boundaries where there are no wolves nor other carnivorous animals, and then they go only once a day, at the most, to gather the herds together and examine if any reindeer have been hurt or to milk them, while during the night no watch is kept. A comparatively small number of Laplanders live on the Norwegian seashores, toward the Norwegian Sea (Vederhavet); during the summer they remain upon the highest mountain ranges and in winter they move away and swim their reindeer over wide stretches of water, sometimes 1 Norwegian mile in width, toward the outmost islands, because there is little snow during the winter.

They do not keep strict watch over them, except in the spring season, on account of the calves. These Laplanders rarely or never carry tents along, as they live with the settlers along the seashore. At this very moment I do not remember any further details of consequence; however, I will say that this mode of treatment of Lapland reindeer, as mentioned above, may not be of practical use for reindeer in Alaska. The climate and the geographical conditions of the country have to be taken into consideration. Reindeer that are introduced from western and northern parts of Norway do not thrive and can not live under like conditions as the reindeer living in the Swedish Lapmarken. Not having any accurate knowledge of the physical conditions of regions in Alaska, I would not dare to recommend my own practical experience. But I hope that the Government has chosen efficient and reliable men who can judge what is best to do.

In case you should desire any other information on this subject I shall be at your service, and if in future there should be an opportunity for me to go to Alaska as reindeer herder, I trust that you will kindly remember me.

Very respectfully, yours,

HANS GULDFJELD,
*New London, Kandiyohi County, Minn.*

---

PENTWATER, MINN., *February 27, 1894.*

Mr. SHELDON JACKSON:

Having received your favor of the 22d instant, and seeing that you wish to obtain some information regarding reindeer breeding and training in Lapland, I will, with pleasure, communicate to you all I know about the matter. First, I will mention

A PORTION OF KADIAK, ALASKA.

that I have not lived in Lapland but in the northern part of Norway, where I met a great number of Laplanders, besides the Norwegian Laplanders, who possessed large herds of reindeer, which they partly cared for themselves and partly hired men to take charge of them.

During the first part of May one has to be very careful and painstaking with the animals on account of the cows, which then have calves. One has to keep them separated from the bucks for about one to two weeks, because the bucks are always angry with the young calves, and 10 out of 30 are frequently killed by the bucks. After the calves are three to four weeks old the grown-up animals will suffer them very well. I know that the Laplanders used to watch by turns—some at daytime and others at night.

The small calves must be looked after and gathered together every day by the herders, in case they survive twenty-four hours after their birth, but the bucks should always be kept out of sight or they may kill the herders, especially if these have lost their dogs and are by themselves.

During the milking of the cows the herders should be very gentle and good to them; if not, the animals will kick them in revenge, and the man who receives a well-aimed kick may be crippled for lifetime.

The reindeer are by nature good-natured; nevertheless they do not favor men very much, especially if they are treated with stubbornness. For milking one must be provided with a *lasso,* or a rope about 20 yards in length, to the end of which is fastened a wooden hoop; this is thrown with skillful hand over the horns of the animal to be milked, which maneuver has to be repeated with all cows. However, one is obliged to have reindeer dogs for assistance; they are, indeed, indispensable, and 4 men with 4 to 6 dogs can easily take care of a flock of reindeer from 500 to 600 in number.

The details mentioned above I have myself experienced. I could tell you much more, but fearing that you do not understand my writing sufficiently perhaps, I will refrain at present.

I should feel greatly obliged to you in case you could procure me some kind of a position; if not in Alaska, somewhere else. You may believe that it is no easy matter to take charge of reindeer.

Very respectfully, I am,

JOHN NILSON.

---

BRANDON, MINN., *February 28, 1894.*

Dr. SHELDON JACKSON:

Your letter has been received and considered. I see that the Government has engaged the reindeer herders for Alaska, but nevertheless you wish to know how reindeer are managed in Lapland, and I will give you a brief description in the following:

In the first instance the reindeer superintendent ought to be a good man; secondly, the reindeer pasture should be a good mountainous tract with sufficient wild growing moss and fine grass, a certain species on which the reindeer feed. The reindeer prefer the cold regions during the summer, and then it is necessary to have good herders, but more so during the spring season when the cows calve; these have to be watched by night and day during that period. Good dogs are indispensable, but they are not used very much as long as the calves are young. The bucks must be separated from the cows and calves, and careful watch should be kept from April 15 to the end of May. If the herd is a small one, they may be driven into an inclosure for the night. The reindeer are very restless during the pairing season, harvest time, and they separate into many flocks. The month of August is the best for shearing the animals which need it, and all the calves should then be marked. The wolves are the worst enemies of the Laplanders, and also the lynx is very dangerous,

and watch must be kept by night and day if they roam about near the reindeer station. A good marksman will usually drive them away after having killed from nine to ten out of their number, but the huntsman has to be outdoors a great deal, and must mind neither cold nor strong winds. In order to make the reindeer tame to the touch of one's hand, one should feed them twice a week with salt. In winter there should be special tracts kept for them.

Please inform me in case you desire any further information.

Truly, yours,

JOHN FLOHT.
*Brandon, Minn.*

---

SEATTLE, WASH., *February 28, 1894.*

SHELDON JACKSON, Esq.:

In an earlier letter I told you that I speak Russian, but I have, moreover, a knowledge of the merchandise and articles mostly needed by the Russian Samoides or Eskimos, and I can easily arrange it thus, that the reindeer, as many as you want, can during the winter be brought over the ice alive, in exchange for merchandise. The stations can soon be erected, in fact already for the winter, between Port Clarence and Nulato (Yukon River) with stopping places at Golovin Bay. Moss should be gathered and accumulated in right time for shipping in the fall to the stopping places where no such food can be found.

In case you find my request regarding salary too high, you may reduce the sum for the first year, until you find out about my intelligence and what I am able to accomplish.

I hope, in meantime, to hear from you, and remain,

Very respectfully, yours,

H. DAHL.

---

STELLA, ONEIDA COUNTY, WIS., *February 28, 1894.*

DR. SHELDON JACKSON:

I received your favor of February 22, and see from your letter that you wish to be informed of the manner of treatment of reindeer in Lapland, and I shall try to comply with your request as well as it is within my power. I could give a much better account if I could make use of the Lapland language and terms. However, my wife is not familiar with this language and does not know how to spell Lapland words, for which reason I will try to explain myself in the Norwegian. (My wife is writing this. I myself write badly, having acquired writing only after I was grown up.)

I will first mention that it is impossible for us Laplanders to live on the mountainous ranges without reindeer, who provide us with everything we eat and dress ourselves with. I was brought up by a comparatively poor Laplander, and I do not remember him to have owned ever more than 63 reindeer at a time, and for 7 reindeer he kept 1 dog, while for 60 he had 3 dogs. The summer was our busiest season, and we did not move about much while the reindeer were giving milk, of which mother prepared cheese, etc. We built huts of staffs (timber raised on end, not horizontally), that were connected by means of birch-tree bast at the upper ends, leaving a hole for the smoke to escape. The reindeer cows were milked twice a day, but only those whose calves had been killed during the spring. The bucks (oxen, they call them) we used for driving, but only at times when we moved from place to place, whenever the food had given out for the reindeer and no more moss or reindeer grass could be found.

The reindeer can not be milked during the winter on account of their calving in the spring, and besides they must work too hard in order to obtain food from underneath the snow. During the harvest time and part of the winter, after the reindeer

have grown strong and their horns have developed sufficiently, they prove to be very capricious, and especially the bucks are as a rule ferocious. Only grown-up people can then take charge of them, and many a time it happened to me that I was forced to turn the sleigh over me for protection against the angry animal until he had finished butting. During the winter we were moving about all the time, and the instinct of the reindeer will tell him where to find food. The reindeer have fattened up at the harvest season, and then we used to kill those whose meat we intended to sell, smoke, or carry along for our own food. The skins were likewise sold or we made garments for ourselves, or shoes, sleighs, and sleeping bags, besides other things. The horns were carefully collected and various articles made of them, as handles for spoons, knives, etc. The horns that the animals lose in the spring are not worth anything and are not collected; besides they are usually butted off and can not be found.

Honored sir, I hardly know if the above includes the desired information, I having at the same time mentioned the mode of living of the Laplanders, which was perhaps superfluous, yet I hope that you will excuse my inefficient ways of describing the desired details, and I wish to say that it is indeed much easier for me to handle the reindeer than to picture their characteristics or management. Should you in future find a place for me and my services be of use to you, I will say that I shall be very willing to go to Alaska. I am not able to remain here longer than up to May, when the work will give out here, and I do not know where I am going then; in any case to nearest place where I can find work.

Very respectfully, yours,

JULL. SAMUELSEN.

---

CHICAGO, *March 4, 1894.*

Mr. SHELDON JACKSON:

In your letter of February 22 you request information concerning the management of reindeer in Lapland, with which request I shall partly comply, although it probably may be useless, since you, no doubt, have engaged men who are well posted in the business. You will have to suffer severely under it if an inefficient person has accepted the position.

One of the conditions is that the herder must be a good ski-runner, so as to follow the animals wherever they wish to go.

The next thing of importance is that one is familiar with the characteristics of the reindeer, and accordingly can judge what direction they wish to choose.

All male animals, with the exception of those destined for propagation, must be castrated in the spring when the weather is good. How this is done is not worth mentioning here, since only experienced persons can perform this work; however, it must be attended to, as otherwise the bucks would be too savage and unruly and not worth killing for domestic purposes.

The persons who milk the cows must be supplied with pick or trap ropes, with which the reindeer is caught and held until after some time it becomes tame, like other cows. The reindeer are very fond of salt, which may be strewn upon flat stones for them to eat.

Information with regard to the killing of reindeer for domestic use you can obtain at a later time if you desire so.

O. HIPPE.

---

ELY, *March 5, 1894.*

Dr. SHELDON JACKSON:

Your letter of February 22 is at hand and I thank you for your politeness. I see that the positions at the reindeer stations have been filled with men who probably shall be drilled to watch the herds there. I do not know the physical conditions of Alaska nor where the stations are situated, but in my fatherland it is utterly impos-

sible to remain at one place with the reindeer, who, in fact, are moving constantly from place to place in search for food, while the herdsmen have to follow them with their tents, made of strong material, that can be taken down and folded up whenever the reindeer commence their wanderings. They must be watched very carefully at all times, both summer and winter. During the latter season it is frequently necessary to shovel the snow away that covers the moss, and this is done principally in the woods. During the spring especial care is taken with the cows who calve, it being important and desirable that the herds increase in number. The young bucks, if needed, must be castrated, and all unruly animals of the herds must be looked after and tamed, so that they do no harm to others in the flock. There is, indeed, so much constant watching required and so many things to be done that one could write a whole book on the subject. But of what use is this to me, since the places have been filled, for which I am truly sorry, as I anxiously wished to obtain a position in that line? The milk and cheese of the reindeer are most excellent and splendid for all lung diseases and other ailments. It is, indeed, the best food obtainable from any domesticated animals, and drives away many diseases from the body, for which reason the Laplanders, who live on it entirely, are so strong and robust, although they live a very hard life and are subjected to the cold climate of the far north, which we natives nevertheless dearly love.

At any time in the future I shall be happy to accept a place as herdsman, because I understand the profession so thoroughly and have been used to it.

Very respectfully, yours,

A. N. LITHNER.

---

STURGEON LAKE, MINN., *March 2, 1894.*

DR. SHELDON JACKSON,

*General Agent:*

Your honored letter is on hand and has been considered. In reference to your question on reindeer breeding and management in the Swedish Lapmarken, I wish to say that on one side, if I touch upon all the minute details, much can be mentioned, and on the other side I may say that the reindeer take care of themselves if they are led to places where there is a sufficient amount of food. For the winter season the Laplander moves, as a rule, from the highlands to the vicinity of wooded regions and the reindeer roam about in scattered flocks without any special supervision; but the herdsmen must keep track of the whereabouts of the herds. It is harder to keep them in order after the bucks have been separated from the cows, as the former are at times very unruly. In the spring the herds are brought back to the highlands, and after the cows have had calves and the calves are advanced the herds should be driven together once a day, best into stables, to be milked; this can easily be done with the assistance of some well-trained dogs. Without these clever animals it would be impossible to keep the herds together for any length of time, especially when they are attacked by wolves and become separated. The wolves have been much more ravenous and savage; they are partly an unknown breed and believed to be Siberian wolves, which may be the case, but I doubt it. Furthermore, the reindeer have to be castrated, which is not without danger. The principal point to be observed is to find tracts that answer for the feeding places of the reindeer and that produce food enough to last the whole winter, namely, lichen and white moss, besides not being infested with carnivorous animals. The herdsman should have a sound head and be trustworthy and quick on his feet; he often has to go a long time without food, if on hunting expeditions, and be satisfied with uncomfortable quarters for the night, etc.

It does not belong to the question, yet I can not help mentioning that it is a wonderful sight to see, especially in summer time, when the reindeer herds climb up the highland tracts by the thousands; there is one jingling and creaking sound in the air and the whole mountain seems to be moving. One reindeer field after the other

has been turned over to the Swedes by the Laplanders. It seems as if this race must perish in the near future. However, at present they are more protected by the state than formerly, and it is indeed high time that the Government should see to the welfare of these nomads before it is too late.

Finding that in this country everything is carried on in a different manner from that in the old country, I also think that reindeer management is varying very much in its smaller details from that in Sweden. In the more important points, however, I should think that it necessarily ought to be the same.

With the highest consideration, I am,

E. J. BERGSTROM.

---

AUDUBON, MINN., *January 12, 1894.*

DEAR SIR: In conformity to your request for information in regard to how reindeer are treated in Lapland, I forward following instructions, although it will be of little value, since you have already engaged the men who will take charge of the reindeer in Alaska.

The reindeer prefer to live on wood-overgrown, mountainous tracts, and their food consists, during the winter, of moss and lichen.

The Laplanders are, during that season, obliged to follow them, and watch that there is sufficient food for the herds, and drive them from one place to another, because otherwise the herds easily separate and go in different directions in order to find food for themselves, and the herders are apt to lose several of their number. During the summer the reindeer are kept near the mountains, in the lowland tracts, and they feed then on grass, foliage, and fungus, and are less restless than during the winter, or approaching the time when the cows calve. At that time great care has to be taken, and the cows have to be constantly watched; these prefer to separate from the herd and hide themselves away, preferably in thickets of underwood and bushes. The calves are apt to be killed by the bucks, who follow the cows if not prevented, and for milking purposes it is necessary to build a stable (house) of brushwood into which the reindeer are driven by the Laplanders when they want to milk them.

It is necessary to throw a rope around the horns of the cows while they are milked. I could give you a full description of the Laplanders and their customs, but that would doubtless be useless to you, wherefore I will close my letter.

NILS LUST.

Dr. SHELDON JACKSON.

---

BOWDLE, S. DAK., *March 6, 1894.*

DEAR SIR: I hereby have the honor to comply with your request of February 22, 1894, to give a few hints in regard to the management of reindeer in Norway or Lapland.

Norway, in its general contour, is very rocky and mountainous. It has a mountain range that reaches from the north pole of Norway almost as far south as to the capital city, Christiania. The wild reindeer was to be found numberless, but scattered all over on these mountains, except in the fall, when a man could see herds, guessed to be about 10,000 in number. But after the invention of the breech-loading firearms they have been rapidly killed out, until, a few years ago hunting of reindeer was prohibited in Norway. These mountains are more or less covered with white moss, reindeer moss—named so because it is the only feed that suffices for the reindeer in the winter season. They dig it up through the snow with their forefeet. It is quite amusing to watch them; for, while the big deer are digging for feed, the smallest ones take advantage of the opportunity to eat, and are consequently the

fattest in the spring. Nowadays, speculators have found it to be a profitable business trade to go up to Lapland, buy a few hundred tame reindeer, and drive them south over on the mountains, oftentimes as far as what is named the "Hædaugen" and "Numedals" Fields. These reindeer feed themselves exactly as the wild ones do. They rustle for their living by digging up moss in winter time, and eat grass in the summer season. They are distinctly the same kind of animal as the wild reindeer.

The only good method of handling and herding tame reindeer successfully is to be always steady with them. Follow them up wherever they go or are to be kept. Have some good and well-trained dogs to assist and to chase them back, provided any or all of them want to run away. If they do escape, follow them up if you can and urge the dogs on to drive them back speedily. Should it be discovered that the leader or chief among them is of a wild nature, as these leaders are inclined to be, take him away and kill him. When the butchering time comes, take those that are to be butchered so far away from the herd that it can not be noticed what is going on. If this precaution is not taken they are liable to be frightened and to cause disturbances that may end in their running away. Another good method is to have the butchering houses in places so far away from the pasture as to prevent the herd from passing by it or give the reindeer any chance to smell blood or see dissevered heads, feet, etc.

It will be necessary for an outfit of herders and reindeer to have a certain rendezvous to return to every evening and stay at over night. Keep a place as long as possible, and every evening give salt and milk.

Never fail to handle the deer carefully, as they will return the kindness. Some reindeer herders have a disposition to use force in breaking them and taming them, whipping and cutting them as though they were pieces of wood, with no pang of remorse. This is certainly all wrong, and any reindeer herder doing so should be discharged immediately.

The reindeer are fond of music and if a man plays or sings for them, they will stand and listen as children would with a music teacher.

I will freely admit that it is not an easy job to make a good reindeer herder. To be such requires study and involves hard labor.

Please send me a few of your books.

Yours, truly,

H. KNUTZON.

Hon. SHELDON JACKSON,

*U. S. General Agent of Education for Alaska, Washington, D. C.*

---

MOLINE, ILL., *March 12, 1894.*

DEAR SIR: Your favor of the 22d ultimo is received, and confirms what I before have read in the paper that the position of chief herdsman of reindeer in Alaska is engaged.

If I had been tendered the position I should with great pleasure have done my duty with certainty of success, having a perfect knowledge of the business of caring for reindeer; and believe that I am adapted to it on several other grounds, being in possession of good health and more than common strength, and I am a good hunter of that worst of enemies of the reindeer, the wolf.

I will with the greatest willingness serve you in telling how the Lapps take care of their reindeer, as well as about the commercial value of reindeer to them.

All people who study history know that in Sweden, Norway, Finland, and Siberia there dwells, among other nations, a tribe (nomadic) known as Laplanders, who live in the mountains and own and bring up reindeer, from which they get all their livelihood. Hunting and fishing they also do, but it is more for pleasure and the destruction of the wolf than as a direct means of living. And not many know that

the reindeer business, if engaged in in the right manner, gives to the Lapps large profits, especially if the market for meat and skins is not distant.

Some Laplanders are to be found in Sweden owning as many as 4,000 reindeer, worth from $35,000 to $36,000, which give to their owners 20 per cent clear profit. Of course there are not many so wealthy, but most of the Laplanders own several hundred and upwards.

In late years many farmers in the northern part of Sweden have purchased small herds of reindeer, which herds remain in care of the Lapps for 25 cents a head per year, and the result has generally been profitable.

Every owner of reindeer chooses or buys one or more brands and sends them in, with his application, to the nearest court-house for approval, and if no brand like them has been registered before, the application will be granted. The brands are then cut on the ear of the reindeer, and thereafter the reindeer are protected as his by the law of the country. The Government employs some man as chief, who has to look after the rights of everyone; and to lighten his work it is forbidden by law to sell or buy any reindeer skin unless the ear remains on the skin.

In the summer the reindeer can not thrive in any other place than the mountains, above the forest, but below the snow-line. The Lapp with his family builds his cabin ("kata") in this region, especially near some lake, and busies himself with fishing.

The reindeer, spreading in many small herds, pasture within a district of from 25 to 30 miles, and need no attention, provided the Lapp knows where the largest flocks are. For this purpose the Lapp moves around now and then. Once a year, in the month of June, the calves have to be branded, in the presence of the above-mentioned chief. For this reason the whole country has to be searched, with the aid of dogs, in order to gather the reindeer close together. When this is done, the dogs keep guard around the herd; the Lapp catches all female reindeer which have any calves (the calves always accompany their mothers the first year) and then cuts the mark upon the ear.

Four Lapps are sufficient to take care of 2,000 reindeer. Two of the tamest female reindeer are kept in the neighborhood of the camping place to furnish the Lapp family with milk, but little of the milk is used because it has a bitter taste.

During the winter it is necessary to care for the reindeer well, because the wolf is importunate and the Lapps have to drive the wolves away from the reindeer. They will have to run on snow-shoes, sometimes 40 or 50 miles during stormy and inclement weather, before they can overtake and kill the wolves. This is not an easy undertaking.

The month of December is the Lapps' slaughter time, when the yearly killing of the reindeer takes place. At that time they change their camping place down to the forest in order to come nearer a road (usually near the mountains), where they can meet the speculators in meat and skins. As soon as any of them arrive, two or more Lapps go to the mountains early the next morning, and by the aid of dogs gather as many reindeer as they can in a hurry into a herd, and bring them by force down the mountains to the butchering place, where the deer crowd close together on some open ground, and the dogs are commanded to keep guard all around. The Lapp, as butcher, with a line and a knife, whose blade is not more than 4 inches long, walks in amid the herd to select the victims, principally the males and the more intractable females, and, using the line as a lasso, throws this on the victim, and as soon he gets hold of the deer's head, stabs the animal in the hollow of the neck. The victim falls suddenly to the ground, and the Lapp immediately thrusts his knife three inches behind the shoulder right into the heart. The blood runs into the cavity of the chest, where it is taken care of.

About two or three hours after noon the reindeer can not be kept any longer in herds. They want food, and, becoming uneasy, run up into the mountains. Next

day the reindeer are gathered together in the same manner as before, and the slaughter continues as many days as the Lapp wishes to kill reindeer.

Many a time I have been a spectator, and even taken part, in the killing of more than 200 reindeer, which was accomplished in less than four hours.

When the snow becomes deep and hard in the mountains the Lapp gathers all his reindeer in a herd and removes them down into the forest, where the snow is not so deep and hard, in order to make it more easy for the reindeer to get their food. On occasion of these removals the Lapp, with his reindeer herd, sometimes goes as far as 200 miles from the mountains, to the shore of the Botensea and out on the islands, carrying his household goods and children upon sledges drawn by male reindeer, which are trained for this purpose. They can drive very fast, oftentimes from 50 to 60 miles a day, if the sledging is good. The shape of the sledge is that of a little skiff, so that it can be drawn when there is no road.

When the spring comes again, the Lapp, with his reindeer, goes back to the mountains. They have to make this same round of travel every year.

In education the Lapp, on an average, is well advanced, as the Government has established schools everywhere among them, in which not only their own language but the Swedish also is taught, because they are constantly brought into contact with the country people, and their territory borders on that of the farmers. This last is not the case in Norway, Finland, or Siberia.

What I have above described about the Lapps' commercial interest in the reindeer shows that none of them can be persuaded to go to Alaska. They live as prosperously as possible in their own country and do not need any thing better.

But there is another class of Lapps that will willingly go anywhere in the world that you wish, provided you pay their fare and expenses. These are commonly called the "lochen" Lapps (country Lapps). They were born in the mountains. Through drinking brandy they have become good for nothing, and it is of no use to take them to Alaska. They live now in the country among the farmers, and make their living by begging. The best recruits you can get for taking care of reindeer in Alaska are certainly the servants among the Lapps who own reindeer. Two or three strong and healthy men, about 25 years of age, with as many women, are all that you need for the care of a large herd of reindeer.

I am always at your service if you wish to know anything further about the care of reindeer.

Yours, sincerely,

WILLIAM ALMQUIST.

DR. SHELDON JACKSON,
*Bureau of Education, Washington, D. C.*

---

CHICAGO, *March 11, 1894.*

DR. SHELDON JACKSON:

I herewith will try to meet your wishes and give you some information in regard to the usefulness and management of reindeer in Lapland. The reindeer are raised and kept on account of their meat and skin principally, and are used for carrying loads and for driving. They will drag 12 lispund (18 pounds 12 ounces each lispund) upon a certain kind of sleighs called *akija* (pulkhas) and if a person owns from 8 to 10 reindeer these are fastened in a row, one behind the other, with ropes and another sleigh, and in that manner one can transport from two to three times as big a load, at one time.

I will mention that the Laplander or reindeer owner has his reindeer marked by a cut in the ear, and, in order to prevent similarities in marking, the persons concerned have to be on the lookout and invent some mark that differs from all the others, etc. Reindeer are not killed during the summer. I have little more to say, except that the herders have to be careful in finding pastures or tracts with a sufficient amount of food for the herds, and in summer that the same have access to

REINA, ESKIMO CHILD.

watering places. The reindeer herders in Lapland are no resident dwellers anywhere, but move about constantly and live in tents like nomads, wherever they find good pastures for their herds.

I suppose that the men who were engaged as herdsmen are quite familiar with the raising and handling of reindeer, and asking you to excuse my poor writing, I remain,

Very respectfully,

OTTO CARLSON.

---

FEBRUARY 3, 1894.

Dr. SHELDON JACKSON:

I see from your letter that I have not been taken in consideration in your selection of herdsmen. I guess I was not thought efficient for the service, yet I would have done all in my power to fulfill my duties.

You wish to learn some facts concerning reindeer breeding in Lapland, and I shall with pleasure comply with your request and give you some points.

The Laplanders lead a nomad life and move from place to place in search of pasture for their herds. In the spring they move from the interior highland tracts down toward the tracts along the coast and remain there during the summer.

Upon the highland tracts, in the interior of the country, there grows a certain kind of moss which is the only food that is fit for reindeer. Before moving, one should select a number of the strongest bucks (oxen) that can be found in the flock, and these are tied together, one behind the other, and are then used for carrying loads. The loads are usually fastened across (over) the back of the animals. The reindeer heading the expedition is led by a Laplander, and the whole herd then follows after them. The dogs are on this occasion of the greatest use and indispensable to the Laplander. They keep the reindeer together and take care that none remain behind.

The Laplanders milk the cows during the summer season and this milk is extremely nourishing. The cows must be driven into some inclosure before being milked. The herds are not driven from place to place during the winter, but go as they choose; however, it is necessary that the herders keep watch over them.

The reindeer are by nature social and like to live in flocks.

In case you wish to learn any other facts on this subject, I shall be pleased to communicate them to you, if I am able to do so.

Respectfully, yours,

FRED. SOLLY,

*Box 6, Barron P. O., Barron County, Wis.*

---

PARADISE, *March 8, 1894.*

Dr. SHELDON JACKSON:

Your honored letter has been received and its contents noted. I will try to answer your question to the extent of my knowledge.

Lapland, as we Norwegians call it, includes the northern counties of Sweden and adjoins the boundaries of the northern Norland and southern Finmark of the Kingdom of Norway.

The Laplander moves with his reindeer to the Norwegian highlands for the summer season and for the winter to the Swedish highlands. I come from Norland, Norway, and have lived with the Laplanders and worked together with them.

In the spring, when the cows have calves, one must watch them in order to prevent them from forsaking their offspring, who would be starved to death without their care. The calves must be castrated when they are 3 years old, because the older oxen are very dangerous about harvest time, which is the pairing season. The castrated oxen, when they are between 4 and 5 years old, should be taught to drag

small sleighs or so-called pulkhas. The reindeer can run on the surface of deep snow where no horse could travel, and he drags the sleigh with a speed that far surpasses that of the horse. I can manufacture pulkhas; these are almost of the shape of small jolly boats; the reindeer can carry a load of 200 pounds during summer excursions. I am also able to make the fixtures adjusted to the reindeer for supporting the loads they carry. The cows are not used for work; they have enough to do with bringing up the young calves, and besides, their milk is used for domestic purposes. The milk is like sweet cream and tastes like cream. The cheese prepared of this milk is excellent as food, and is used as medicine for colds, gangrene, and colics. It is important to have well-trained reindeer or Lapland dogs. It is indeed impossible to get along without their assistance, but they must be trained not to bite the reindeer. The herds should be watched by day and night and protected against the wolves and thieves, or wild reindeer that are roaming about on their tracts; the latter would make the herds unmanageable. To prevent the domesticated reindeer from mixing with the wild reindeer, one should fasten small and large bells on collars that fit the neck of the animals. The collars are made of either wood, copper, or brass. This is an excellent means of keeping the wild and domesticated reindeer apart, as the latter are afraid of the bells. In the winter the herding is connected with greater difficulties, on account of the wolves that are more greedy, and perhaps the thieves are likewise more greedy. In order to be sure of a sufficient amount of food for the reindeer during the winter season, one should explore the regions during the summer and find out where the largest amount of moss is growing, and where the most frequent feeding places are located.

The reindeer shovel the snow away with their horns to get to the food, but sometimes the snow is covered with a hard crust of ice which they are unable to break, and the herdsmen are obliged to drive the herds into thick forests and find trees that are overgrown with moss; these are cut down for the animals to feed on. The herdsmen at times shovel the deepest layers of snow away when they are sure of finding sufficient and suitable food underneath. The sick reindeer must be attended to and doctored. The herdsmen should make their clothes of reindeer skins for the winter season, even their shoes and gloves; clothes made of reindeer skin are both warm and light. Skees and staffs with large rings at the lower end of the staffs are likewise requisite. I understand how to make skees and staffs and how to prepare the skins. I can help myself in all directions and understand how to throw the lassoes and catch the reindeer.

I do not mean to say that the Government should engage men with my experience; however that my experience would be of the greatest importance in the service of reindeer management. I add to say that I can build log houses and make the harness for the reindeer, reins, etc.

I remain, very respectfully, yours,

PEDER OLAFFSON,
*Paradise Post-Office, Cache County, Utah.*

---

CALUMET, MICH., *March 14, 1894.*

HONORED SIR: In reply to your letter of February 22, I send you following information on the breeding and management of tamed reindeer in our country; that is to say, of reindeer whose ears have been marked. The marks are not burned into the ears, but they are cut and each mark is entered into a book and checks are given to the respective owners. The herders mark the calves when they are 1 to 2 years old, preferably when 1 year old. The calves follow the mother cows until they are about 2 years old. The herds are driven together once a year and counted, and in case there are found some animals without a mark they are picked out to be sold; i.e., if the herdsman is uncertain about their right owners. The counting is done

in the middle of the winter in some inclosure, into which the herds must be driven or decoyed by one of the tamed driving reindeer, or a reindeer trained for driving with sleighs. Whenever the herders remove their herds in the summer or winter, these tamed reindeer are also used as leaders; one of the herders leads the first reindeer and all the others follow by themselves, while some dogs and a herder remain in the rear of the flock. In the summer the reindeer are kept in inclosures during the night, and during the day these inclosures have to be fumigated to keep off the gnats and gadflies which persecute the reindeer, who jump into the smoke all by themselves, whenever they are attacked by these insects.

The cows can be milked, and their milk, which is most excellent, is used as cream for coffee, or cheese is prepared of it. The milk can be preserved quite fresh for the winter season if kept in cold cellars. The reindeer are substitutes with us for horses and cows, and furnish with their skins material for clothing and other articles. Their horns are collected and glue is boiled.

It is best to castrate the reindeer when they are 3, 4, or 5 years old, and then they are called oxen, and are trained to pull pulkhas (sleighs). They cover with ease a distance of about 10 miles (Swedish) per day, but they can make 20 miles if necessary; however, this is too great a strain for them; they are in fact ruined, and unfit to be killed for the sake of their meat as food.

I beg you to excuse me, if this letter is too lengthy, and sign myself,

Very respectfully, yours,

C. O. GRANSTROM,

*Calumet Post-Office, Box 634, Haughton County, Mich.*

Dr. SHELDON JACKSON.

---

WINNIPEG, CANADA.

DEAR SIR: Those who occupy themselves almost exclusively with reindeer rearing in Sweden and Norway are in most cases Laplanders who own or are in charge of herds counting from 600 to 1,000 heads, and as they generally are married they are assisted by their wives in taking care of the herds, besides by 1 boy and 1 girl, or 4 persons in all, for a medium number of reindeer. There are, of course, Laplanders who own larger herds, and then they have a larger number of herders. If the Laplander is a fine skee runner (the women are just as skillful as the men, and one hardly ever sees a Laplander or a Lapland woman on foot, i. e., walking, during the snowfalls) and moves quickly over the loose snow, then he finds his well-trained dogs to be of the greatest help to him; he could, indeed, not get along without them, especially when he undertakes his annual migrations towards the seacoast, which usually takes place at harvest time, partly because those regions are safer from wolves and lynxes, that cause much destruction among reindeer during the winter; partly because they are anxious to sell their meats which they stored for the year, and partly in order to buy up provisions and other necessities, e. g., coffee, salt, gunpowder, etc., which the Laplander can easily carry back with him in the spring, while yet the lakes and marsh lands are covered with ice. Large full-grown bucks can drag a load of 80 to 90 kegs, besides the sleighs, which are constructed thus that they may easily glide over the snow and swim on the water without the articles stored therein being spoiled, and if they lose their balance they soon straighten themselves up again on their keel. The reindeer are satisfied with a comparatively small amount and meager food, consisting principally of island lichen or rein moss, i. e., a species of white moss that grows upon high mountains in cool places, and a certain kind of grass that grows in marsh lands and shallow lakes in the northern part of Sweden. The reindeer feed on this during the harvest season and in the winter, biting off the upper ends of the grass that are above the ice. There grows, moreover, a certain kind of a capillaceous moss upon the stems and branches of fir and pine trees which the reindeer likes.

The Laplander remains in one place only as long as there is plenty of food for his herds. For dwellings these nomads use tents of felting or homespun; some may build so-called Lap-tents of wood, but in the shape of a tent, i. e., round and pointed with a hole at the top for the escape of the smoke. The fireplace is built of stone in ring form, and a fire is kept up by night and day during the severe spells of cold weather. The meals are prepared upon this hearth, and consist generally of reindeer meat and coffee, besides cheese that has been prepared of reindeer milk. The Laplander's clothes are made of homespun for the summer season and of reindeer skins for the winter season. These skins resist the severity of the winter, and the herders, whenever they are overtaken by a heavy snowstorm upon the mountains, bury themselves in the snow until the storm has subsided and then they continue their route upon their snow skates.

The Laplanders leave their herds near the coast frequently without any special supervision, if there are good pastures; but on the mountain or highland tracts they are obliged to watch the herds constantly, and do this by turns, on account of the wolves that roam about in those regions and make great ravages among the reindeer. The watchfulness and skill of the herders is on such occasions put to a hard test, and they sometimes are forced for several days in succession to travel on their skates through the mountains in order to gather their separated herds. Thanks to the excellent dogs and the perseverance of the Laplanders, their efforts are as a rule crowned with success.

It would require a great many more men to hold the herds together if the Laplander were not such an expert snow skater; but he can within a few hours cover long distances on his skates, and the wolves can not easily escape him for any length of time when they are hunted down and pursued with guns. A reindeer will drive about 20 kilometers per day over hard frozen snow.

The reindeer meat is considered a great luxury, and demands a high price in the market of the cities along the coast. This trade, besides the selling of skins and horns, constitutes the principal source of income for the Laplanders; they also occupy themselves with hunting and fishing, etc., but they never cultivate the soil in connection with reindeer raising. These nomads lead a very laborious life on account of their constant travels, nevertheless they are always hearty and active, although they many a time are exposed to both cold and heat (perspiration) when they are out upon the mountains during several days of heavy show-storms. It is anything but comfort to follow the reindeer that seek shelter behind the rocks or in the valley, and nothing can keep them back from their flight when their instinct informs them of an approaching storm; they seem to observe it coming several hours in advance.

It is astonishing that not more children perish at their birth, as no midwives attend the mothers who seldom are sick for more than a few days, when the little citizen is laid into the "klubben" (a kind of cradle made of wood and covered with skin in such a manner that the child rests upon the reindeer hair) which the Laplander carries upon his (or her) back until the child is old enough to ride in the sleigh (okjan).

The reindeer do not thrive in the lowlands and valleys during the summer; those who experimented and tried to retain them there have had the unpleasant experience to see them taken sick, and they frequently die if they can not return to the mountain ranges; they always find their way back to the tracts where they found food the preceding summer.

Each reindeer owner has a mark of his own which is cut into the ear of the reindeer belonging to him, so that they may be recognized in case they should be mixed up with other herds from which they are returned as soon as found out.

Very truly, yours,

J. Haqvin Hedstrom.

Dr. Sheldon Jackson,
*Washington, D. C.*

## NAMES OF THE NATIVE TRIBES OF NORTHWEST ALASKA, THEIR VILLAGES, AND APPROXIMATE GEOGRAPHICAL POSITIONS.

By Henry D. Woolfe.

[*Habitations in winter. †Uninhabited and deserted.]

| | | Houses. |
|---|---|---|
| *1. | Point Barrow. Nö wök. Nö wök a mutes | 12 |
| *2. | Cape Smythe. Ötgliavie. Öt gli avie mutes | 27 |
| *3. | Refuge Inlet. Sing rach | 1 |
| †4. | Franklin Point. Ping i shu rach | |
| †5. | At point off Sea Horses Island. At nach | |
| *6. | Point Belcher. She rah rach. She rah rach a mutes | 5 |
| †7. | Point, south 1 mile. Nuna rayah | |
| *8. | Point Collie. Koog mute. Koog mute | 7 |
| *9. | Wainwright Inlet. Kelumak tow rook. Kelumak tow rach amute | 5 |
| *10. | Icy Cape. Kayak sow rah wick | 1 |
| *11. | Kakalik, on (beach lagoon) North Point Lay | 2 |
| *12. | Point Lay (up river 25 miles). Kook pow rook | 4 |
| *13. | North of Cape Beaufort. Katz e gay lee go | 3 |
| *14. | Cape Lisburne, North. Onivak. Onivak a mutes | 4 |
| *15. | Marryat's Inlet | 1 |
| *16. | Point Hope. Tig e rach. Tig e rach amutes | |
| *17. | South Cape Thomson. Ou vak | 1 |
| *18. | Cape Seppings. Ke she mah low | 1 |

Six deserted houses on beach between Cape Seppings and Cape Krusenstern, occupied in the winter and spring by travelers and hunters.

| | | | |
|---|---|---|---|
| *19. | At vicinity east of Cape Krusenstern. Attilich | | 2 |
| *20. | On beach of lagoon, back of She sho alik | Aniyah | 1 |
| *21. | | Ik pi yahrook | 1 |
| *22. | At month of Non ah tak River. Napach took toak | | 4 |
| *23. | Shag ah low moot, between above river and Koowak | | 2 |
| *24. | On Hotham Inlet | | 4 |
| *25. | Selawig River. Tooch loo mahrook | | 1 |
| *26. | Selawig River. Pootoo ge rach | | 1 |
| *27. | Selawig River. Ky yook toat | | 2 |
| *28. | On valley, south. Ah cha wich ah nach | | 1 |
| *29. | Buckland River. Kangich | | 2 |
| *30. | Junction of Buckland and Kyack rivers. Kyack | | 2 |
| *31–33. | Villages on tributaries of Buckland, Una leh chok and Ith e'took Rivers | Mahkachrak | 1 |
| | | Kai yow rook | 1 |
| | | Toopkich | 3 |
| *34. | On beach from mouth of Buckland River | Koo gah rook | 2 |
| *35. | | Koo gah lick | 2 |
| *36. | About 6 houses on west side Kotzebue Sound, towards Schich mar eff Inlet. | | |
| *37. | Schich mar eff Inlet | | 3 |

(34–37. The name of the people inhabiting these houses is "Tap Kach a mutes," from "tap kach," a sand beach, and "mute," dweller.)

| | | |
|---|---|---|
| *38. | Cape Prince of Wales. King e gaw. King ich mutes | 1 |

| | | Houses. |
|---|---|---|
| *39. Port Clarence. Nook | Kaviar rach ahmutes | 1 |
| *40. Port Clarence. Singrak | Kaviar rach ahmutes | 1 |
| *41. Grantley Harbor. Kav i ak. | Kaviar rach ahmutes | 4 |
| *42. Kings Island, Oúkivok, Oúkivok amutes | | 4 |
| *43. Little Diomede. Ig neé shook. Imach lich amutes | | 4 |
| *44. Sledge Island. Ah ye iak. Ah yéach amutes | | 4 |
| *45. *46. *47. *48. *49. | Coast between Point Spencer and west cape of Golovin Bay—5 villages. | |
| *50. West cape Golovin Bay. Ignéshuk | | 3 |
| *51. Golovin Bay, west side | | 6 |
| *52. Golovin Bay, head | | 2 |
| *53. Norton Bay, on west cape | | 4 |
| *54. Norton Bay, west shore. Neviaksah ah look | | 3 |
| *55. Norton Bay, head. Owing nah roch | | 1 |
| *56. Norton Bay. Ig lu tah lik | | 2 |
| *57. Norton Bay. U nak toa lik | | 3 |
| *58. Norton Bay. K oo ynk | | 2 |
| *59. On spit dividing Norton Bay from Sound. Shak toa lik | | 6 |
| *60. On Norton Sound, west shore. Ig a nik | | 4 |
| *61. On Norton Sound. Una lach leete | | 4 |
| *62. On Norton Sound. Gol so via | | 2 |
| *63. On Norton Sound. Kig ich towak | | 4 |
| *64. St. Michaels Island. Tachik | | 4 |

TRIBAL NAMES.

Coast from Point Barrow to Wainright Inlet:

Noowook. Noowook ah mutes. Point Barrow.
Öt gliavie. Öt gli avie mutes. Cape Smythe.
She rah rach. She rah rach amutes. Point Belcher.
Koogmute. Koogmutes. Point Collie.
Kelumaktowrook. Kelumak tow rach a mutes. Wainright Inlet.

In the district from the western end of Camden Bay to the West bank of the Colville River, to the mountains where the Nounatak River rises, and along its course to Kotzebue Sound, the people are known as Nouna tach a mutes.

On the Koo wak River, Koo wach a mutes. From the Colville River to within 30 miles of a line drawn from Point Belcher to the rise of the Ik pik pun River, in an ESE. direction to a north line from Belcher to Point Barrow, 30 miles inland, the people are known as Kang ay ah nach a mutes. The tribe, however, is nothing more than a mixture of Nanatach a mutes, and the descendants of a semilittoral race of the region above named.

From Point Lay south to Icy Cape north, and the riverine districts, Colville and Ikpikpun, to the eastward, there is a nomadic tribe composed of a mixture of coast natives and Nounatak people, styling themselves Ötoo kach ah mutes.

Their original homes were along the seacoast from Wainright Inlet to Point Lay, but disease and mortality reducing their numbers, by process of intermarriage they have become closely allied and assimilated in language and customs with the inland people. Numerous remains of houses along the coast testify as to the former number of the people.

On the Kook pow rook River, 25 miles from the sea, is another small band calling themselves Kook pow rach amutes, a mixture of Point Hope and Ötoo kach natives.

At Point Hope, some twenty years ago, was a very populous village. From Point

Lay north to Cape Seppings in the south, the Tig erach ah mutes occupied all the villages, their eastern or inland summer villages being, however, confined to a distance of 30 miles inland. The tribe, Tig erach amutes, now confine themselves to Point Hope and Onivak (Cape Lisburne) villages in the winter.

From Cape Seppings to Cape Krusenstern, and inland to the Nouna tak River, there still remain about 40 people, the remnant of a tribe called Key wah ling nach ah mutes. Deaths by violence and disease have decimated the ranks of these people. They will in a few years entirely disappear as a distinctive tribe.

Inhabiting the winter houses, from Cape Krusenstern to the mouth of the Nounatak river, there is no distinctive tribal cognomen known, the residents being a mixed lot of Kéwalingnach ahmutes and Nounatachamutes, with a few Point Hope people.

Similar conditions prevail at the island upon which Cape Blossom is situated, the villages being composed of Kang 'ich amutes, Buckland River, Nouna tach amutes, Selawig amutes, and Cape Prince of Wales natives, a hybrid race known as Kig ich towak mutes.

Selawig ah mutes. Selawig River.

Kang ich amutes. These people, having their cradle on the Buckland River, have spread over the country as far south as Golovin and Norton Bay and to Saint Michaels. Known to the Russians as Mahle' mutes.

From Buckland River to Cape Prince of Wales reside perhaps 200 people, known as Tap kach ah mutes, a mixture of Kang ich amutes and King ich ah mutes (Cape Prince of Wales).

King egan. Cape Prince of Wales King ich a mutes.

Ig neéshook. Little Diomede Imach lich a mutes. These people by their language indicate that their early origin was from Cape Prince of Wales, intermarriages with natives of the Big Diomede Island (Tchuk chees) having been prevalent.

Port Clarence and Grantley Harbor to Golovin Bay is inhabited by a tribe known as the Kav e ah rach a mutes.

Kings Islands. Onkivak ah mutes.

Sledge Island. Ah yach a mutes.

In the five villages from off Sledge Island to Golovin Bay the Sledge Island natives are intermingled with the Kangich amutes.

From Unalachleet, Norton Sound, to the confines of the delta of the Yukon, the entire inhabitants of the district are known as Mach ach amutes.

It must be borne in mind that these people call themselves, if asked, "Where do you belong?" by the name of their village; and only by a knowledge of the dialectical differences can their tribal origin be discovered.

# INDEX.

O

53D CONGRESS, 3d Session. } SENATE. { Ex. Doc. No. 92.

IN THE SENATE OF THE UNITED STATES.

# REPORT

ON

# INTRODUCTION OF DOMESTIC REINDEER INTO ALASKA,

WITH

# MAPS AND ILLUSTRATIONS,

BY

SHELDON JACKSON,
GENERAL AGENT OF EDUCATION IN ALASKA.

1894.

FEBRUARY 23, 1895.—Referred to the Committee on Appropriations and ordered to be printed.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1895.

# CONTENTS.



APPENDIX.

# LIST OF ILLUSTRATIONS.

MAPS.



ILLUSTRATIONS.

## ACTION OF SENATE OF UNITED STATES.

IN THE SENATE OF THE UNITED STATES,
*February 20, 1895.*

*Resolved*, That the Secretary of the Interior be directed to transmit a copy of the report of Dr. Sheldon Jackson, with maps and illustrations, upon the work of introducing reindeer into Alaska during the season of 1894.

Attest: WM. R. COX, *Secretary.*

# LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
*Washington, February 23, 1895.*

SIR: I am in receipt of the Senate resolution of the 20th instant—

That the Secretary of the Interior be directed to transmit a copy of the report of Dr. Sheldon Jackson, with maps and illustrations, upon the work of introducing reindeer in Alaska during the season of 1894.

In response thereto, I have the honor to transmit herewith a copy of the report desired.

Very respectfully,

HOKE SMITH,
*Secretary.*

The PRESIDENT OF THE SENATE.


SAMUEL JOHNSEN KEMI, WIFE, AND BABE, TELLER REINDEER STATION, ALASKA.

# INTRODUCTION OF DOMESTIC REINDEER INTO ALASKA.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
*Washington, D. C., December 31, 1894.*

SIR: I have the honor to submit herewith my fourth annual report of "The introduction of domestic reindeer into Alaska." The year of 1894 has been one of gratifying progress and success.

## STATION.

Upon the arrival of Mr. W. Thomas Lopp, July, 1893, to take the superintendency of the Teller Reindeer Station, Capt. M. A. Healy, of the United States revenue cutter *Bear*, very considerately sent ashore his carpenter and two sailors to repair the house and make it habitable for a family. During the erection of the house in 1892 the supply of lumber had given out, and the completion of the building had to be postponed. Now, the barn-like structure was finished up and divided into six comfortable rooms. At the rear of the building, across its entire length, a "lean-to" 12 by 60 feet was erected, furnishing comfortable quarters for the apprentices.

During the fall the Eskimo apprentices, under the direction of Mr. Lopp, erected a small frame storehouse for the supplies, and two comfortable log houses 12 by 15 feet for the use of the married herders. These houses were plastered with cement and clay, sheathed with the odds and ends of boxes broken up for the purpose, and stuffed with moss between the sheaths and logs. As these are the first log houses north of Norton Sound, they have attracted much attention from the Eskimo. A scow for carrying wood and a small boat for fishing were also made.

In the fall of 1894, to accommodate the party at the station, increased by the arrival of the Lapps, a log residence 16 by 35 feet was put up. A log building was also erected at the east end of Grantly Harbor for the use of the herders in the winter, that section having been selected for the next pasturage of the herd. These log buildings are built from the driftwood found strewed along the ocean beach in the neighborhood.

## PERSONNEL.

Mr. W. T. Lopp, of Indiana, was in charge as superintendent from July, 1893, to August, 1894. Desiring to reopen at Cape Prince of Wales the Congregational mission which had been closed by the mur-

der of the missionary, Mr. Harry R. Thornton, August 19, 1893, Mr. Lopp asked to be relieved from the charge of the station at the end of the fiscal year. His request was granted, and Mr. William A. Kjellmann, of Madison, Wis., was appointed in his place. Mr. Kjellmann arrived on the whaling brig *W. H. Myers*, July 29, 1894, and at once took possession. In July, 1893, upon the removal of Mr. Bruce Gibson as assistant superintendent, there being no opportunity of securing a suitable successor, Captain Healy, of the cutter *Bear*, discharged Mr. John Grubin, quartermaster, in order that he might be appointed assistant superintendent. In August, 1894, Mr. Grubin was succeeded by Rev. T. L. Brevig, a Norwegian pastor from Stoughton, Wis. Mr. Brevig was born in Norway in 1857, but accompanied his parents to America when he was 10 years old, and settled in Iowa. His training as a teacher was secured in a four years' course at Decorah, Iowa, and he received a State certificate as teacher of public schools in both the English and Norwegian languages. In 1888, feeling impelled to enter the ministry, he took a three years' course at the Lutheran Theological School at Minneapolis, Minn., at the close of which he was ordained a minister of the Norwegian synod.

Mr. Brevig is expected not only to assist in the administration of the station, but also to have charge of the school at the station. For the fiscal year ending June 30, 1894, the school was taught by Mrs. Eleanor Kittredge Lopp, with an attendance of 69 pupils.

### HERDERS.

During the winter of 1893–94 Mr. Lopp had the assistance of three Siberian herders, Anker and Dantin, from the South Cape of St. Lawrence Bay, and Nootadl goot, from near Cape Serdze Kamen. While their help was essential, and could not have been safely dispensed with, they were far from satisfactory. They proved so passionate, obstinate, jealous, and conceited at times that Mr. Lopp wished them back in Siberia. Anker, especially, became so insubordinate that in February he was discharged. Upon one occasion, becoming angry because a tired deer lay down in his harness and refused to rise, Anker jumped upon his head and stamped him to death. During the season several of the sled deer were killed by the cruel treatment of the Siberian drivers. It has also since been ascertained that they were accustomed to kill and eat deer from the herd on the sly when out herding.

The Siberian herders were employed at the beginning of the enterprise, not because they were considered the best, but because they were near by and were the only ones that could be had at the time. It was realized from the first that if the Alaskan Eskimo were to be taught the management and care of the reindeer, it was important that they should have the benefit of the most intelligent instructors and of the most improved methods that were in use. By universal consent it is


1. S. J. Kemi. 3. M. J. Nakkila. 5. M. A. Eira. 7. W. A. Kjellmann, superintendent. 9. P. A. Rist. 11. J. S. Tornensis. 13. A. L. Somby.
2. Mrs Kemi. 4. Mrs. Tornensis, 6. Mrs. Nakkila. 8. Eira, jr. 10. Mrs. Eira. 12. Mrs. Somby.

admitted that the Lapps of northern Europe, because of their superior intelligence (nearly all of them being able to read and write, and some of them being acquainted with several languages), are much superior to the Samyoed deer men of northern Europe and Asia and the barbarous deer men of northeastern Siberia.[1] Intelligence applied to the raising of reindeer, just as to any other industry, produces the best results.

Therefore, when in 1893 it was ascertained that the herd at Port Clarence had safely passed its first winter (thus assuring its permanence), I at once set about making plans to secure herders from Lapland. There being no public funds available to meet the expense of sending an agent to Norway in order to secure skilled Lapp herders, I had recourse again to the private benefaction of friends of the enterprise, and $1,000 was contributed.[2] With your approval I at once sent Mr. William A. Kjellmann, the new superintendent, to Lapland. He sailed from New York City, February 21, 1894, on the steamship *Majestic*, to Liverpool. He then crossed England to Hull, and taking a steamer for Norway, reached Hammerfest, 300 miles north of the Arctic Circle (70° 40′ N. latitude), on March 8. In the face of an Arctic winter and raging snowstorms, the mercury 39° below zero, he pushed back into the mountains with reindeer and sled to Kautokeino, the center of the Finmarken district, where there were 65,000 reindeer. (Appendix, p. 79.)

Great difficulty was experienced in procuring the consent of the herders to leave their country and their people. The fact that there is not a single colony of Lapps in the United States or elsewhere, shows their intense love of home, and great unwillingness to leave it. In addition to their aversion to leave home and friends, they were afraid of the barbarous people among whom they were to be taken. However, after being assured of safe conduct and final return home (Appendix, p. 79), the following persons were secured:

Johan Speinsen Tornensis, wife, and one child under 1 year of age; Samuel Johnsen Kemi, wife, and two children, ages 1 and 4 years; Mathis Aslaksen Eira, wife, and one child 4 years of age; Mikkel Josefsen Nakkila and wife; Per Aslaksen Rist; Frederick Larsen. Some of these are men of property, owning large herds of reindeer, and have several thousand dollars deposited in bank. They can all read and write, and some of them speak the Finnish, Russian, and Norwegian

[1] Those who have read, in the appendix of the reindeer report of 1894, the letters of the various Scandinavians in the United States, who are acquainted with the management of the reindeer in Europe, can not fail to have been impressed with the unanimity with which they testify that the employment of expert Lapp herders is essential to the most successful introduction of domestic reindeer into Alaska.

[2] The contributors to the above fund were: Mrs. William Thaw, Pittsburg, $350; Mrs. Elliott F. Shepard, New York, $250; Miss Mary L. Kennedy, New York, $200; Mr. John Nicholas Brown, Providence, R. I., $100; Mrs. Helen Sinclair Robinson, Hawaiian Islands, $50; Mr. H. O. Houghton, Boston, $50.

languages. They brought with them a full supply of Lapp literature, including hymn books and Bibles.

Leaving Kautokeino on April 10, Hammerfest the 17th, and Christiana the 26th, they reached New York City May 12, 1894, the first colony of Lapps that ever set foot on the North American continent. Passing directly westward to Madison, Wis., they tarried there until Mr. Kjellmann, the superintendent, concluded his preparations for removing his family to Alaska. Leaving Madison May 21 over the Great Northern Railway, the party were caught in washouts in Montana. Transferring to the Northern Pacific, they finally reached Seattle June 2, and ultimately San Francisco, by steamer, June 5. At San Francisco, after twelve days' delay, the party was taken on board the whaling brig *W. H. Myers*, and sailed from San Francisco for the Teller Reindeer Station, Port Clarence, Alaska, where they arrived safely July 29, having traveled over 12,500 miles.

## CONTRACT LABOR.

The importation of skilled Lapp herders raised the question among a few of the newspapers whether it was not an infringement of the law "to prohibit the importation and immigration of foreigners to perform labor in the United States, its Territories, and the District of Columbia," approved February 26, 1885. The legality of the transaction was given early attention. The proposed action was brought to the attention of Mr. Herman Stump, United States Superintendent of Immigration, who, upon learning all the circumstances, decided that the case was provided for by section 5 of the above act, which reads:

> Nor shall this act be so construed as to prevent any person or persons, partnership or corporation from engaging under contract or agreement skilled workmen in foreign countries to perform labor in the United States in or upon any new industry not at present established in the United States: *Provided,* That skilled labor for that purpose can not be otherwise obtained. (23 Stat., 332.)

As herding reindeer was first established in the United States in 1892, and as there were no skilled reindeer herders in the country, their importation from abroad was very clearly within the law.

## APPRENTICES.

During the year fifteen Eskimo men were employed in the care of the herd and in securing supplies for the station. A list of names with ages and former residence is contained in the report of the superintendent. (Appendix, p. 72.) His report also gives the standing of each in the several duties required, and a table of rations issued for their support. Special mention is made of the faithfulness of Moses, who was sent from the St. James Mission on the Yukon River.

Constant changes are taking place in the band. Some become tired of regular duty and return home. Others are dismissed because of

habitual carelessness. Those that remained regularly made good progress and manifested an adaptation to the work that augurs well for their future success.

One of the tendencies observed in the apprentices is a feeling that as soon as they can throw a lasso and drive a team that they have learned all that they need to know, and that after a few months' service, they are fully competent to take the entire charge of the herd. I have noticed the same disposition among the natives of southeast Alaska in learning the carpenter or other trades.

Because a fireman on a locomotive learns to open and shut certain valves, and start, slow down, or stop the engine, it does not follow that he is competent to take the engineer's place. No more does it follow because an Eskimo man gains a little experience with reindeer that he is able to take charge of a herd. In Lapland where the people have greater intelligence and the advantage of heredity, a young man is required to serve an apprenticeship of five years before he is considered competent to manage for himself. Mr. William A. Kjellmann, who was brought up among the Lapps and spent much of his life in dealing with reindeer, writes wisely that—

> To learn to be a good herder or deer man takes as much time as to learn any other trade. It is not only necessary to learn how to throw a lasso, how to drive or keep good watch while with the herd, but the main part is to know how to take care of the fawns so that the herd can increase, to select a good sheltered place to keep the herd when the fawns are born, to know how to make use of every particle of the deer so that nothing is thrown away, and to learn to think and act quickly in an emergency, and stand any hardship when necessary to save the herd. All this may be looked upon by outsiders as soon learned, but it is not so. It is only acquired by attention and long practice.

In addition to their duties with the herd, a small amount of schooling was furnished, and arrangements have been made by which during the present year each apprentice will have four full months of school.

Besides food, clothing, and instruction each apprentice that does well throughout the entire year is given 2 female deer, at the end of the second year 5, and at the end of the third and each succeeding year that he remains at the station, 10. This, at the end of a five years' course, will give each one 37 deer with the increase which will probably bring his holding up to 50.

## HERD.

On the 30th of September, 1893, a count of the herd showed 343 head of reindeer. During the winter 20 were lost by disease and accident. During April, May, and June, 1894, 186 fawns were born, of which 41 were lost by being frozen or deserted by their mothers, the thermometer registering during the calving season 30° below zero.

During the summer of 1894, 120 head of deer were purchased in Siberia and transported to the Teller Station, making a total of 588.

*Breaking and driving.*—Special attention was given during the year in breaking the deer to harness and practicing the apprentices in driving.

In the fall of 1893 there were only 11 trained deer in the herd. During the winter 13 additional ones were broken in.

*Harness.*—Experiments were also continued with regard to harness. The Siberian harness consists of a strap around the neck of the deer and connected with a trace which passes between the forelegs and outside the hind legs to the sled. In long drives or hauling heavy loads the trace necessarily chafes the hind leg, and often disables the animal. Superintendent Lopp tried a harness consisting of collar, back and bellyband, and two traces, which doubled the drawing powers of the deer.

*Milking.*—Experiments with milking were not much of a success. For 6 herders to catch 5 cows, throw and hold them down, and milk with thumb and forefinger 1 quart of milk, usually required two hours.

Upon the arrival of the Lapps in the summer of 1894, a change was at once inaugurated. The Lapps milk the deer standing, just as cows are milked in the States.

When I left the station in the fall the Lapps were securing about 60 quarts of milk per day, which was being manufactured into cheese for winter use. Under their management much better results should be obtained this present year.

*Distribution.*—In August last 118 head of deer were given to Mr. W. T. Lopp, in charge of the mission of the American Missionary Association at Cape Prince of Wales, for the use of that station. (Appendix, p. 81.) This is the commencement of the policy of the Government to secure the active cooperation and assistance of all the missionaries in Alaska.

The missionaries being the most intelligent and disinterested friends of the natives, the Government naturally looks to them as the best agents through whom to reach them. From their position and work, having learned the character and needs of the people, they are best fitted to wisely plan and carry out methods for transferring the ownership of the deer from the Government to the natives in such a manner as will best facilitate the reindeer industry.

The Government further realizes the fact that the natives who most completely come under mission influence, civilization, and education are the coming men of affairs among their own people, and therefore are the best men to lead in a new movement.

At an early day herds will be turned over to the Episcopalian, Presbyterian, Roman Catholic, Moravian, Methodist, and Swedish mission stations.

I have also perfected arrangements by which on January 1, 1895, a herd of 100 should be loaned to Antesilook, Iziksic, Koktowak, Iupuk, and Soovawhasie (natives) for five years, at the expiration of which

time they are to return 100 head of deer to the Government, and retain the increase for themselves. (Appendix, p. 84.) This herd will be located about a day's journey south of the Teller Station, and will be under the general supervision of the Government superintendent. The natives will be accompanied and assisted by a family of Lapps.

The progress of this latter herd will be watched with special interest.

*Caribou.*—A large herd of wild reindeer exists from 600 to 700 miles inland, in the neighborhood of Fort Yukon, Porcupine River, and the Lower Mackenzie River. In small bands they are found within 100 miles of the coast, and extending from the Arctic south to the Alaskan peninsula. They are not accessible, however, to large numbers of the people, and it is much easier, speedier, and cheaper to procure those that have come down through generations of taming, than to attempt to catch and tame the wild ones.

### REINDEER AT UNALASKA.

In 1891 sixteen head of reindeer were purchased to disprove the assertions that the Siberians would not sell, and to prove by actual trial that the reindeer could be successfully transported by sea. No arrangements at the time having been perfected for herding them, they were turned loose upon the islands of Unalaska and Amaknak in Unalaska Harbor, where, uncared for, they have maintained themselves from that time to the present. Last winter four of the herd on Amaknak Island walked out on a ledge of snow which overhung a precipice, and the ledge breaking off under their weight, they were killed on the rocks below.

### STOCKING THE ALEUTIAN ISLANDS.

The success of the reindeer on the islands of Unalaska and Amaknak suggests the wisdom of stocking the whole Aleutian group. This remarkable chain of islands reaches out from the mainland of Alaska 1,000 miles toward Asia. It is composed of many islands sufficient in area and pasturage to maintain large herds of reindeer. The scattered Aleutian population, in the past supported by sea-otter hunting, are now being reduced to want by the disappearance and destruction of the otter. The introduction of reindeer would be to them a new and valuable source of food supply.

Again, between the islands are the passes which lead from the Pacific Ocean to Bering Sea and the Arctic. On the 11th of May, 1894, the whaling bark *James Allen*, attempting to sail through, struck a sunken reef off the east end of Amlia Island and went down, the crew taking to their boats. Twenty-five persons were drowned or died from exposure. And when, on June 14, Captain Healy, of the *Bear*, took the last nine survivors off of Unmak Island, they were found eating the dead body of a companion who had died two weeks previous. If those islands had been supplied with reindeer much of this starvation and loss of life could have been prevented. In view of the importance of

increasing the food supply throughout that desolate region, I would recommend that early steps be taken to turn loose a few reindeer upon the principal islands of the Aleutian group and the larger islands of the Bering Sea.

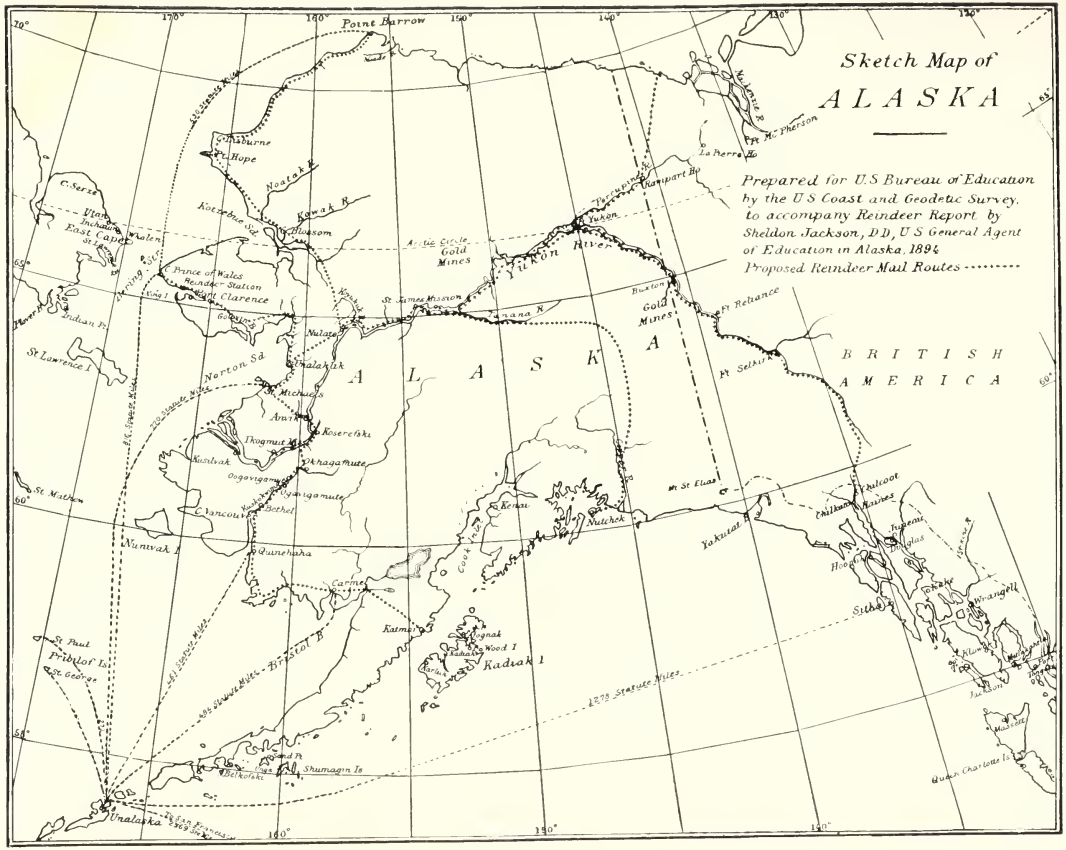
## REINDEER TRANSPORTATION.

From year to year increasing numbers of the whalers are wintering at Herschell Island, off the Arctic coast, northwest from the mouth of the Mackenzie River. Millions of dollars of capital are invested in these vessels and their outfits. If their owners in San Francisco, Cal., and New Bedford, Mass., could hear from them during the winter, it might make a difference of thousands of dollars in the supplies sent the following spring. With the general introduction of domestic reindeer throughout Arctic Alaska, it will be entirely feasible to send the mail from the whaling fleet, between four and five hundred miles across, to the mining settlements on the upper Yukon River, from the mining settlements, over the range, 850 miles, to southeast Alaska and civilization. The Postmaster-General is already arranging for a mail service to the Yukon mines.

During last summer unusually rich placer mines were discovered in the Yukon country, and with the large number of men in the United States out of employment, it is probable that increasing numbers will find their way to the Alaska mines. But a large number of miners can not be maintained in that barren country without increased facilities for taking in food supplies. Two river steamers make two round trips a season upon the Yukon for a distance of about 2,000 miles. But these steamers can not ascend the tributaries of that mighty river, and it is upon the tributaries that the rich mines, so far as known, are situated. The river steamers land their supplies at trading posts at the mouths of these tributaries, and then the difficult question presents itself of getting the supplies to the mines. They can partly be taken on dog sleds, and partly packed upon the backs of Indians. The latter is very expensive and the former insufficient. There are not dogs enough in the country to take in an ample supply. Hence the miners are clamorous that reindeer should be secured in larger numbers so that they can have some for transportation purposes.

Again, at intervals of from 200 to 500 miles Government schools and missionary stations are distributed along the coast from Point Barrow southward, and in the valleys of the great rivers. It is important to the greater efficiency of these stations that they have more frequent communication with the outside world than once a year, as at present. It is also an act of common humanity to bring them more closely in touch and sympathy with their friends. This can be done with the general introduction of the domestic reindeer.

At Point Barrow there is a Presbyterian mission and school, a Government refuge station, and two shore whaling stations in charge of




POSSIBLE MAIL ROUTES.

white men. From Point Barrow a reindeer express can carry the mail 360 to 400 miles down the coast to Point Hope. At Point Hope is an Episcopal mission and school and two shore whaling stations. From Point Hope the express would go southeast 420 to 500 miles to Nulato, on the Yukon River.

Commencing another line at Bering Straits it would convey the mail from the Congregational mission at Cape Prince of Wales, the Government reindeer station Port Clarence, and the Swedish mission at Golovin Bay to Nulato. From Nulato the express could go southward, taking in a large number of mission stations and trading posts, across the Alaskan peninsula to Katmai on Shelikoff Straits, where it could connect by steamship with San Francisco. From Nulato to Katmai would be, approximately, 850 to 900 miles.

But as the Post-Office Department will first open mail communications with the mining camps on the upper Yukon, it will be more feasible for the present to run the reindeer express up the Yukon River to the mining settlements, and connect the southwestern settlements with this trunk line. At Nushagak (Carmel) on Bristol Bay, southwestern Alaska, is a Moravian mission and school, a Russo-Greek mission, and several large salmon canneries. Starting at Carmel the express can carry the mail via the Moravian station at Quinehaha and the salmon canneries in the vicinity of Bethel, 400 miles. At Bethel is a Moravian mission school and trading place. From Bethel up the Kuskoquim River via Moravian mission Ogavigamute, the Russo-Greek mission Oogovigamute, the Roman Catholic mission, Okhagamute, thence across to the Russo-Greek mission at Ikogmute on the Yukon River, up the Yukon River to the Roman Catholic mission at Koserefski, the Episcopal mission at Anvik, the Russo-Greek mission and seaport trading place at St. Michael, and the Swedish mission at Unalaklik to Nulato, about 500 miles from Bethel. At Nulato the branch lines from Point Barrow, Cape Prince of Wales, and Carmel unite in a trunk line up the Yukon River to St. James Mission (Episcopal) 200 miles.

In the future, if found necessary, a route can be had up the Tanana River, across to the Copper River and down the Copper to Nutchek, on an island in Prince Williams Sound. But for some years to come there will be no need to go that way.

Continuing up the Yukon River from St. James Mission the route would lead to Fort Yukon (250 miles), where it would be joined by the branch line from the whaling fleet (400 miles); from thence to Buxton in the mines (200 miles), where it would connect with the mail to Haines and southeast Alaska (770 miles). The trunk line with its several branches would number 4,000 miles. To Katmai and Nutchek would add 900 to 1,000 additional miles.

The United States Coast and Geodetic Survey has furnished an excellent sketch map of the vicinity of the Teller Reindeer Station and of these proposed routes, both of which are included in this report.

To make this express possible it is essential that the reindeer shall be widely distributed throughout all northern Alaska, and to accomplish this in the near future will require some more rapid method of securing the animals.

*A purchase station in Siberia.*—The experience of the past three years has demonstrated the fact that the present system of purchasing deer is too slow and tedious. The season when the ice conditions are favorable on the coast of Siberia is usually confined to about six weeks in July and August. The ship visits a village in the neighborhood of a small herd, and sometimes a week is consumed in securing a load. As a result, notwithstanding constant diligence during the few weeks that could be devoted to it by the cutter *Bear*, we only succeeded in purchasing, in 1892, 171; in 1893, 124, and in 1894, 120 head of deer. At this rate of increase it will take many years to accomplish the purposes of the Government. What is now necessary is some method by which the deer can be procured in large numbers. If, instead of delaying the ship while tedious negotiations are pending, some one could be sent on in advance to make the purchases and have the animals gathered ready for shipment, it would greatly facilitate matters. Instead of transporting 100 or 200 head a season, there is no reason why 1,000 should not be secured.

Last season a movement was made in this direction by Captain Healy detailing Lieut. C. M. White and a seaman and sending them up the coast to negotiate for deer. This experiment was not very successful. Although Lieutenant White secured the promise of a large number, yet when a ship came along to collect them, many of the owners backed down and failed to deliver according to promise.

I think, however, that if, with the consent of the Russian Government, a party could be placed on the Siberian coast in the fall with a supply of trade goods, and left through the winter to barter with the deer men, a large number of animals could be secured.

With a supply store within reach, the deer men would come as often as their necessities required, and in the place of money (of which they have no knowledge) barter deer in exchange for supplies. As the deer came in from time to time they could be made into a station herd, and Siberians employed to herd them. The following summer, being gathered into one place, the ship would have nothing to do but to transport them, which could be easily done. Such a course might not meet expectations, but in the absence of some better plan I would like to see it tried, and therefore respectfully recommend it to your favorable consideration.

*Columbian Exposition.*—The reindeer exhibit made by the Bureau of Education was awarded a diploma by the World's Columbian Exposition at Chicago. (Appendix, p. 84.) In this connection I have placed in the Appendix the official report on reindeer made by Dr. S. S. Lofstrom, actuary of the royal Swedish statistical central bureau, World's Columbian Exposition, 1893. (Appendix, p. 93.)

Travelling with Reindeer. (Eskimo Drawing)

*Monograph on the caribou.*—Last year it was my privilege to furnish a valuable monograph by the Hon. Rasmus B. Anderson upon the domestic reindeer of the world. This year I am equally fortunate in securing a monograph on the wild reindeer or caribou, from the pen of Mr. Charles Hallock, M. A., M. B. S., ex-editor of Forest and Stream. (Appendix, p. 86.)

ITINERARY.

Leaving Washington City on the 16th of April, I reached San Francisco on the 24th. After arranging for the transportation of the Lapp colony to the reindeer station in Alaska, and also of the supplies for that station, I left San Francisco on the evening of the 25th and joined the United States revenue cutter *Bear* at Seattle, Wash., on the 28th. Under instructions from Washington, the *Bear* got underway for Sitka on the 5th of May. The trip up the coast was a rough and stormy one; snow squalls were encountered almost every day. On the morning of May 10, off Dixon's Entrance, in a driving snowstorm, the gale became so severe as to split the fore-staysail, carry away the grips of the third cutter, and deluge the galley with water. At the same time the wheel ropes parted and the ship had to lay to; the sea was so rough that no attempt was made to set the table in the captain's cabin, but we took our meals in our hands in the pilot house as best we could.

Dixon's Entrance was named for Capt. George Dixon, commanding the English ship *Queen Charlotte*, which visited this region between 1775–76. The straits, however, had been discovered by Capt. Juan Perez, of the Spanish expedition of 1774. The first white man to navigate these waters was Captain Douglass, in the *Iphigenia*, in 1789. These waters mark the boundary line between British Columbia and Alaska. Crossing the mouth of Dixon's Entrance we were again in American waters—in Alaska, the region of the celebrated exploring expeditions of a century ago.

In 1741 Vitus Bering, in the *St. Peter*, reached as far eastward along the coast of Alaska as Kayak Island, and looked upon the glories of Mount St. Elias. The same season, his second in command, Alexei Chirikof, in the *St. Paul*, reached the region of Sitka and Cape Prince of Wales Island. The discoveries of Bering and Chirikof, together with their report of the abundance of furs, set the merchants of Siberia wild with excitement. As in later days there was a rush to the newly-discovered gold fields of California, so in Siberia more than sixty companies were organized to gather in the harvest of furs. Unwilling to await the proper construction of seagoing vessels, flatboats and small schooners were hastily constructed of hewn planks lashed together with rawhide thongs—vessels that would float in fair weather, but were unable to hold together in storms. In these frail crafts expedition after expedition followed one another in rapid succession, and the half of them were lost, but those that did return in safety with a fair cargo divided profits of from $1,500 to $3,000 per man.

In the eager search for furs new sections were visited, until the whole southern coast from Attou to Sitka became known. Among these early adventurers were Capt. Emilian Bassof, 1743 (the first white man to land on the island of Attou); Mikhail Nevodchikof, 1745; Andrei Tolstykh, 1747; Nicofor Trapeznikof, 1749; Emilian Yugof, 1750; Peter Bashnakf, Feodor Kholodilof, and Simeon Krassilnikof, 1753; Radion Durnef, 1755; Andrei Tolfstykh, 1756; Ivan Shilkin, 1757; Stepan Glotlof, Demetri Paikof, 1758; Gerassim Pribylof, Grigor Shelikof, Alexander Baranof, Lastochkin Lebedef, Ferdinand P. Wrangell, and hundreds of others of lesser note. These trading expeditions were supplemented by explorations under the auspices of the Russian Government and Russian-American companies.

In 1778 the *Trekh Sviatiteli*, in command of Masters Ismailof and Bocharof of the Imperial navy, was dispatched by Shelikof in search of new lands to the eastward of Kadiak. Capt. Joseph Billings, commanding the *Slava Rossie* (*Glory of Russia*), was sent in 1790 on a secret "Astronomical and geographical expedition for navigating the frozen sea, describing its coasts and ascertaining the situation of the islands in the seas between the two continents of Asia and America."

On the 7th of August, 1803, Lieutenant Krusenstern, in the *Nadeshda*, and Uri Lisiansky, in the *Neva*, sailed from Kronstadt with a party of scientists (among them being the naturalist, Langsdorf), a force of shipwrights and skilled workmen for shipbuilding, supplies of charts, instruments, and nautical works. In April, 1804, the two ships rounded Cape Horn. In June they visited the Sandwich Islands, where they separated, the *Nadeshda* proceeding to Petropavlovsk in Kamchatka, and Captain Lisiansky in the *Neva* continuing on to Alaska, arriving at Kadiak on the 13th of July, 1804, the first Russian expedition to visit Alaska around Cape Horn.

Otto von Kotzebue, commanding the brig *Rurik*, sailed from Petropavlovsk in the summer of 1816 in search of a "Northwest passage." He was accompanied by the scientists, Chamisso and Wormskloid, Dr. Escholtz, and Artist Choris. Passing through Bering Straits and discovering a large inlet to the eastward, he rejoiced to believe that he had found the long-looked-for passage. On August 1, 1816, he entered the new sound with the *Rurik* only to find a few days later his mistake.

In 1822 Captains Khramchenco and Etholin, and Master Vassilaief, in the brig *Golovnin*, and schooner *Baranof*, made a detailed survey of the Alaska coast of Bering Sea from Bristol Bay to the mouth of the Kuskowim, and from St. Michael to Golovin Sound.

In 1827 Capt. Feodor P. Lütke, by directions of the Russian Government, made a careful survey of the northern coast of the Aliaska peninsula.

In 1828 Captain Hagemeister, in the *Krotky*, and Captain Staninkovich, in the *Möller*, made important surveys on the coast of Bering Sea.

In 1829 Master Vassilaief, accompanied by Alexander Kolmakof, a creole, crossed the Aliaska peninsula from Shelikof Straits via the lakes to the Kuskokwim River. During this expedition Kolmakof selected the site of a trading post, which was built in 1831, and in 1841 a redoubt named after him was built near the junction of the Kuskokwim and Kvigin rivers.

In 1830 Midshipman Etholin was placed in command of the brig *Chicagof* and sent to explore Norton Bay, Sledge, King, and St. Lawrence islands. Upon his return he advised the establishment of a station on Stuart Island (St. Michael).

In 1833 Lieutenant Tebenkof was sent in the sloop *Ourupa* to establish a trading post on Norton Sound and make explorations inland. The new post was named Mikhaielovsk. The inland explorations were committed to Andrei Glazanof, a creole. The party, with three native guides, and two sleds, each drawn by five dogs, set out on the 30th of December, 1833, and after great hardships reached as far as Anvik on the Yukon River, and Painagamute on the Kuskokwim River.

In 1838 Alexander Kashevarof, a Kadiak creole, was sent to explore the Arctic coast. Being landed from the brig *Polyfem*, he continued northward in five three-holed bidarkas, reaching within 100 miles of Cape Beechey. The same year Vassili Malakhof explored the Yukon as far north as Nulato, where he built a block house. In 1842 Lieutenant Zagoskin, of the Imperial navy, explored the Kuskokwim and Yukon rivers and their tributaries.

The rapid extension of the Russian occupation of the American coast from 1743 to 1800 attracted the attention and excited the jealousy of other European nations, and especially of Spain, who looked upon Russian encroachments in the north as imperiling her interest in California. Consequently, in 1774, Capt. Juan Perez, commanding the *Santiago*, was ordered to cruise on the North Pacific coast and take possession of new lands in the name of Spain. He reached as far north as Dixon's Entrance. The next year he was followed by Lieut. Juan Francisco de Bodega y Cuadra in the *Senora*, reaching the Cross Sound. On the shores of Salisbury and Bucarelli sounds wooden crosses were erected as notification of Spanish claims.

In 1779 Lieut. Ignacio Artega, commanding the *Princesa* and *Favorita*, under orders from Spain, sailed from San Blas February 11, and went westward as far as Cook's Inlet, at Nuchek, taking formal possession of the country.

In 1791 Alejandro Malaspina, commanding the corvettes *Descubierta* and the *Atrevida*, sailed May 1 from Acapulco for Prince William Sound in search of the Northwest Passage and new lands for the Crown. In 1788 an expedition in command of Alferez Eslevan Jose Martinez, consisting of the *Fragata Princesa* and the *Paquebot San Carlos*, in command of Pilot Gonzalo Lopez, was sent along the coast to the Aleutian Islands. And in 1790 Lieut. Salvador Fidalgo, in the *Paquebot Filipina*, visited Prince William Sound and Cooks Inlet.

England, then as now, wide awake for colonial extension, followed the example of Spain and sent, in 1778, two years after the second Spanish expedition, Capt. James Cook, commanding the *Resolution* and the *Discovery*, and five years later the *Discovery* and the *Chatham*, in the command of Capt. George Vancouver; then in the present century, in search of Sir John Franklin, the expedition of the ship *Blossom* in 1825–1828, Capt. F. W. Beechey commanding, and in 1836–1842 the expedition of Capt. Edward Belcher.

Supplementing the Government explorations were the English trading expeditions of Capt. George Dixon in the *Queen Charlotte*, and Capt. Nathaniel Poetlock in the *King George* in 1786; Captain Hutchins in the *Prince of Wales* in 1787, and Capt. John Mears in the *Nootka* in 1789.

In 1786 France sent out an expedition consisting of the two frigates, *Astrolabe* and *Boussole*, in command of Capt. J. G. F. de La Perouse, and in 1791 Capt. Etienne Marchand, commanding the *Solide*.

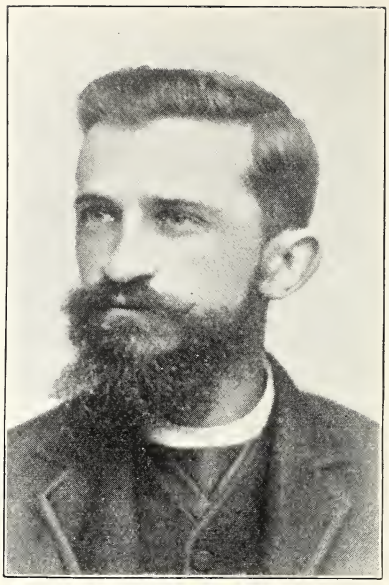
In 1790 the Swedish Government sent to the Aleutian Islands the cruiser *Mercury* in charge of Captain Coxe.

American trading vessels were visiting Alaska prior to 1785, but no Government exploration was undertaken by the United States until Commander John Rogers's expedition around the world in 1854–55, and of the Aleutian Islands in 1856 by the United States schooner *Fenimore Cooper*, in charge of Lieutenant Gibson, United States Navy.

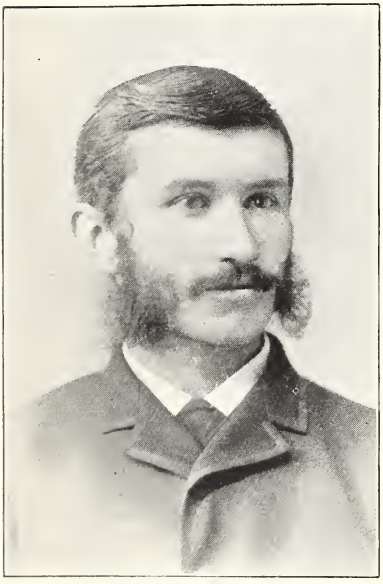
Returning to Dixon's Entrance, the extreme southwestern point of the Alexandrian Archipelago, which we are entering, is Cape Mazon, near to which, on Kaigahnee Straits, is Jackson, a mission station of the Presbyterian Church to the Haidai tribe. Here in 1881 I established a mission school with Mr. J. E. Chapman as lay teacher. In 1882 he was replaced by Rev. J. Loomis Gould and family, who have faithfully held the fort until the present. Mr. Gould has built up a church of ninety members, and Mrs. A. R. McFarland, under the auspices of the Woman's Executive Committee of Home Missions, a mission home. The day school established by the church in 1881 was, in 1885, turned over to the Government.

Steaming northward along the bleak and snow-covered mountains of Prince of Wales Island, we pass the small outlying Forrester Island, named in 1774 by Perez as Santa Christina, and by Cuadra as San Blas. Wolf Rock Island and Cape Bartolome are reached all unseen in the storm, and we are off Bucareli, which, with Kasaan Bay, almost cuts Prince of Wales Island in two. This large sound seems to have been a favorite with the early Spanish exploring parties. On the 24th of August, 1775, the expedition under Cuadra, being greatly impressed with the location and character of the sound, sent a party on shore, who, after erecting a large wooden cross and celebrating a solemn high mass, took possession for Spain with waving banners and discharge of musketry. The waters were called Bucareli Sound.

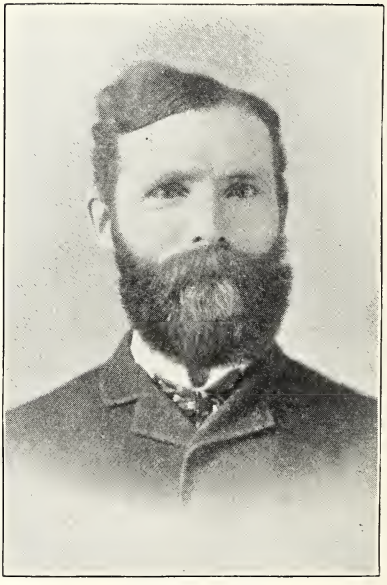
Rev. J. Loomis Gould.



S. A. Saxman.



Rev. Eugene S. Willard.



William A. Kelly.

TEACHERS, SOUTHEAST ALASKA.

In 1779 Lieutenant Artega visited the sound and repeated the solemnities of taking possession. In connection with Cuadra, who was second in command, they made a complete survey of the sound, which survey is the best that has thus far been made. This accounts for the Spanish nomenclature on the charts. The next visit of the Spanish was in 1792, when Lieut. Jacinto Caamano in the frigate *Aranzazu*, came searching for the Northwest Passage.

In the northeast corner of the sound is the small fishing station of Klawak. Here in 1886 I established a school with Rev. L. W. Currie as teacher. The first winter the school was kept at the native village of Tuxikan in a native house, Mr. Currie and family occupying a portion of the room curtained off with drilling, the owner another portion, and the school and church the center. The following summer they removed to Klawak, where a school and teacher's residence were built.

Passing along the seaward side of Iphigenia Bay at 11.20 a. m., we were off Coronation Island. We were also off the mouth of Sumner Straits, at the eastern end of which is the village of Fort Wrangell with its Government school and Presbyterian mission. Passing Christina Sound and the Hazy Islands, we were soon abreast of Cape Ommaney, the southernmost point of Baranof Island. This island is about 85 miles from north to south, and about 20 miles wide. At 7.30 p. m., we made Biorka Island, at the southern mouth of Sitka Sound. At 9.50, it being too foggy to attempt to make the harbor, the steamer stood off and on until morning. At 1.30 a. m. the *Bear* stood in for Sitka Sound, and at 3.20 a. m. hauled up between Cape Edgecumbe and Biorka Island.

Cape Edgecumbe is the southwestern point of Kruzof Island. This island is noted for the extinct volcano of Edgecumbe at its southern end (see Professor Libby's account and Findlay's Alaska Directory, pp. 52, 53). Cuadra in 1775 named the cape Cabo de Engano, and the mountain San Jacinto. These names were changed in 1778 by Captain Dixon to the present name of Edgecumbe. The Tchinkitanc of the natives, the Baya de Gaudalupa of the Spaniards, and the Norfolk Sound of Captain Dixon is now known as Sitka Sound.

Just over Biorka, to the eastward a few miles, is a group of hot and cold sulphur and iron springs. The waters are impregnated with sulphur, iron, manganese, and chlorine, 97 per cent being sulphur. During the Russian occupation a small hospital was established and maintained at the springs for the treatment of skin diseases.

At 5 a. m. we were off Vitskari Island, and at 6.25 a. m. dropped anchor in Sitka Harbor in front of the Presbyterian mission. The harbor of Sitka, with its large number of islands and islets, is one of surpassing beauty, and forms one of the most picturesque and attractive locations for a town in the United States.

In the closing years of the eighteenth century, it being found that the fur-bearing animals of western Alaska were rapidly decreasing in

number, the attention of Baranof was directed to the new sources of supply in southeastern Alaska. About the same time the Hudson Bay Company was extending its operations eastward across the continent to the coast, and American ships had found out the profitable fur trade of the same region. Baranof, to extend his trade, hedge off the English, and place himself in easy communication with the American vessels, from whom he could procure breadstuffs and other supplies, determined to establish a settlement in the Alexander Archipelago. After a long period of preparation he set sail on the 10th of April, 1799, from Kadiak in the brig *Elizaveta* and sloop *Konstantin* with 22 Russians and from 500 to 600 Aleuts, with 200 canoes. At Nutchek he was joined by Kuskof with from 300 to 400 Aleuts and 150 canoes. Rounding Cape Suckling 60 men were lost by the capsizing of the boats, and soon after a number of others were killed in a night attack of the natives. However, on the 25th of May, in a driving storm of sleet and snow, the mountains covered with snow to the water's edge, the expedition reached Sitka Sound and effected a landing at Bay of Starri-Gavan, 6 miles north of the present site of Sitka.

Negotiations were entered into with Katlian, who seemed to be the leading Sitka chief, and the land for a settlement was purchased of him for some beads. Keeping one-half of the force at hunting sea otters, the other half was set to work on the buildings, and soon the sound of axes and the crash of falling trees proclaimed the commencement of civilization in that region. The place consisted of 6 buildings, a stockade, and 3 fortified blockhouses, and was named Fort Archangel Michael. In the spring of 1800 the force numbered 25 Russians and 56 Aleut men, besides women and children. At the time of Baranof's landing the American ship *Caroline*, of Boston, Captain Cleveland commanding, was at anchor a few miles off, trading for sea-otter skins with the natives. Having established the Sitka settlement, Baranof returned to Kadiak in the fall of 1800, leaving Vassili Medvednikof in command.

With the chief factor absent, and no doubt more or less oppression on the part of the Russians, the natives abided their time. In the spring of 1802 they gathered the warriors from all the surrounding tribes, and on a Sunday in June, when a majority of the Russians and Aleuts were off hunting and fishing, they made an attack on the new settlement, which was quickly taken and burned to the ground; then attacking the outside hunting parties, killed them off in detail, but 3 Russians and 2 Aleuts escaping to the woods. A few days latter these were found and taken on board the *Unicorn*, an English ship under Captain Barber, which was in the vicinity trading. Soon after another English ship and an American trading ship arrived. By detaining the native chief and others on board ship and threatening to hang them, 18 women were ransomed, making 23 in all that were saved. These were taken to Kadiak by Captain Barber.

The destruction of Fort Archangel Michael was a heavy blow to Baranof, but he was so occupied with other sections that it was not until the spring of 1804 that he was able to set out to reestablish his settlement in Sitka Sound. In March, 1804, Baranof received word that the Emperor had raised him to the nobility, creating him a "Collegiate councilor." This new mark of the Emperor's appreciation of his work affected him to tears, but with the memory of Sitka ever upon his mind, he exclaimed: "I am a nobleman, but Sitka is lost. I do not care to live. I will go and either die or restore the possessions of my august benefactor."

Having completed his arrangements on the 2d of April, Baranof sent foward two ships in command of Demianenkof, and two days later sailed himself with the sloops *Ekaterina* and *Alexander* and 300 bidarkas, making a combined force of 120 Russians and 800 Aleuts with which to meet and overcome the five or six thousand native warriors that could be massed against them. Arriving at Yakutat, he was reinforced by Kuskof with the small sloops *Yermak* and *Rostislaf*, which had been built for the occasion. On the 25th of August Baranof left Yakutat on board of the *Mermak*, reaching Sitka Sound September 19, whither the *Alexander* and *Ekaterina* had preceded him. And with them was the ship *Neva*, Captain Lissianski having unexpectedly arrived from Russia via Cape Horn and Kadiak. The natives were found intrenched upon an island rock 60 feet above tide water.

On the 1st of October four of the ships were anchored off the native stronghold, and fire was opened from the ships, followed by a desperate charge led by Baranof himself. The assault was repulsed, with the loss of eleven men and the wounding of Baranof and Lieutenants Arbuzof and Pofalishin. The following day the ships opened a furious bombardment, which caused the natives to sue for peace. Three days were consumed in negotiations without the stronghold being surrendered, when, on October 6, Captain Lissiansky, who, at the request of Baranof, had taken charge of the hostilities, constructed a raft, upon which he moved two guns nearer the fort. An interpreter was again sent to demand an immediate surrender of the post, and brought back word that the natives would leave at high tide. But the tide rose and fell without any apparent movement within the fort. Late in the night a weird, wailing chant was heard in the fort, and all was still. It was the death dirge as they killed their infants and small children lest their cries should betray their flight. Then silently stealing out of the fort into the woods, they escaped unobserved. In the morning a flock of ravens circled over the fort and fed on the slain. When the Russians entered the stockade they found the bodies of thirty warriors and all the small children.

This place had been originally selected by Baranof as the site for a settlement, and it was now taken for that purpose. The rock fortress was burned to the ground and its site was taken for the location of the residence and offices of the Russian commander, and the foundations

laid for Novo Arkhangelsk, the capital of Russian America—the Sitka of to-day. During the winter of 1804–5 eight buildings were erected and surrounded with a substantial stockade, with blockhouses and mounted cannon at the angles. In the spring the ground was cleared and several vegetable gardens started. But that the accommodations were still far from comfortable we may see when Count Rezanof writes a few months later in an official report:

> We all live poorly, but worse than all lives Baranof, in a miserable hut, so damp that the floor is always wet, and during the constant heavy rains the place leaks like a sieve.

In 1809 Baranof's hut was destroyed by fire, giving place to a more comfortable residence, so that Captain Golovin, of the Russian navy in 1810, writes, the fort—

> consisted of strong wooden bastions and palisades; the houses, barracks, magazine, and manager's residence of exceedingly thick logs. In Baranof's house the furniture and finishing were of fine workmanship and very costly, having been brought from St. Petersburg and England. But what astonished me most was the large library, in nearly all European languages, and the collection of fine paintings.

In 1827 the second castle being thrown down by an earthquake was removed and the summit of the rock crowned with a still larger building, which has since been known as the governor's palace. The building was constructed of large cedar logs squared on the sides and dovetailed together at the corners. To prevent its being destroyed by an earthquake, copper rods were run through the logs and bolted to the rocks upon which the house stood. It was 140 by 70 feet in size, two stories high, and crowned with a cupola, in which at night lamps were placed to guide incoming mariners. The building was surrounded by a stockade and defended by a battery of guns that extended halfway around it on the seaward side. At the northwest or land side it was approached by a long flight of steps. Upon a landing halfway up was another battery and a sentry. The second floor of the palace was given up to state apartments, and used for receptions, balls, public dinners, etc. In the center was the grand saloon 70 feet square. Opening out from the saloon on the one end was a drawing-room extending the whole breadth of the building, 35 by 70 feet in size, and from the other end a drawing-room and billiard room, each 35 feet square. On the first floor were the parlor, library, bedrooms, dining room, and kitchen. In the grand saloon, upon the anniversary of the Emperor's birthday, and other festive occasions, the governor was accustomed to give a dinner to all the officials and leading chiefs in the place. Sir George Simpson, governor-general of Rupert Land, in his journey around the world, visiting Sitka in 1842, writes of the farewell dinner given him by Governor Etholin:

> The farewell dinner, to which about thirty of us sat down, exceeded in sumptuousness anything I had yet seen, even at the same hospitable board. The glass, the plate, and the appointments in general were very costly; the viands were excellent, and Governor Etholin played the part of host to perfection.

The last of these regal festivities was on the 18th of October, 1867, in honor of the transfer on that day of the Territory to the United States. That night a grand ball and dinner were given to the distinguished officials and naval officers of the United States and Russia who were present at the ceremonies, followed by an illumination and fireworks.

After the transfer this historic building was occasionally occupied by American officials until, gradually falling into decay, it was abandoned. Its portable furniture, lamps, brass chandeliers, and even the great, quaint hinges on its doors, were stolen. Tourists cut out and carried away its carved railings, and town boys amused themselves by throwing stones through its windows. The doors and sash were boldly carried off to do service in other habitations, and when I first saw the building in 1879, many of its windows and doors were gone, and the floor of the grand saloon covered with rubbish. It remained, however, until the last a favorite resort for tourists from the steamers, and an opportunity to dance in the grand saloon was greatly prized. In late years added interest has been given to the building by speaking of it as haunted by the ghost of a beautiful Russian lady, the daughter of a former governor, who disappeared from the ballroom on her wedding night, and was found dead in one of the smaller drawing-rooms. On the anniversary of her wedding night, and again on Easter night, clad in her wedding garments and wringing her jeweled hands, her spirit is said to glide from room to room, leaving the perfume of wild flowers behind her.

In 1893 the Government expended $14,000 in repairing the castle for the uses of the United States district court. At 2 o'clock on the morning of March 17, 1894, flames were seen issuing from the building, and in four hours the most noted landmark and historic building of Sitka was a heap of ashes.

With the erection of the first governor's residence and fort in 1804–5 the tongue of land at the base of the fortified rock was gradually cleared of trees and stumps and a commencement made in the building of the village. From time to time several large apartment houses or flats were erected for the use of the employees of the company. There was special activity in the erection of large public buildings during the time that Count Rezanof was governor. Some of these log buildings were 150 by 80 feet in size, and from two to three stories high, with large attics under the roof. A heavy stockade was erected around the whole village, with fortified blockhouses at the angles. Upon the removal of the United States troops in 1877, the natives, believing that the country had been abandoned by the Government, arose in 1877, tore down the stockade, and would have murdered the white inhabitants but for the timely arrival of a British gunboat.

A small portion of the stockade remains in the rear of the governor's garden, and also two of the blockhouses.

Under the indomitable energy of Baranof, Sitka (Novo Arkhangelsk) became not only the political capital of Alaska (Russian America) and the headquarters of the Russian-American Company, but also the commercial metropolis of the Pacific Coast, possessing docks, shipyards, brass, iron, and bell foundries, machine shops, saw and flour mills, brickyards, woolen cloth mills, besides manufactories for agricultural implements, a copper-engraving establishment, large warehouses, an observatory, hospitals, a library, Russo-Greek and Lutheran churches, the bishop's residence, schools, a theological seminary, and an officers' clubhouse. During this period San Francisco was known simply as a Roman Catholic mission to the Indians.

Two and one-half years from the commencement of the settlement of Sitka a fine brig was launched from its shipyard and christened *Sitka*. The following summer a three-masted schooner of 300 tons was launched and named *Otkrytie* (*Discovery*); and Mr. A. J. Findlay, writing to the Nautical Magazine in June, 1849, says:

> The arsenal is the next object which arrests the attention of a stranger, from the number of men employed either building new or repairing old vessels. At this moment they are building a new steamer, destined, I think, for Mr. Leidesdorf, of California. The workmanship appears good and solid; everything for her is made on the spot, for which purposes they have casting houses, boiler makers, coopers, turners, and all the other "ers" requisite for such an undertaking. The boiler is almost completed and is made of copper. They also have their tool makers, workers in tin and brass, chart engravers, sawyers, and sawmills, for all which occupations suitable establishments have been made.

At the time of the transfer a fleet of 15 sailing vessels and 2 ocean steamers went and came from its harbor. Before the American occupation of California the Sitka foundry furnished the Romish missions of California with their chimes of church bells, and Sitka manufactories supplied the California ranchmen with their agricultural implements.

The annual reports of the observatory were published by the Academy of Sciences at St. Petersburg. The Sitka Library, established by Count Rezanof in 1805, contained, in 1835, 1,700 volumes, 400 periodicals and pamphlets, and a valuable collection of charts. Of the books, 600 were in the Russian language, 300 in French, 130 in German, 35 in English, 30 in Latin, and the rest in Swedish, Dutch, Spanish, and Italian. The 39 copper plates of Tebenkof's celebrated Atlas of Alaska were engraved at Sitka by Terentief, a creole.

To provide more comfortable accommodations for unmarried officers and officials of the higher rank, many of them sons of the nobility of Russia, Governor Etholin built a large clubhouse.

Within a year from the commencement of the settlement (1805) a school was established. In 1820 its efficiency was greatly increased. In 1839 a home school for orphan girls, daughters of the employees of the company, was established. In 1840 a similar school was opened for orphan boys. In 1841 a theological school was also opened.

The first Russo-Greek priest arrived at the new settlement in 1816. Before the transfer to the United States, the Russo-Greek Church had a resident bishop with 15 priests, deacons, and followers; also a cathedral, church, and Episcopal residence. The Lutheran Church had its minister and church building, both the Greek and Lutheran churches being sustained by the imperial treasury.

With the American occupation, a great change came over the scene. Shipbuilding ceased, and the shipyard was filled up to make a parade ground for American soldiers. Manufactories, foundries, and all other industries were closed, only two sawmills and a beer brewery remaining. The skilled mechanics and Russians largely returned to Siberia. The bishopric and theological seminary were removed to San Francisco. The books of the public library were "lost, strayed, or stolen;" no trace of them now remains. Three of the large Russian buildings, including the castle and hospital, have been destroyed by fire. The Lutheran church, condemned as unsafe, has been torn down. The clubhouse, too, has been adjudged unsafe, and, with some of the warehouses and other buildings, will have to be torn down. The civilized, industrious population of several thousand has dwindled down to several hundred, and where thousands earned a living by their trades, the few hundred that remain are largely dependent, directly or indirectly, upon the salaries of the Government officials and the summer patronage of curio-buying tourists.

For a short time after the transfer Sitka had a boom, as wide-awake speculators rushed in, anticipating the creation of a large city. A region several miles square, reaching from the sea to the tops of the mountains, was mapped on paper into streets, parks, and city lots. A municipal government was organized, with a mayor and common council. A newspaper, the Sitka Times, was started and published weekly for eighteen months. But the enterprising speculators, failing to realize their hopes, one after another returned south, and the withdrawal of the troops in 1877 seemed to complete the decline of Sitka. The census of 1880 revealed the presence of but 157 Americans and 219 creoles in the deserted city. The same census, however, showed a native Thling-get population of 540.

The Thling-get village of Sitka is about as large to-day as in Russian times, and in much better condition. Largely under the influence and teaching of the mission and school maintained among them since 1880 by the Home Missionary Society and the Woman's Executive Committee of Home Missions—both of the Presbyterian Church—the Thling-gets have made considerable advance in civilization. The old damp, dark, and smoky native buildings with their bark roofs are giving place to modern buildings with windows, doors, wooden floors, chimneys, and shingle roofs. Stoves are taking the place of a fire on the floor in the center of the room; chairs, tables, dishes, and bedsteads are becoming common. And on Sundays the crowds that wend their

way to church are dressed in good "store clothes" of American manufacture. And to-day the only ones learning trades are not the sons of Russian creoles, but of the Thling-gets, at the Presbyterian Industrial Training School, at Sitka. This institution has 14 buildings, and is distinctively coeducational. The boys and girls recite in the same classes, dine together in the same dining room, and, under wholesome restraint, have opportunities for social intercourse.

A few years of sedulous training have developed in some of the older pupils a spirit of emulation, a sense of personal responsibility, self-respect, self-reliance, and self-helpfulness which command respect. Most of the large boys, advanced far enough to read intelligently in the second reader, are learning a trade (all being in school half of each day and at work half a day), and the diligence with which they pursue their studies and the zest with which they enter upon industrial work day after day are most praiseworthy of them and encouraging to their instructors. All of the shoes for the pupils of the school are hand-made in the shop, under the direction of a competent foreman. Considerable custom work is also done.

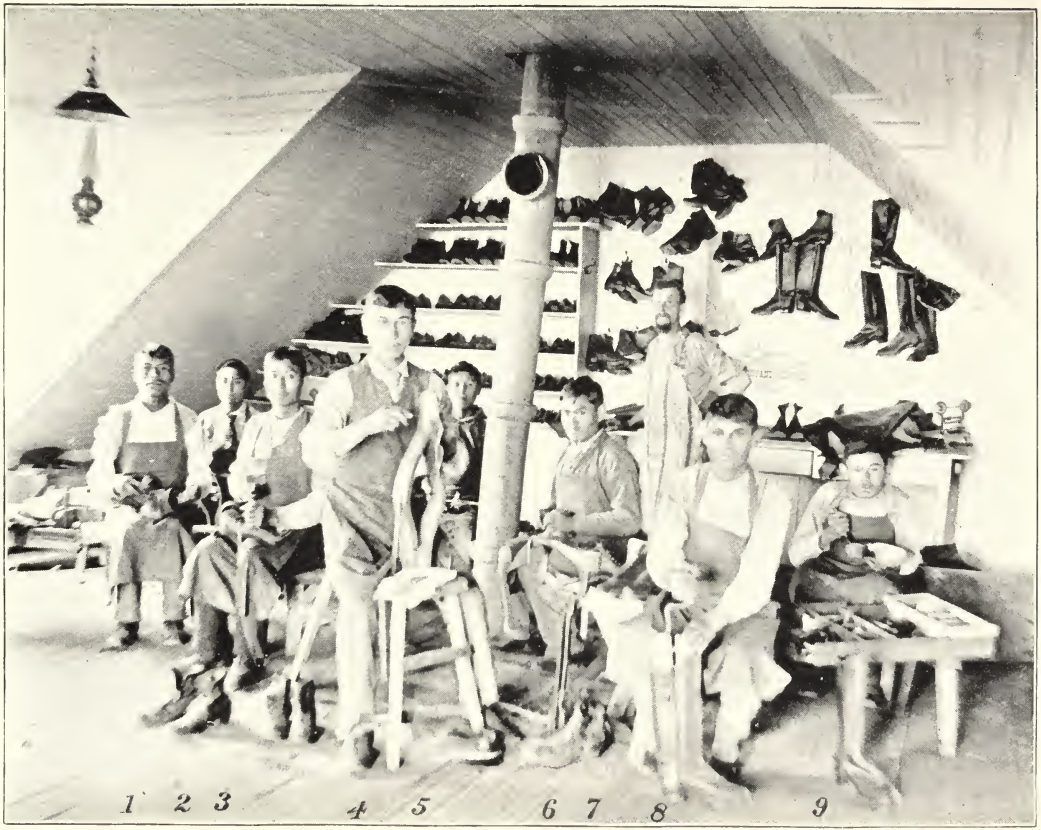
The supply of barrels and half-barrels far exceeds the demand, yet coopering is considered an excellent trade for the young men. Owing to high freight, barrels are usually made at the fishing stations where needed, and coopers are in demand at those places.

The variety and scope of carpenter work have proved a most valuable source of instruction to the boys, most of whom are aptly adapted to mechanical industry. The boys have made commendable progress during the past year. Young men who can do carpenter work fairly well can find opportunity to ply their trade in any of the villages of Alaska.

There are eight model cottages, six of which are occupied by young married couples from the school. These young folks have been thrown entirely upon their own responsibility and resources, and they are doing right well in earning a livelihood, while their houses are kept clean, neat, and homelike. The environments of family life among the young folk, in contradistinction to that in vogue among the natives, tend to create new conditions and inspire new impulses among their own people.

The general work of the school—patching, mending, refitting, making new garments (aprons, towels, underwear, dresses)—is no light task. Each girl 8 years old and upward knits her own stockings, and the large girls find time to learn useful tidy work in order that they may be able to beautify their own homes with the work of their own hands.

The girls are trained in every department of household industry—kitchen, dining room, teachers' room, etc. The girls numbering but 50, the matron and her assistants find time to give each girl individual care in the details of housekeeping, thus gradually inculcating and developing a sense of personal responsibility.




Aaron. George Elliott. Charles Bates. T. Hanbury. C. Jackson. A. Nelson. A. T. Simson, teacher. F. Judson. Daniel.

The boys do the bread baking for the school, while the girls in turn are taught how to bake and cook for a family. This special instruction in the art of cooking is given in the teachers' kitchen, the cooking for the teachers and employees being done by the native girls. They are also trained to wait upon the table, and they serve the teachers and guests with grace and manners. The young boys are also trained in the school kitchen and dining room.

The pupils, from the children to the adults, sing with a spirit and understanding that outrivals many of the public schools.

The brass band of 20 members dispenses music for the school and for the town on public occasions.

There is a military company of 35 members. The guns were kindly loaned them by the governor of the Territory.

Lessons in patriotism are constantly inculcated. The Alaskans are a loyal, patriotic people.

The time has fully come when a normal department should be added to this important school, and a beginning be made in training native teachers.

After a very busy week spent at Sitka, the *Bear* got under way at 4.45 a. m. on May 19 for Prince William Sound. The trip up the coast was grand. The Fair Weather range of mountains stood out bold and white, covered with snow to the water's edge. On the afternoon and evening of the 20th we had fine views of Mount St. Elias, it being visible from base to top. One of the most remarkable stretches of coast for a combination of snow, glaciers, and mountains is the region between Cross Sound and Cape St. Elias—no language can do it justice. At 1 o'clock a. m. on May 22 we entered Prince William Sound. There being no good chart of the region, the captain felt his way slowly with constant soundings of the lead. At 8.30 a. m. anchor was dropped off the east end of Hawkins Island, Cordova Bay, in the vicinity of two large salmon canneries. In the neighborhood of these canneries reside 25 white men living with native women. It is reported that last winter they manufactured 2,500 gallons of liquor for the use of the Indians. The two salmon canneries at Cordova Bay, and one near by at the mouth of Copper River, represent a capital of $375,000. The output of these canneries for last season was 80,000 cases of canned salmon with four dozen 1-pound cans to the case, with a valuation of $280,000.

On the 23d, availing myself of the kind invitation of Captain Humphry to make a trip across the delta of the Copper River, I went aboard their little fishing steamer. The distance across the delta is about 50 miles. Passing to the southwest of the canneries and skirting the mountains down the peninsula east of Hawkins Island and around Cape Whitshed, our little craft boldly pushed to the eastward across the delta, the steamer channel being marked by spruce trees which, at low tide, when the flats are bare, had been set at the principal turns. The afternoon was rainy and we only got occasional glimpses of the

beautiful snow clad mountains to the southward. About 9 p. m. we reached our destination at Pete Doll Slough. Upon stilts on the bank was a small frame house where twelve fishermen and a cook abide during the few weeks in which salmon run at this point. As we came up to the mud bank there were six piles of red salmon and six of king salmon waiting to be loaded upon the steamer. The catch for the day was 4,000 fish, which were soon loaded on board. For the common salmon, averaging 8 pounds each, the fishermen receive 3 cents per fish, and for the king salmon, weighing from 40 to 80 pounds, 10 cents each. Soon after midnight, the tide being up, the steamer started to return to the canneries, but before fairly getting out in the stream, ran aground, and the tide falling, we were left where we could get off the steamer and walk ashore. This detained us until high tide at noon on the 24th, when we again got under way, reaching the canneries about 5 p. m. While en route we passed five bidarkas with natives hunting the sea otter.

Returning to the *Bear* at 6.45 p. m., we were under way for Nuchek. At 10.35 the cutter ran ashore on a sand shoal, but was able to back off without any serious damage. On the morning of the 25th we dropped anchor at Nuchek, where we remained until 2.35 a. m. on the 27th, at which time a start was made for Cooks Inlet. Glaciers and snow-covered mountains were visible the entire day. At 6.30 a. m. on the 28th, rounding Chugatz Island, we entered Cooks Inlet. At 9 o'clock, overhauling the *Ida Etta*, the steamer was stopped to send a boarding party to the sealer. At 9.20 we were again under way northward, and at 1 p. m. passed Coal Point (Kachekmack Bay); at 3 p. m. Staritchkof River was abeam; at 4.50 we anchored off Munia (Nilchik). The village being 4 miles distant, the sailors had a long, hard pull to shore. The whole male and child population of the village came down to the beach to meet us. The only American in the place was Mr. J. M. Cooper, the trader. The village is composed of 17 families of Russian creoles, comprising 53 people, of whom 23 are children between 6 and 21 years of age. The houses are small, but comfortable and well built of logs. The village has also a small log church recently reconstructed. The priest comes from Kenai once a year. In the meantime, the principal men take turns in conducting church services. The community possesses 15 head of cattle (small Siberian breed). They raised 600 bushels of potatoes, besides cabbages, turnips, ruta-bagas, etc. They have about 5 acres under cultivation. Each season they salt down a sufficient quantity of fish for their winter use. Eighteen head of moose were killed the past season; also a number of bears, lynx, etc. The community was anxious for a school. These people are interesting as the descendants of those who were sent in 1812 by the Russian-American Company to found the Ross Colony and raise provisions for the Alaska colonies. When the attempt was abandoned in 1841, the people were returned to Alaska, and many of them settled at this point.

At 4.20 o'clock on the morning of the 29th we got under way, again steaming north, and at 9.30 a. m. came to anchor 5 miles off Fort Kenai, where we again went ashore. As the people of this place see but two or three ships a year, an arrival is a great event, and large numbers of the people gathered on the bluff to see us land. We were met at the landing by Mr. Wilson, formerly a naval officer of the United States, but who for twenty-five years has been in the employ of the Alaska Commercial Company in the vicinity of Cook's Inlet. Making a call upon the Russo-Greek priest, we found that his wife talked English fluently. The population of Kenai is given by the priest as 152, 89 males and 63 females; to this population there are but 16 children; these are all in a school taught by the assistant priest. The people are rapidly dying off; four years ago in an outbreak of the grip, 40 people died in one month from this small population. The place is divided into two small settlements; the one on the bluff overlooking the beach is Russian creole, and the other, about a mile away, overlooking the valley of the Kaknu River, is occupied by the Kenai Indians. The slope of the bluff from the creole village down to the beach is covered with the vegetable gardens of the people. The creoles have gotten out the logs for a new church building, and are awaiting the expected arrival of their bishop from San Francisco to secure permission to build. The priest lives in a large, comfortable log building, and has taken a stand for temperance and morality among his people that will do them much good. This can not be said of many of his predecessors. The range of the thermometer at this place is from 90° above zero in summer to 35° and 40° below zero in winter.

Near the Indian village is a large salmon cannery on the Kaknu River, which is a large stream flowing from the Skillokh Lake. Across the bay, immediately in front of Kenai, is Redoubt Mountain, an active volcano. At the head of Cooks Inlet, on Turnagain Bay, are some gold placer mines, worked by 30 white men. A few miles to the south of Kenai is the mouth of Kassiloff River, a large stream taking its rise in Tustumena Lake; at its mouth are two salmon canneries. Near the mouth of Cooks Inlet, on the east bank, is the village of Soldavia, on Kachekmak Bay. It has two stores, and is the largest settlement on the inlet. The place has applied to the general Post-Office Department to be placed on the mail route as a distributing point for Cook's Inlet.

Having finished our duties in Cooks Inlet at 2.30 a. m., May 30, we were again under way, bound south to Karluk. Going on deck at half-past 7 o'clock, we were abreast of Illiamna Volcano (1,260 feet high), which from base to peak, under the morning sun, glistened in its white robe of snow and ice. In the crater, apparently to the southwest of the peak, were occasional puffs of smoke. As far as the eye could reach, north and south along the west coast of the inlet, stretched the wonderful panorama of high sharp peaks and rugged mountains, all covered with snow to the water's edge. In front of us Mount St. Augustin

arose from the sea, and with regular sloping sides formed a conical-shaped mountain, covered with ice and snow. It is evidently of volcanic formation, as the ravines formed by the lava flows radiate from the cone to the base in regular lines.

A few years ago a volcanic eruption split off a portion of this mountain and cast it into the sea. The mountain forms an island about 27 miles in circumference. This island was ever present and formed a conspicuous landmark through the entire day's sail. Prominent on the horizon in front of us in the morning, and which we only passed in the evening, was Cape Douglass, which marks the southwest boundary of Cooks Inlet. In the far distance it looms up an island cone, apparently separated from the mainland, but a nearer approach reveals a a large group of sharp peaks covered with snow and their ravines filled with glaciers. At noon a shout on deck took us out of the cabin to see a wonderful display of bird life. The water was black with them, forming a belt from 50 to 100 yards wide, and almost as far as the eye could reach. The birds had evidently found a school of small fish upon which they were gorging themselves. At different times in the inlet a number of fur seal were seen disporting themselves in the water.

At 3.30 p. m. the ship was hove to to board a small schooner, the *Jayhawker*, of Juneau, E. H. Bogues, master. The only occupants of the vessel were Mr. Bogues and a boy of 11 years of age. Mr. Bogues was sick. The schooner had sprung a leak and was half full of water, and the two sailors were entirely out of provisions. The captain offered to tow them into a neighboring harbor, but they declined his assistance. He then sent them some provisions and left them. It was afterwards learned that the schooner and master were famous for smuggling. A superb sunset closed a day of wonderful scenery. For grandeur of scenery Cooks Inlet greatly surpasses the properly famed scenery of southeast Alaska. Early in the morning of May 31 the *Bear* dropped anchor at Karluk. In the harbor were the American barks *Harvester*, *Merom*, and *Nicholas Thayer*. During the forenoon I went ashore and inspected the Government schoolhouse which was erected several years ago at this place. During the past two years, owing to the smallness of the appropriation of Congress, the schoolhouse has been closed. Karluk is the most famous place in the world for salmon, there being six or seven large canneries at this place.

Returning from the visit to the village, at 2.15 p. m. the ship got under way for Afognak. The wind freshening into a gale and being dead ahead, with a heavy sea, the captain put into Uyak Bay and anchored. This bay runs inland some 27 miles, and in connection with Kaliuda Bay on the eastern side of the island almost cuts the great island of Kadiak into two portions; the trail between the bays is about 8 miles. At anchor in the bay was the small fishing steamer *Ella Rolhffs*. Rich quartz gold mines are reported at the head of the bay. The storm having somewhat abated, at 2.50 a. m., June 2, we were again under way.

At 9 o'clock we turned from Shelikof into Karluk Straits. These straits, which separate Afognak and Kadiak islands, are about 20 miles long and 2 miles wide. On a clear day the trip through them furnishes beautiful scenery. Soon after entering the straits we overtook the Alaska Commercial Company's schooner, the *Kadiak*, which had been reported lost. Captain Healy very kindly offered to tow the schooner into Kadiak, which offer was gladly accepted. Several times during the day we again saw the wonderful sight of myriads and myriads of birds covering the face of the sea; among the birds were seen several whales.

At 1.15 p. m. we came to anchor abreast of the village of Afognak, and an opportunity was afforded me to go on shore and inspect the schoolhouse and interview the teacher. Returning on board, the *Bear* got under way. At 3.20 p. m., turning southward from Karluk Straits, we entered the romantic and beautiful Ozinkey Narrows between Kadiak and Spruce islands. With a strong tide in our favor, we swept swiftly through the Narrows past the village of Ozinkey, where I lay at anchor in 1886 in the schooner *Leo*. We again met myriads of birds darkening the water in search of fish. Those met in the forenoon were of a white color; those in the afternoon were brown. About 7.10 p. m. the ship anchored about midway between Kadiak and Wood Island villages. Going ashore at Wood Island, I had the privilege of spending the night with Mr. Roscoe at the mission of the American Baptist Woman's Home Missionary Society. Mr. Roscoe's work has met with bitter opposition, and even persecution, from some who should have stood by him; at times even his life has been in danger, but through it all he has come out triumphantly, and now has eighteen Russian creole and Aleut children in the home. The next day I went over to Kadiak and visited Mr. Washburn, agent of the Alaska Commercial Company, and Mr. Solter, teacher of the Government school. Here I was reminded that, although so little is known by the general public of Alaska that it is considered a comparatively new country, yet the citizens of Kadiak at the time of my visit were making preparations to celebrate the centennial of the establishment of the Russian Church in their village.

In the afternoon of June 4 the ship got under way for Unga. The trip through the southern entrance to the harbor of Kadiak out to sea is one of great interest and beauty. Passing between Wood and Picknick islands, by the southwest end of Long Island, through Chiniak Bay, a large number of needle rocks are seen rising from the sea. Long Island has been leased from the Government and stocked with silver gray foxes. Passing Cape Greville, 15 miles south, carries us abreast of Ugak Island, which is a landmark for sailors bound for Kadiak by the southern entrance. Here in 1784 a decisive battle was fought between the natives and the Russians. After the repulse of the attack of the natives on the newly-formed settlement of the Russians at Three Saints Bay, Shelikof concluded that his only safety was

in giving the natives a severe lesson. Hearing that they were intrenched on the island, he took one of his vessels and with an armed force made an attack upon them. Being unable to reach them with his small cannon, a landing was effected and a successful assault was made upon the native stronghold. A number of the natives in their desperation leaped from the cliffs into the sea and were drowned, and about one thousand were taken prisoners.

To the west of Ugak Island is St. Orlovsk, an old Russian settlement. Twelve miles farther down the coast is Kilinda Bay, also containing an old Russian settlement. A few miles farther south and we pass Sitkalidak Island, behind which is the Bay of Three Saints. This bay was first visited by Grigor Ivan Shelikof in 1784 and named the Three Saints Bay after his three vessels, the *Archangel Michael*, *Simeon*, and *Anna*. He formed a fortified settlement, which was soon attacked by the natives, who were smarting under the wrongs which they had suffered from previous parties of Russian fur seekers who had visited their shores in ships. Peace was only secured for the settlement through a bloody war. Making Three Saints his central station, Shelikof soon had settlements located at all desirable points along the east shore of the island, and also at Karluk, on the west coast, where in 1785 he placed fifty-two Russians and a number of native hunters. As Three Saints was the first permanent Russian settlement in Alaska, it also had the honor of securing the first church building, erected in July, 1796. A school had been taught in 1785 by Shelikof and his wife, and again by Father Juvenal, who opened his school on the 19th of June, 1796. In 1796 the headquarters of Russian operations was removed from Three Saints to Kadiak. From Three Saints to Kadiak there is almost continuous inland navigation for kyaks and small boats, formed by the straits between the main island and smaller outlying islands.

Steaming southward, we pass beyond the southern point of Kadiak and lay our course for Ukamok Island. Alitak Bay, in the southwestern end of Kadiak Island, is the first point on the island visited by the Russians. This was by Stepan Glottov, who landed here in the fall of 1763, and subsequently wintered at Kiyavak (Kahgovak), on the southwest side of the island.

At 2.45, on the morning of June 5, we passed Trinity Island, 11½ miles south of the southern point of Kadiak Island. At noon we were abeam of Chirikof Island. This island, discovered by Captain Cook on April 4, 1794, is about 10 leagues in circumference. Passing along its eastern side, it seemed high and rocky. This island is historic as the "Botany Bay" of Russian America, being the place where murderers and the more desperate criminals were taken and left largely to themselves. The island was treeless and without vegetation except moss and lichens. However, innumerable wild fowl nested on its cliffs, schools of fish frequented its surrounding waters, and the marmot abounded in the

crevices of the rocks. As marmot fur is highly prized for parkas, the convicts set themselves to procuring it for a living.

In 1869 Captain Evans, of the United States revenue cutter *Lincoln*, making an inspection of the southern coast of Alaska, called at the island. He was accompanied by Mr. Vincent Collyer, secretary of the Board of Indian Commissioners. Not knowing the character of the settlement, and moved by their stories of privation and destitution, a large supply of provisions and goods were landed for their relief. The sugar was at once brewed into beer (quass) and the whole community reveled in drunkenness as long as the supplies lasted. From the visit of the ship they learned that they were no longer under Russia, and were free to go or come. Stimulated by the memory of the good things left by the ship, they determined to abandon their island prison and make a desperate venture for liberty. Packing the whole population into two skin-covered bidarkas, they safely made the island of Kadiak, 80 miles distant.

June 6, at 6 a. m., we passed 4 miles north of Castle Rock. We are now at the eastern entrance of the Shumagin Archipelago. To the south of us were the Big and Little Koninski, Simeonoff, and many smaller islands; to the north of us, Point Kupreanoff, with the rock-bound coast, snow-covered, glacial-swept mountains and ravines of the peninsula. Directly in front were the islands of Nagai, Andrónica, Korovin, Popoff, and Unga, with innumerable islets and rocks. About 9 o'clock we entered Gorman Straits, passing between Korovsin and Andronica islands, on the former of which is a small Russian settlement of two families, with four or five houses and a small Greek chapel. We are now in the neighborhood of the point where, on August 30, 1741, Bering landed to bury Shoomagin, one of his seamen. As the natives destroyed the cross that marked the grave as soon as the Russians left the beach, all trace of the exact spot has been lost. From the account of the expedition it was probably either on Popoff or Nagai islands.

Leaving Pirate Cove, with its sheltered cod fishery, to the right of us, we pass down the east coast of Popoff Island, round the head, and make direct for Delaroff Harbor, where we make anchor at 11.45 a. m., abreast of the village of Unga. Taking an early lunch, I went ashore and found Mr. O. R. Kinney, the teacher, on the beach waiting for me. Under his guidance we visited the schoolhouse, which has been enlarged and repainted since I left there a year ago. From the schoolhouse we visited the "Martha Ellen Stevens" cottage, where he resides, and while there discussed school matters.

The entrance to the harbor is most picturesque. At the southern side a large opening or cave extends through a rocky headland, giving the appearance of an immense elephant, the cave or open space separating the elephant's trunk from his fore legs. The southern point of the island is a precipitous rock, making a high cape, with a large

number of needle rocks clustering around its base, while a few miles beyond, as outlying sentinels, are the Sea Lion Rocks. At the northern entrance of the harbor are large, detached, precipitous rocks at the base of high, perpendicular rock cliffs, cliffs and rocks alike being covered with nesting birds. In a sheltered nook on the north side of the harbor is the village, with a population of 159.

Returning to the ship, at 6.25 p. m. we were under way for Sand Point. Steaming up Popoff Straits and passing a small settlement at Squaw Harbor, we rounded Sand Point, and at 8.25 p. m. anchored in Humboldt Harbor, off the village of Sand Point. This village consists of a half dozen houses belonging to Lind & Hough, of San Francisco, and a United States custom-house. A small hotel is in process of erection. At anchor in the harbor were the British sealers *Venture* and *San Jose* and *Walter L. Rich*, all of Victoria, British Columbia, and the American schooners *Czarina* and *Venture*. The sealers had large crews of British Columbia Indians, and were awaiting the end of the closed season to engage in sealing. This is the central depot of the North Pacific cod fishing, the *Czarina* being at the dock loading codfish for San Francisco. At the wharf, and forming the foundation of a portion of the same, was the hull of the schooner *John Hancock*, wrecked at the Sand Point Wharf. The *John Hancock* was built as a naval steamer at the Charlestown (Massachusetts) Navy-Yard in 1850–1852, and was in Commodore Perry's Japan expedition in 1853–54, after which it was condemned and sold into the merchant service. While in the merchant service and loaded with lumber it was abandoned at sea, off the coast of Oregon. Being recovered and brought into port, it was resold to Lind & Hough, who placed it in their codfish trade in the Shumagin Islands, where it has left its bones in the harbor of Sand Point.

June 8, at 2.10 a. m., the *Bear* got under way. Passing out from the north end of Popoff Straits, we skirted the north end of Unga Island, through Unga Straits, and passed the entrance of Portage and Beaver bays down past Seal Cape. About 6 a. m. we passed a small settlement of Aleuts on Wosnesewsky Island. The Alaska Commercial Company, who have had a small trading station at this village, have this season closed it.

Passing to the north of Ukolsnoy Island, almost directly ahead was the celebrated Pavloff Volcano, smoking with its old-time fidelity. Pavloff and Canoe bays, on the Pacific Ocean side, extend inland across the peninsula to within 4 miles of the waters of Herendeen Bay and Port Moller, on the Bering Sea side. In several places the peninsula is nearly cut in two by the fiords that extend nearly across from the Pacific Ocean to Bering Sea.

Turning southward, we soon entered the narrow straits between Dolgoi and Goloi islands and the Belkofsky peninsula and Inner Iliasik Island, then through Iliasik Pass, after which we hauled up for Belkofsky, situated upon the bluffs directly in front of us, coming to anchor abreast

of the village at 11.45 a. m. After lunch I went ashore, visiting the traders, the Russo-Greek church, and Father Metropolski, the priest.

The trader reported no school. The priest reported one taught two days in English, two days in Russian language, and the remaining two days of the week given to instruction in the church catechism.

Got under way at 1.30 a. m., June 9, standing south between Bold Cape and Deer Island with Unca Rock directly ahead. At 3.10 raised Ugomok Island in the fog and soon after were flying through Unimak Pass with wind and sea in our favor, and leaving a gale behind us in the Pacific Ocean. Once in the lee of Akun and Akutan islands we had smooth sailing.

Sunday, June 10, at 5.40 a. m., the *Bear* made fast to wharf at Dutch Harbor.

Monday, June 11, I went over to Unalaska to spend the morning with Mr. Tuck, but found that he was about sailing for Puget Sound on the ship *Wooster* for his vacation. He expects to visit his mother in Maine.

June 12, at 1 p. m., a whaleboat was seen entering the harbor and the steam launch was sent off to meet her. It was found to be one of the wrecked boats of the whaling bark *James Allen*, and contained Capt. A. Huntley and 6 men.

They reported having left in an old barabara on Umnak Island 9 of their comrades.

One boat containing 8 men was found by Alexander Sheisinkoff, Alaska Commercial Company, trader at Atka. Discovering them lost at sea, he built a fire upon the top of a neighboring hill to attract their attention and then went out in a kyak through a dangerous sea to intercept and bring them in. He then furnished them with needed clothing and kept them until the Alaska Commercial Company's steamer *Dora* called in and took them off. The *Dora*, meeting the U. S. S. *Petrel* (Captain Emory commanding) at sea, gave them over to him. They were then brought to Unalaska and some of them found employment with the North American Commercial Company.

Upon the arrival of Captain Huntley and crew on the *Bear*, word was at once sent to Captain Healy, who was on shore. With his usual promptness, orders were issued to prepare for sea. The boilers had been "blown down" and the engine taken apart for repairs, but with lives at stake the men worked with such a will that in four hours the engine was repaired, the boilers filled, steam got up, and we were off to sea at 7.05 p. m.

Wednesday, June 13, a head wind and a heavy head sea made our progress very slow. One hour under full head of steam we made but 1.6 knots.

We expected to reach Umnak Island early in the morning, but the storm was so severe that we did not reach it until the following forenoon. To-day the U. S. S. *Albatross* started out to join in the search, but returned to the harbor on account of the storm.

Having arrived Thursday, June 14, at 10.30 a. m., in the neighborhood of the camp, the ship lay "off and on" while Lieutenant White and Captain Huntley were sent in charge of two cutters through a heavy sea to rescue the men.

Upon reaching the shore and entering the hut, they found nine men gathered around the fire with a pot of human flesh on cooking, which they had cut from the body of the man who had died and been buried two weeks. Upon perceiving the rescue party they gave a feeble hurrah, and, laughing and crying by turns, remarked that they were sorry to say that they were cannibals, but that starvation had stared them in the face and they were compelled to resort to that food. They reported that Gideon had died June 7 and they had eaten him. When he was gone, they had dug up Pena, who had been buried on May 30, and were now (June 14) eating him. When they reached the ship they were so weak that some of them had to be carried and all of them helped to the forecastle, where the clothes, swarming with vermin and reeking in filth, were cut off of them and thrown overboard. They were then thoroughly washed and hair cut. When stripped of their clothing, their emaciation showed their suffering.

It has since been learned that the wrecked men in the hut were within 6 miles of a small Aleut village. But they knew nothing of the existence of the village, and the villagers saw nothing of the sailors. At 12.40 the ship started for return to Unalaska, reaching there at 4.20 a. m. on June 15.

The mail steamer *Crescent City* had arrived during our absence. At 3 p. m. the U. S. S. *Alert* came in.

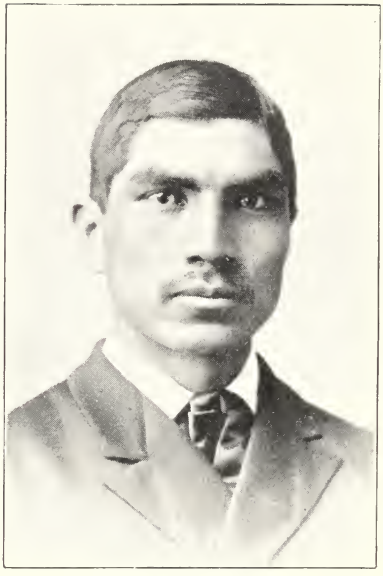
On Saturday, June 16, at 7.30 p. m., the Alaska Commercial Company's steamer *Bertha* arrived from San Francisco. Schooner *Carrier Dove* anchored just outside of the spit. At 9.50 p. m. U. S. S. *Concord* came to anchor in the harbor.

On board of the steamer *Bertha* were Rev. John W. Chapman and wife, Miss Bertha W. Sabine, and Miss Mary Glenton, M. D., for Anvik, Yukon River; Miss Margaret F. Macdonald for Church of England Mission, Buxton, Yukon River, and Miss Home for the Swedish Mission at Golovin Bay. Among other passengers were Mr. Fredericks and Mr. Wilson, Alaska Commercial Company traders at St. Michael.

At 11 a. m., June 17, fourteen of the rescued sailors were sent with Capt. Arthur Huntley on board the *Crescent City*, Captain Healy having arranged for their transportation to San Francisco.

After they had gone, in cleaning up, one of the sailors found a piece of human flesh in the pocket of an oilcloth coat which the shipwrecked men had left on board the *Bear*. At 12.15 p. m. the *Crescent City* went over to Unalaska for the mail, and in the afternoon went to sea. At 9.10 p. m. the Hawaiian steamer *Alexander*, Captain Green master (whaling), dropped anchor. Captain Green reported the loss of the whaling bark *Abraham Barker*, of New Bedford, Gifford master, in the ice off Cape Navarin about the middle of May. All hands saved.

John A. Tuck.



Rev. John H. Kilbuck.

L. M. Stevenson.

Rev. John W. Chapman.

TEACHERS, WESTERN ALASKA.

Monday, June 18, immediately after breakfast, I went over to Unalaska and had a conference with Mr. Rudolph Neumann concerning the boundaries of the school lot, after which, with Captain Hayes, representing the Alaska Commercial Company, I staked off about 600 feet square to the east of the Alaska Commercial Company's barnyard. Was on shore all day. Took lunch with Captain Hayes on *Dora*, and dinner with Captain Hague and Rev. Mr. Chapman and party on the *Bertha*. At 6.35 p. m. the U. S. S. *Albatross* returned to the harbor, reporting no traces of the wrecked whalers.

On Wednesday, June 20, at 8.15 a. m. the *Bear* got under way for Seguam Island, where it was rumored there were some shipwrecked whalers.

Passing along the Four Mountain group of islands, we made Seguam Island June 22 at 3.45 a. m. The engine was slowed down and a careful examination of the coast was made. At 9.15 a. m. Lieutenant Dodge and crew of men were sent off in a cutter to examine a portion of the coast which a reef of rocks made it dangerous for the ship to approach. Becoming satisfied that there were no men on the beach, at 11.15 a. m. the course was shaped for Cape Navarin, Siberia, where we will make an effort to secure some reindeer.

June 26, 11.50 a. m., land was sighted to the westward of Cape Navarin, Siberia, distant about 15 miles, and at 3.40 we came to anchor in the bight to the westward of Cape Navarin. We remained at anchor all night, hoping to get in communication with some of the deer men that have herds in that neighborhood.

On Wednesday, June 27, 5.30 a. m., no deer men having shown themselves on the beach, the ship got under way for Cape Aggen, Siberia. At 3 p. m. we were abreast Cape Navarin, a beautiful, bold, and rugged promontory. At 7.12 p. m. we were abreast Cape Thaddeus.

Upon reaching Port Clarence we were informed by the whalers that the inhabitants around Cape Thaddeus were in a starving condition. They also reported the whaler *Archangel Gabriel* was still fast in the ice.

Thursday, June 28, at 10 p. m., being unable to make Cape Aggen on account of the fog, the course of the ship was changed and we made for Plover Bay, Siberia.

June 29, at 9.45 a. m., we stopped abreast of Eutoxia's village. The surf being too bad to land and no one coming off from shore, we turned into Plover Bay, Siberia, where we came to anchor at 11.40 a. m. A number of the natives came on board ship. Not hearing of any reindeer in the neighborhood, at 5.40 p. m. the ship got under way for St. Lawrence Island. A stop was again made abreast of Eutoxia's village, but no one coming off the ship was soon on its way. Before reaching Eutoxia's village we passed seven or eight native boats filled with men. They had evidently sighted a whale.

At 4.25 a. m. June 30 the ship came to anchor off south side of St. Lawrence.

Having given Captain Warren and party their mail and supplies at 8.40 a. m., we got under way for Cape Tchaplin, Siberia.

We soon encountered our first ice and saw a number of walrus and seal. Two of the walrus were shot by the captain.

Working our way through the ice, at 4.40 p. m. we came to anchor off the village at Indian Point (Cape Tchaplin), Siberia. Koharri, one of the principal men, and a large number of the natives came on board.

At 7.20 p. m. ship got under way for South Head, Siberia, where at 5.45 a. m. July 1 we came to anchor off the village of Ahkawahnee, on south side of Cape Krleougoune. A large number of natives came off to the ship, among them being Peter, with whom had been left last season some barter goods to trade for reindeer. Finding that the herd was a few miles to the westward the ship got under way at 8.40 a. m., and, working to the westward through the broken ice, came to anchor at 10.55 a. m. off the small native village of Toray. A runner was at once sent to have the deer driven to the beach. In the afternoon while waiting for the reindeer I accompanied Mrs. Healy and a number of the officers on shore to visit the village, returning to the ship about 5 p. m., when the herd was seen coming over the slope of a mountain. At 8 p. m. the first load of 17 deer was taken on board, at 9.50 a load of 15, and at 11.45 p. m. the last load of 16, after which the owners were paid off, it being after 1 o'clock a. m. before the work was completed.

July 2, at 5.40, we got under way for King Island and reached there at 7.50 p. m. The natives were soon on board in large numbers, from whom I purchased 7 walrus skins for the use of the reindeer station. At 10.10 p. m. we got under way for the Teller Station, Port Clarence, Alaska.

At 5.25 a. m. July 3 came to anchor off Cape Spencer, in the midst of the whaling fleet. The steamer *Jeanie*, Mason, master, with stores and supplies for the whaling fleet, brought us our mail. The letters were written from the 13th to the 23d of May, and are the last that I will be able to receive until I return to Unalaska, the last of September.

At 10.35 a. m. got under way for the Teller Reindeer Station at the upper end of the bay, and at 12.20 noon dropped anchor off the station. Soon after, Mr. W. T. Lopp came on board for his mail. After lunch, returned ashore with Mr. Lopp to look after the landing of the deer; also, lumber and poles for the station. Finding that the ship would remain at anchor over the 4th, I remained on shore overnight. Mr. Lopp and I conferred together until late in the night.

At 4 a. m. July 4 was awakened by the firing of the morning gun from the *Bear*. At noon a national salute of 21 guns was fired, and at 7 p. m. another gun was fired. The ship was gaily dressed with bunting, and looked finely with broadside to the shore.

Immediately after breakfast Mr. Lopp, Mr. Grubin, and myself went into the business of taking an inventory of the Government property at the reindeer station, finishing about 5 p. m.; after which I went over

to the *Bear* with a quantity of reindeer trade goods that had been left at the station last fall.

At 7.30 p. m. the *Bear* got under way and steamed over to a watering place on the south side of the bay.

July 6, having secured 4,275 gallons of fresh water, at 1.15 p. m. the *Bear* returned to Cape Spencer, coming to anchor at 3.05 p. m.

July 7, 8, and 9 were spent in coaling ship.

On the evening of July 9, Captain Weeks, Sherman, and Porter, and myself, Lieutenant Dodge being in charge, went with the steam launch to the reindeer station after the herders that were to be returned to Siberia. When two-thirds of the way over we met Mr. Lopp and the herders coming to the ship; taking them in tow of the launch we returned to the station, where the herders were paid off.

Returning to the ship about 11 o'clock p. m., Mr. Lopp and I went to the pilot house of the *Bear* and discussed plans until 2 o'clock in the morning.

July 10 letters were sent on board the *J. D. Peters*, to be taken down to Unalaska, and the *Bear* got under way for Ahkahahnee, Siberia, to return Enker and Ranken, together with Kimok, Peter, and Nowatat, deermen. I spent the afternoon in reading papers (two months old) just received.

July 11, 4.34 a. m., we dropped anchor off Ahkahahnee, South Head, where the herders and visitors were landed. The deer men having asked for some barter goods to trade for reindeer during the winter and have them ready to deliver to the *Bear* in the summer of 1895, were supplied.

There being every appearance of a storm outside, at 11.30 a. m. we got under way and went around to Lutke Harbor, St. Lawrence Bay, where we dropped anchor at 2.20 p. m. The captain and nearly all the officers went duck hunting. The officers brought back 44 ducks, the captain 25. This is the harbor where the U. S. S. *Rogers*, while in winter quarters, burned to the water's edge. The crew after suffering many hardships were rescued the following spring by Capt. M. A. Healy, on the U. S. R. M. S. *Corwin*.

At 7.40 a. m., July 12, came to anchorage off East Cape Village. An Umiak load of natives from Lutke Harbor left the ship and went to the village. At 8 o'clock a. m. we got under way and steamed into the bight to the southwest of the cape, and at 9.30 a. m. came to anchor near a native settlement. The steam whaler *Belvidere* was also at anchor at same place.

Captain Healy concluded to send Lieutenant White and Seaman Edwards along the Arctic Siberian coast to visit the deer men and purchase reindeer in advance of the arrival of the ship. An Umiak was secured of Tom Cod and the following natives hired for a trip of from six to eight weeks: Tom Cod, leader, 2 sacks of flour and knife; Claturnan, Claturnan's wife, Kolurigan, Emyia, Tetluk, Amoia, Atukea, each 1 sack of flour and knife.

Provisions and supplies were taken out and packed.

A courier came from Eskimo Frank at Whalen, stating he had 10 deer to sell and would be over as soon as ice and wind would allow.

Sunday, July 15, steam whaler *Belvidere* left and stood through the straits. At 10.05 p. m. got under way for Whalen, Siberia, where we arrived at 1.10 a. m., July 16.

July 18, about 9 a. m., Lieut. Chester M. White, and Seaman Edwards, with Tom Cod and six other natives, left the ship for a boat trip up the coast to Cape Serdze, going in advance of the ship to purchase deer.

July 20, at 12.05 noon, ship got under way and moved up the coast 7½ knots to the mouth of the lagoon, anchoring at 1.20 p. m. At 3 p. m. Lieutenant Rèinburg was sent off with some men in the sailing launch after the deer. At 6.10 p. m. the officer returned and reported his inability to reach the deer on account of the surf.

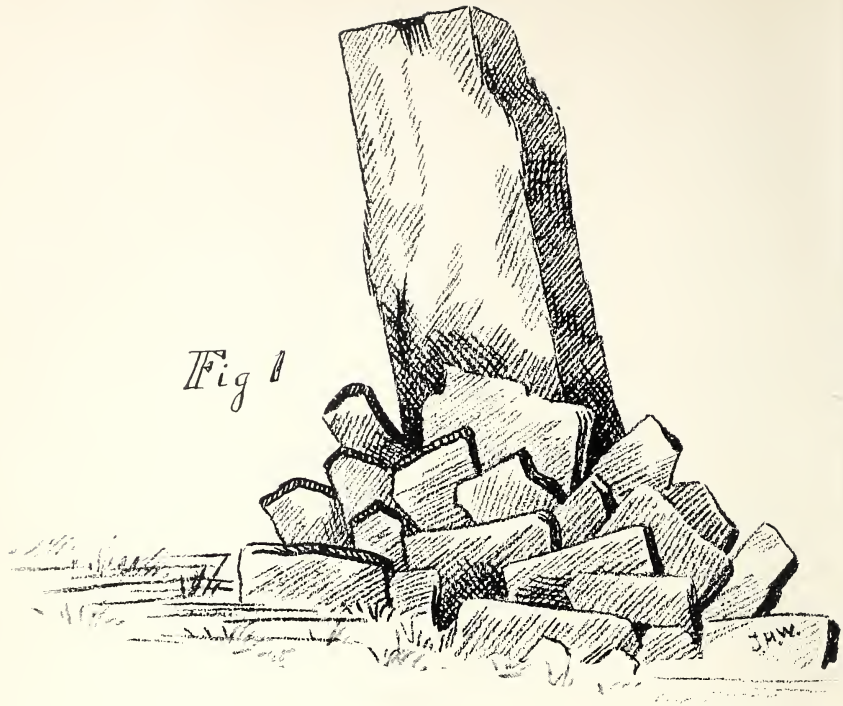
The delay of ten days consumed in securing the 16 deer at Whalen illustrates the difficulty of procuring them on the Siberian coast.

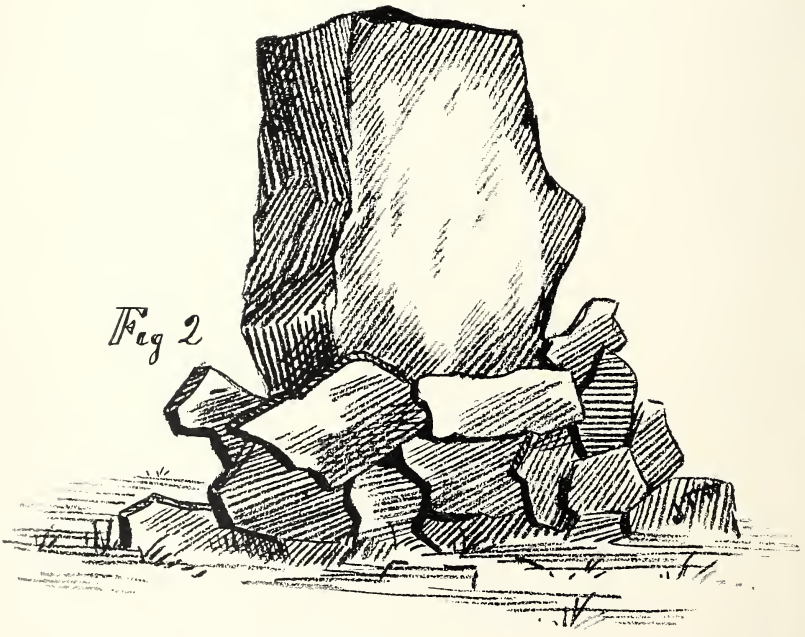
Early in the morning of July 11 the ship dropped anchor on the south side of East Cape, in the vicinity of a herd of reindeer, but the owners lived on the north side of the Cape, where the ship could not go on account of the ice. Five days were consumed in trying to open communication overland with the deer men and waiting for the wind to change.

At length the wind having started from the south, which would drive the ice off shore from Whalen, near midnight on the fifth day, the ship got under way and went around to the north side of the Cape, where communication was secured with the deer men and the deer purchased. After making arrangements for the purchase of the deer on the 16th, nothing further could be done toward catching the deer and bringing them on the ship until the wind should change. It being from the south the surf would not allow landing where the herd was. After waiting in vain till the 19th for the wind to change, negotiations were commenced with the deer men to drive their herd across the peninsula. They finally agreed to bring them to a lagoon, from whence they could be secured by the boats.

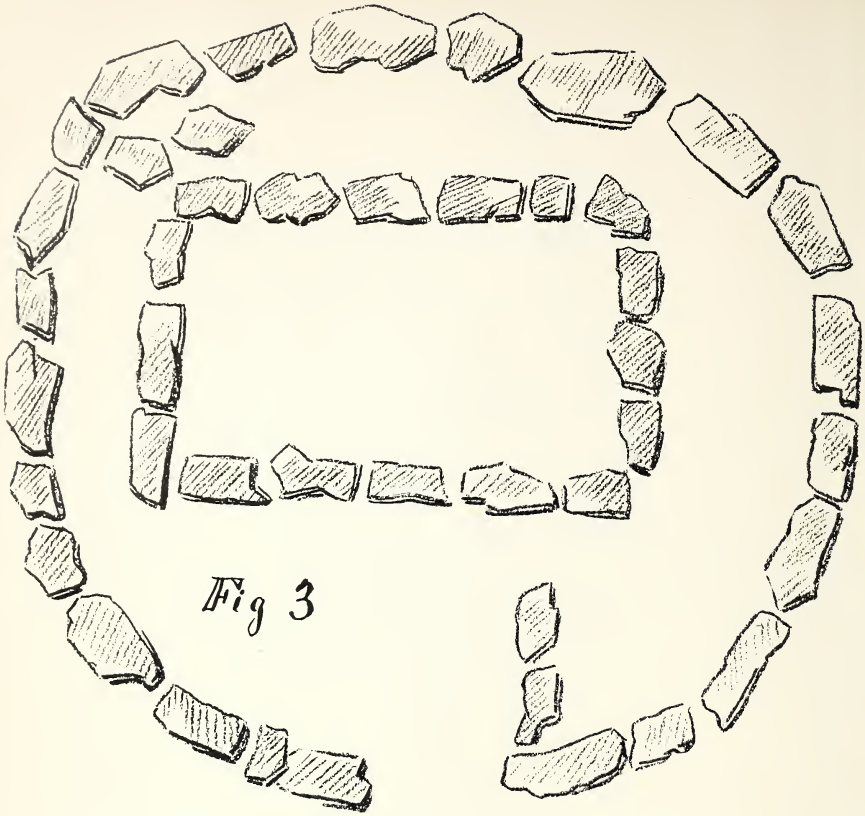
At length on the 20th they were reported at the lagoon, but then the surf was so bad on the lagoon that the boats could not be landed, and it was only on the 21st, after eleven days of waiting, that the deer were actually secure on board. There are no harbors in the neighborhood of the deer on the Siberian side. The ship usually anchors off shore in from 7 to 15 fathoms of water, and if the wind comes to blow strong on shore the anchor is raised and the ship goes out to sea, whether she has secured the deer or not. Another difficulty is with the ice. A strong wind off shore blows the great fields of ice seaward, and into the open water near shore the ship steams.

Dropping anchor in the neighborhood of a village, the natives come




SIBERIAN BURIAL STONES.





SIBERIAN BURIAL CIRCLES.

off. Negotiations are commenced with the deer men and a certain number of deer purchased. The men are at once dispatched to drive the deer near to the beach, catch and bring them off to the ship.

In the meantime the wind may change, and the great fields of ice that a few days or hours before were driven seaward are now driven landward, and it has sometimes happened that the ship has been compelled to heave up the anchor and leave without procuring the deer already bought. And at other times in holding on to the last moment in order to get the deer on board the ship has become inclosed in the ice and has been held a prisoner until the wind again changes and scatters the ice seaward. Again, the ship, by constant butting, has had to break her way through the ice. In doing this upon two seasons the ship has broken her propeller.

July 21, at 8.30 a. m., the sailing launch and second cutter in charge of Lieutenant Dodge were sent into the lagoon after reindeer. At 10.50 a. m. the steam launch in charge of Lieutenant Reinburg was sent into the lagoon to assist with the deer. At 3.55 p. m. the boat returned to the ship with 16 reindeer.

Got under way for Chachong at 5.40 a. m., July 22; at 8.20 a. m. was abeam of Utan; at 1.20 p. m. stopped and picked up Lieutenant White and party, and at 1.50 p. m. came to anchor off Chachong. Lieutenant White reported having purchased a number of reindeer at this place. Men were dispatched at once to drive the herd to the place.

At 3 p. m. Lieutenant White and party left the ship to visit the deer men in the vicinity of Cape Serdze.

July 23, the captain being notified that the herd had arrived, the sailing launch and second cutter, in charge of Lieutenant Reinburg, were sent ashore for deer. Dr. White and myself also went ashore.

At 2.30 p. m. the second cutter returned with 8 reindeer and at 5.30 p. m. the launch and second cutter arrived with 14 more, making 22 in all secured at this place.

Fifteen others had been contracted for, but when the time came the owners refused to sell. This was probably due to the influence of the medicine man, who had a misunderstanding with Lieutenant White.

While ashore Dr. White and myself ascended a high hill about a mile east of the village of Ceshan (Tsha-Tshang). The top of the hill contained an area of perhaps 20 to 25 acres, and along the sea front had a number of stone heaps and circles, probably connected with the religious rites of the people. The inclosed drawings were made for me by Dr. J. T. White, surgeon on U. S. S. *Bear*. Fig. 1 is about 4 feet high, and fig. 2 about 3. Fig. 3 was about 8 feet in diameter and the inner square about 4 by 5 feet. Fig. 4 is an irregular circle about 6 feet in diameter and the inner oblong about 2 by 4 feet. The stones are large, flat flakes of basalt. In the same locality was a circle 50 feet in diameter with a small heap of stones in the center.

During the day the wind had shifted and large masses of ice were beginning to gather around the ship. As soon, therefore, as the reindeer were on board, and their owners paid, the ship got under way (7.30 p. m.), picking her way carefully through the ice. During the afternoon Mr. Liebes went off with a party of Siberians in an umniak and shot a walrus, which was brought back to the ship.

July 24, stiff breeze and very foggy. Passed through Bering Straits without seeing land. At 12.30 noon, had a glimpse of Fairway Rock through the fog, and at 9 p. m. came to anchor off Teller Reindeer Station. Was much disappointed at the nonarrival of the ship *Myers* with the superintendent, assistant superintendent, and Lapps with their families and supplies. Mr. Lopp came off to the ship and remained until after midnight. Commenced landing reindeer at 6 a. m. July 25. The surf was so bad that the boat with the first load swamped on the beach and came near drowning the reindeer; as it was, 3 had their hip bones broken and had to be killed.

The subsequent landings were made in the lagoon west of the station.

July 26, being very anxious to visit Grantley Harbor and the lakes beyond, Captain Healy very kindly gave me the use of the steam launch for the purpose. I was accompanied by Mr. Lopp. At 8.30 a. m. we steamed away from the *Bear*, and soon after picked up the second cutter with a party of sailors going off to draw the line for fish in the Grantley Harbor, which we towed to the fishing place. Then we crossed the harbor and passed through Eaton River to the first of the two lakes. There we went ashore for a few minutes and then started on our return to the ship at 1.18 p. m. On our way down the river we ran on a sand bar, which detained us five or ten minutes. On the trip we passed many summer fishing camps of the natives. The long lines of fish hanging on the pole and frames to dry attested to the success they were having in fishing. On the south side of the mouth of Grantley Harbor we passed the small native village of Nook, with three winter houses. On the sand spit to the north side is one winter house, with ten or twelve summer fishing camps.

On the south side of the sand spit at the mouth of the river is the village of Synowgok with three winter houses. There is also a settlement of one or two houses on the north side. The native village near the reindeer station is called Synok.

Picking up the fishing party (who had caught no fish) at Grantley Harbor we returned to the ship at 5.30 p. m. After dinner went ashore with Mr. Lopp and remained until 11 o'clock. While on shore one of the herders brought in 2 quarts of milk taken from 6 reindeer cows. Had an interview with Charlie, a herder, concerning his future course; offered to keep him another year and give him 15 reindeer for his services, or loan him and his friends 100 reindeer this fall. Also attended to much business connected with the station.

July 27, after breakfast, I wrote a letter to the superintendent of the station with reference to the distribution of the herd—giving 100 head to the American Missionary Association at Cape Prince of Wales, and loaning, under certain specified circumstances, 100 head to Antesilook and his friends. Mr. Lopp came off with the accounts of the station which were audited. Arrangements were made for him to remain until relieved by Mr. W. A. Kjellmann, the new superintendent. At 1.15 p. m. the ship got under way for Kotzebue Sound.

On July 28 we came to anchor at 7.30 p. m., near Cape Espenburg, to allow some of the officers and Mr. Liebes to go ashore hunting. At 11.40 p. m. we got under way again.

At 4.55 a. m., July 29, the vessel grounded off Cape Blossom, and it was 7.55 p. m. before she floated again. Much of the day the engine was at work trying to get afloat. Four or five umniak loads of natives came on board, and considerable trading was done by officers and crew.

July 30, at 8.25 a. m., we got under way for Point Hope.

The next morning, at 5.30 a. m., Cape Thompson was sighted, and at 8 a. m. it was abreast, 3 miles distant. At 11.40 a. m. we reached the whaling station at Point Hope, and at 3.15 the ship was moved up nearer the village, anchoring at 4.20 p. m. Men and natives soon flocked aboard. Among the visitors were Dr. Driggs and Rev. Elijah H. Edson, of the Episcopal mission.. The day was pleasant.

August 1, after breakfast, I went ashore with some of the officers and Mr. Liebes.

Last October a great storm flooded the village, so that nearly all the people left their homes. The sea was waist deep around the Episcopal mission house.

Dr. Driggs upon one occasion gave one of the sick natives some powders to take. Meeting him four months afterwards the patient was profuse in his thanks, saying that the medicine had completely cured him; that he was a well man now, and ended by pulling the package of powders out of his pocket to show that he had not lost them.

At another time, meeting a funeral procession, it was stopped by the widow, who wanted to tell the missionary how much his medicine had relieved her late husband; and, as a token of their appreciation, the corpse had the bottle in his hand, taking it to the grave with him.

At 1 p. m. I returned to the ship. The whalers *Emily Schroder*, Bain master, and *Silver Wave*, Calighan master, were found hard ashore in the lagoon to the west of Point Hope. They were blown ashore in the hurricane, October 13, 1893.

August 2, at 8.30 a. m., got under way for Point Barrow.

August 4, day overcast and foggy; light rain; fresh breeze. At 12.15 a. m. took in all sail. At 1.30 a. m. large field of packed ice ahead and to the north. At 1.50 a. m. sounded in 25 fathoms. At 1.25 p. m. came to anchor off a native village to the north and east of Wainwright Inlet.

August 5, at 1.40 a. m., got under way. At 3.15 a. m. steamed through masses of floating ice resting on Cape Belcher and Sea Horse Islands. At 1.05 a. m. made fast to a large field of grounded ice off the United States Refuge Station, Cape Smythe (Point Barrow).

August 6, after breakfast I went ashore with Captain Healy in the steam launch.

Mr. Stevenson, the missionary, was busy framing the foundation timbers of the Presbyterian mission building.

During the spring the Cape Smythe Whaling Company (Brower, Gordon, Liebes & Co.) took three large, one medium-sized, and some small whales, making 7,700 pounds of marketable bone.

Mr. Kelly, of the Pacific Steam Whaling Company, secured 11,000 pounds of bone.

Last June one of these stations had three whaling boats driven out to sea in a gale. Two of the boats succeeded in returning to the shore, but the third was crushed in the ice and the crew of two men, a woman, and a boy had to take refuge on a piece of ice, which was driven out to sea. After a while the ice upon which they had floated was broken up and they escaped to other pieces. Finally, after being out upon the ice sixty-one days, they were driven ashore 100 miles south of where they started from, and escaped to land. A portion of the time they were on the ice they had no water to drink, and for eight days they were without food.

At Point Hope one of the young men out seal hunting was driven to sea on a cake of ice. Fortunately, after some days, the wind changed and floated him back again to land. While floating around the sea he shot and lived on three white polar bears.

The provisions and supplies for the refuge station were landed and the captain took on board about 19,000 pounds of whalebone for the two companies, which he will take to Unalaska, from whence it can be shipped to San Francisco. In the evening the ice floe to which we were fastened showing signs of breaking up, the captain cast off and anchored.

At the close of the whaling season the natives have a great celebration. Mr. Kelly decorates the station with bunting and gives a feast. At this festival one of the games (called Neklakatah) is tossing a woman into the air from a blanket. To be thus tossed is considered a great honor and is given to the women who have distinguished themselves by efficiency in whaling.

Mr. Kelly frequently receives letters from his hunting parties written in symbols. The two printed in this report when put into English read as follows:

Letter No. 1 means that one man (6) wants four steel fox traps (1), one drinking cup (2), one paper of needles (3), one knife (4), and a package of leaf tobacco (5).

No. 2 reads, a man (13) and his wife (14) want one pocketknife (1),


Eskimo Sign Letter No 1


Eskimo Sign Letter No 2

two cans of powder (2), one pipe with cover on the bowl (3), one plug of chewing tobacco (4), one set of reloading tools for rifle (5), one rifle (6), one box of primers (7), two cans of coal oil (8), one can of molasses (9), one comb (10), one coal-oil stove (11), and one coal-oil lamp (12).

August 7, a strong current set in to the north and brought large quantities of floating ice. This became so bad that at 1 p. m. the captain sent ashore to get Lieutenant Reinburg on board. A dense fog set in and the captain being compelled to constantly shift his position in the ice, Lieutenant Reinburg when he came off was unable to find the ship. Finding late in the night a comparatively open space of water, the ship was anchored.

August 8, at 7.25 a. m., taking Lieutenant Reinburg on board, the ship got under way on account of the heavy running ice. On heaving up anchor found a chain cable about $1\frac{5}{8}$ inch. Hooked to it, but the heavy ice prevented our saving it. Vessel at half speed, working to the south through the ice.

August 10, during the afternoon we passed Blossom Shoals, and at 10.40 p. m. came to anchor south of Blossom Shoals.

August 12, at 2.55 a. m. came to anchor off Corwin Coal Mine, where the men watered ship. In the afternoon, seeing a brig in the distance, the *Bear* got under way and steamed out to meet her. At 8 p. m. spoke the brig *W. H. Myers*, of San Francisco, with a cargo of freight for the whalers and the new mission at St. Lawrence Island. As the carrying of the St. Lawrence mission supplies into the Arctic might jeopardize and delay the establishment of the mission for a year, Captain Healy very considerately transferred those supplies to the *Bear* to be returned to the island.

August 14, the officer of deck reported two vessels in sight, supposed to be the whalers *Northern Light* and *California*. At 11 a. m. we got under way and went out to meet the incoming vessels, which proved to be the *California* and *Andrew Hicks*. From the *California* we received a batch of papers as late as June 23. After boarding the vessels we made for Point Hope, where we dropped anchor abreast the mission at 10.40 p. m.

In July and August last year Point Hope was visited by a terrible epidemic of capillary bronchitis. Dr. Driggs ministered to twenty five in one afternoon. Going through the village one afternoon he found an old man dying out in the rain. The family had taken him out so that he should not die in the house. Close by under a tent cloth was a dead woman. Under an adjoining cloth, hearing a moan and lifting up the cloth, found a sick child clinging to its dead mother. There were five dead in that group. Three-fourths of the adult population were sick and one out of every six died. There were not sufficient well persons in the village to bury the dead, and the corpses were left outside of the houses to be eaten by the dogs of the village. Their bones are still

seen scattered through the village or whitening in the stagnant pools from which the people procure their drinking water.

A white man living in the village with a native wife says that during the time of the epidemic he was disturbed for several nights by a noise around his house. Thinking that it was a dog prowling around for something to eat he got up, and, arming himself with a club, went out to investigate. In place of a dog he found a little four-year-old boy picking up scraps of shoe leather and sealskin to eat. Upon seeing the man the child fled home. He was followed, and found to be, with his little brother, the only living occupants of the hut. But in the same room lay the corpses of father and mother and the maternal grandfather. The man took the boys to his own home.

On August 16 we got under way at 3.30 a. m. At 9.25, the fog lifting, we made out East Cape. At 11.45 p. m. we rounded south point of East Cape, and at 1.20 on the morning of the 17th came to anchor off the village of Enmatowan, Siberia.

At 1.20 p. m. Lieutenant White returned on board and reported his camp at East Cape Village. The ship was at once got under way and steamed around to East Cape, where Lieutenant White's party were taken on board and the native Siberians who had assisted him were paid off, also Siberian Jack who had acted as interpreter to the ship.

At 8 p. m. the ship got under way, steaming to the northwest.

August 18, at 2.45 a. m. passed Enchowan. At 4 a. m. we noticed large quantities of ice packed in along shore. At 6.30 a. m. ice appeared in the distance, and at 7.30 the ship entered it. Finding it too heavy to proceed we turned around and returned to anchorage off Enmatowan village on the south side of East Cape, where we dropped anchor at 3.55 p. m.

On August 19, getting under way, we steamed around to East Cape village; at 8.25 a. m. stood across to the Diomedes, encountering considerable floating ice; at 9.15 a. m. cleared the ice, and at 11.30 stopped off big Diomede village. At 12.20 p. m. we started for Teller Reindeer Station, where we came to anchor at 10.30 p. m. The evening of the 21st Mr. and Mrs. V. Gambell, teachers and missionaries for St. Lawrence Island, were taken on board, and on the morning of the 22d Mr. Lopp's supplies were received for Cape Prince of Wales. At 10.10 a. m. the ship got under way for the Cape.

At 4 p. m. spoke the whaler *Northern Light*, Captain McKenna master, and we secured papers as late as July 3. At 5.50 p. m. we were under way again, and at 7.30 p. m. dropped anchor off Cape Prince of Wales. I went ashore and visited Mr. Thornton's grave as a beautiful moon was appearing above the mountain tops. Returned on board at 10 p. m., and at 10.15 p. m. the ship was under way for St. Lawrence Island.

August 23, passed Kings Island. There being no landing at St. Lawrence Island, the ship was headed for Indian Point, Siberia, where


ESKIMO HOUSES, ST. LAWRENCE ISLAND, ALASKA.

we anchored at 6.30 a. m. August 24. Koharri and a number of the natives visited the ship. Captain Healy commended Mr. and Mrs. Gambell to the good will of Koharri. They afterwards went ashore and visited Koharri.

At noon of August 24 we were again under way and stood for St. Lawrence Island, where we came to anchor at 7.50 p. m. the same day. Owing to the surf none of the natives were able to come off to the ship, but the following day, the sea having gone down, large numbers visited the vessel. Captain Warren and the Leary Brothers, who had spent the winter at the whaling station on the island, were received on board the ship. The lumber, provisions, and other supplies for the mission were landed in the native boats. Mr. Gambell, the missionary, went ashore to get the house ready for occupancy; to assist him Captain Healy very kindly sent the ship's carpenter and a sailor; I also went ashore, rendering what assistance I could. On the 29th the captain, feeling it necessary to make another trip to Siberia, Mrs. Gambell was kept on board while the carpenter with Mr. Gambell were left on shore to get the house ready. At 8 o'clock the ship got under way for Bering Straits and Arctic Siberia; at 5 o'clock on the morning of the 30th we were again in the midst of floating ice; at 7.40 called at East Cape village, and at 10.15 anchored off Whalen; at 5 in the afternoon we took on board three reindeer which had been secured at this place, and at 8.10 in the evening got under way and stood to the northwest up the Siberian coast, finding considerable drift ice close in shore.

We passed Enchowan and Killourrun villages at 2 o'clock on the morning of August 31, with increasing quantities of drift ice. Working slowly through the ice, we passed Tchupa village, and at 7 o'clock rounded High Cape and hauled in for Cesang village, where we stopped at 7.40 a. m. The ice being very heavy and thick, the ship did not anchor, but kept working backward and forward, dodging the heavy ice floes. At 9.50, finding that there were no deer to be had at Cesang, the ship went ahead, working through the ice up to Killourrun village, which we reached at 10 o'clock. Soon after I went ashore with Lieutenant White after reindeer. On shore we found that it was general slaughter day. On the beach were the tents of several canoe loads of East Cape natives, who had come up to buy and kill reindeer for their own use. In one place I counted 70 slaughtered deer, while a mile away another band was being killed. The deer men were so busy supplying the East Cape natives that we could secure no attention, and at 2.15, the ice having become dangerous, we were recalled to the ship, having secured but 2 deer. Soon after, the ice becoming lighter, we again went ashore, and returned to the vessel with 14 animals. The next day we secured 5 additional deer.

On September 2, at 4 o'clock in the morning, we got under way and started north, working through heavy drift ice, and at 6 o'clock came to anchor off Kerneeshgoun village. Upon going ashore we found that

the herd had been driven off to the north side of the Cape Serdze. Again getting under way, we steamed around the cape and came to anchor off Enwonnan at 10 o'clock. Lieutenant White and myself at once went ashore for deer; there were three large herds in the vicinity. Again we encountered a number of natives from Cape Prince of Wales, who were buying and killing on their own account. While one of the herds was being driven down to the beach I took occasion to visit one of the camps of the deer men. I found seven deerskin tents. Around the largest were stacked 34 sleighs; another had 29, and the others, respectively, 15, 12, 9, 7, and 6. The camp aggregated 102 sleighs. In the fall the tents, household effects, and families are carried on these sleighs and taken with the herd from 50 to 150 miles into the interior; the following spring they return again to the coast, thus making two migrations every year. During the day 15 deer were secured. The next day Lieutenant White went ashore, but soon returned and reported that the deer had stampeded during the night and that the herders had gone after them. All day was consumed in waiting in vain.

On September 4, there being signs of heavy ice coming in and shutting off our escape from the bay, at 4 a. m. the ship got under way in a dense fog and worked slowly southward through the heavy floes, occasionally striking one miles in extent. By noon we were clear of the ice, but the fog became so dense that the captain was afraid to venture to pass through Bering Straits and kept off until morning. The next morning passing through Bering Straits, at noon we stopped at the village of Cape Prince of Wales; Mr. Lopp being absent and there being no communication with the shore, the ship again got under way, reaching the reindeer station at half past 9 o'clock that evening. The next morning, under the directions of Mr. Kjellmann and the Lapps, the reindeer were thrown overboard and made to swim ashore, instead of being carried ashore by boat, as upon previous occasions. This was a great improvement in the method of landing them. The ship remained at anchor until the evening of September 26, the time being consumed in looking after the interests of the station. At 10 p. m. the ship got under way for St. Michael, which we reached at noon, September 10. At St. Michael, Mr. Funston, of the Department of Agriculture, who had been spending two years in botanical studies in the Arctic, was received on board; also Capt. J. J. Healy, of the Yukon River, and Mr. V. Wilson, correspondent of the Century Magazine, and Capt. C. Constantine, of the Canadian mounted police and customs service; also 20 destitute miners from the Yukon region.

At noon on the 13th of September, bidding the good friends at St. Michael good-bye, the ship got under way for St. Lawrence Island where we arrived on the morning of the 15th. Mr. Gambell and several boatloads of natives were sent on board, and in the afternoon a number of us returned with them to the shore. During the absence of the ship Mr. Gambell and the carpenter had built a storm door to the house and a good storehouse for the supplies, and fenced the whole in with a good

tight board fence. Various changes had also been made in the interior arrangement of the house so that everything was made comfortable. At 3.15 on the 16th, waving our adieus to Mr. and Mrs. Gambell, who were the only white people on the island left alone with 300 barbarous Eskimos until the good cutter should return next year to see how they were getting on, our ship got under way for the Seal Islands which were reached on the 19th. No one coming from the shore, on the 20th the captain steamed away for St. George Island, stopping a short time to get the mail; the voyage was continued to Unalaska, which we reached on the morning of the 21st; here we found a very large mail had accumulated during the summer; also the United States mail steamer was in the harbor, soon to leave for Sitka. Packing my effects and bidding adieu to Captain and Mrs. Healy and the officers and sailors of the *Bear*, I went aboard the *Dora*, which expected to sail at 6 o'clock on the morning of the 22d. The day opened, however, with a southeastern gale so severe that it was not considered wise to leave the wharf. This gave me an opportunity, that I very much desired, of spending the day with the teacher, Mr. Tuck, and the new United States commisssoner, Mr. Woodward, United States deputy marshal, Mr. Anthony, and conferring with them with relation to school matters in that place.

Before daylight on the morning of the 23d the whistle of the mail steamer notified us to all get aboard. At 7 o'clock the steamer pushed off from the wharf and started for Sitka. Night finding us in a very dangerous part of the coast, the ship hove to until morning. The ship rolled badly and the deadlight window to my stateroom leaked to such an extent that the bed was saturated with salt water. On the afternoon of the 24th a landing was made at Belkofsky, where the ship remained at anchor all night. Father Alexis (Greek priest) with wife and child went ashore. He has been placed in charge of Belkofsky and Unga, the former priest (Metropolsky) having been returned to San Francisco. The monk that was in charge of the Unalaska parish has been ordered back to Russia and a young priest just out from Russia, and a young Russian deacon, have been placed at Unalaska. On the morning of the 25th we had a beautiful view of Pavaloff volcano; a little smoke was seen issuing from the crater; the mountain was covered from crater to base with a fresh coat of snow. In the afternoon the steamer called a short time at Sand Point, and then getting under way reached Unga about half past 3 o'clock in the afternoon. That afternoon and the next day were spent in looking after matters connected with the school at this point. The Aleut girl, Mary Dushkin, 13 years of age, was placed in my charge to go to the Baptist school at Wood Island.

At 5 p. m. on the 26th the ship got under way for Karluk, making the distance in the short space of twenty-six hours. Leaving there at midnight, Wood Island was reached about noon on the following day. At Wood Island the time was spent at Mr. Roscoe's school. The next

morning I visited and inspected the school at Kadiak and arranged for the school gradings. Leaving Kadiak at 10 a. m. we reached Nuchek at 5 o'clock the following afternoon. At this point we were joined by the Rev. Mr. Donskoi, the Greek priest from Sitka, who came aboard the vessel. Leaving Nuchek at 3 a. m., Kyak was reached the middle of the afternoon where we went ashore and visited the two trading posts that are located at that point. The barometer being very low and still falling, the captain concluded to remain in the harbor; a northeast gale continuing, we remained there the following day. In the morning a report was brought to the ship that the natives had brought in the night before two corpses of people killed from the mainland. After breakfast a number of the officers and passengers from the steamer went ashore and a court of inquiry was instituted. It seems that in a drunken row a native man had shot his wife, and afterwards shot himself. Their friends had brought the two bodies to Kyak for burial.

Much evil is being done among the native population through the smuggling of liquor, with the attending drunkenness and demoralization. The traders at the several posts speak of it very freely, but their information always concerns some other post than their own. At A they would tell you of the drunkenness at B, and when you reached B they would tell you of the drunkenness and disregard of the law going on at A. Crime was freely confessed, only it always existed at some other point than the one at which you were at the time visiting. The traders also report that large quantities of opium are smuggled in through the salmon canneries. If one is to believe what the traders say of one another, the condition of things is very disreputable along the whole coast.

About noon of October 3, the gale having somewhat abated, the steamer got under way for Yakutat, which we reached the next day at noon. Going ashore I made a short visit to the Swedish mission and school. Since their disastrous fire of two years ago, they have built, but not completed, a very neat church. They have built two large hayracks, upon which they were hanging hay to cure, after the old-country fashion. After a short stay we were again under way, and at 7 o'clock on the morning of the 6th of October reached the wharf at Sitka, just twenty-four hours too late to connect with the steamer for the States, which runs only once every two weeks. The two weeks, however, passed very quickly and pleasantly with the teachers and schools at that place.

Bidding the friends at Sitka good-bye on the morning of the 18th, I took the mail steamer *City of Topeka* for the States, having in charge John Reinkin, of Unalaska, and Samuel Kendall Paul, of Sitka, native boys, to go to the Indian training school at Carlisle, Pa. That afternoon a three-hours' stop was made at Killisnoo, which enabled me to arrange with Mr. Spuhn with regard to suitable school grounds at that place. At 5 o'clock on the morning of October 19 we

reached the wharf at Juneau, where I was met by Mr. S. A. Keller and Mr. D. Davies, teachers at that place. Although it was still dark I visited the native school building, which had been erected during the summer. At 8 o'clock we were again under way, but stopped some two hours at Douglas Island; from thence into the Sum Dum Harbor, where freight was landed for the new gold mines. The forenoon of the 20th was spent at Wrangell with the teachers and friends at that place. Early on the morning of October 21 a half-hour was given us at Jackson, which was improved in visiting the school and mission station. That afternoon we again got under way and anchored at Mr. Miller's saltery at Hunters Bay. After taking aboard some salmon, we crossed the bay to Suquam, reaching there about 8 p. m. The waters being unsurveyed, the ship remained at anchor until daylight of October 22. Then getting under way, we reached the saltery at Nutquah, where some salmon was taken on board. From thence we reached the saltery at Cordova Bay that afternoon, but, no one being at home to deliver the salmon, the ship turned around and went to Ketchikan, where we anchored for the night.

The next morning we were at Metlakahtla, where I went ashore and had an interview with Mr. William Duncan on school and colony matters. While there I met a delegation of the Tongas natives, who were looking for a new location where they can unite with the Cape Fox natives in having a missionary and school. While at breakfast the passengers of the steamer were serenaded by the brass band, composed largely of former Sitka students. After breakfast the common council of the village asked an audience with Mr. Duncan and myself, the main questions of discussion being means for increasing mail facilities and schools.

At 11 a. m. the ship got under way and went up a fiord to the Cape Fox saltery; taking on the salmon the ship returned to the custom-house at Mary Island, where the "inspector-afloat" went ashore, and the ship at last got under way for Puget Sound, which we reached on the evening of the 26th. Taking the train for San Francisco, and spending a day in settling up the accounts of the season with San Francisco merchants, I took the overland train for Washington, D. C., where I arrived on November 6, having completed a trip of over 23,029 miles.

The hearty thanks of the Bureau of Education, and of myself personally, are extended to the honorable Secretary of the Treasury, to Capt. L. G. Shepard, Chief of the Revenue Cutter Division, and to Capt. M. A. Healy, commanding the U. S. revenue cutter *Bear;* also to the officers and men of the same, for the facilities extended to me and my work during this long voyage.

Thanking you for the support and cooperation of the Bureau, which you have so constantly and uniformly extended, I remain,

Respectfully, yours,

SHELDON JACKSON,
*United States General Agent.*

WHALERS WINTERING AT HERSCHELL ISLAND.

# APPENDIX.

# MAP OF
# TELLER REINDEER STATION
# AND VICINITY
## ALASKA

Scale 1:600,000

*Prepared for U.S. Bureau of Education by the U.S. Coast and Geodetic Survey to accompany Reindeer Report by Sheldon Jackson, D.D., U.S. General Agent of Education in Alaska, 1894*

*Additions and Corrections by Dr. Sheldon Jackson, Lieut. C.M. White, U.S.R.C. and W.T. Lopp.*

o Summer Encampment of Reindeer Men

Statute Miles

ARCTIC OCEAN

SIBERIA

BERING SEA

Good Pasturage for Reindeer

Poor Pasturage for Reindeer

Norton Bay

Bristol Bay

Kuskokwim Bay

Nunivak I.

St. Matthew

Pribilof Islands

Alaska Peninsula

Shumagin Is.

Gulf of Anadyr


TELLER REINDEER STATION IN WINTER.

# INSTRUCTIONS FOR CONDUCT OF REINDEER STATIONS.

U. S. Revenue Cutter Bear,
*August 1, 1894.*

Sir: For the guidance of yourself and assistant in the care of the station and herd of reindeer attached to it, I leave you the following general directions. I make them general because, owing to the distance of the station from Washington and our ability to communicate with you but once a year, you must be left largely to the exercise of your own judgment.

In my communication of July 27 you are authorized to furnish 100 head of deer to the Congregational mission at Cape Prince of Wales, and send with them the five apprentices from that place, together with their personal deer; also, if they may so desire it, loan 100 head of deer to Antesilook, Iziksic, Kotowak, Iuppuk, and Soovawhasic.

If possible, you will visit these several herds at least once a year and advise those in charge with regard to the general management of the same.

If Antesilook & Co. establish their herd this season, you are expected to have the general oversight of the same during the five years that the Government retains the ownership, and to visit the herd as often as you may find practicable.

## THE HERD.

*Grazing.*—As the herd has for the past two years been kept near the station, you will now send it away, preserving the grazing in the immediate vicinity of the station for the months of July and August, when, in landing deer from Siberia, it is important to have the herd, or a portion of it, close by to receive the newcomers.

*Driving.*—Keeping the herd away from the station will accustom the steers to the sled and furnish the apprentices practice in driving.

In this connection you will experiment with harness. I am sure that a better form of harness can be devised than that used in Siberia, and perhaps than that of the Lapps. I would commend for trial the harness used last season by Mr. Lopp.

*Protection from dogs.*—At the outset much trouble was anticipated from native dogs stampeding and killing some of the herd. It is with satisfaction that I record that these fears have not been realized. During the first season but five dogs were shot and last year but one.

However, as there is always some danger from strange dogs, you will direct the herders to shoot any dog interfering with the herd, and report the same to you when they come off watch. When a dog is thus killed, you will at once send for the owner, express to him your regret at the necessity for killing, and then pay him for his dog. So far, $1.50 in barter goods has been considered ample compensation for the loss of a dog. When any visiting natives come into the neighborhood of the herd, have them notified at once to keep their sled dogs tied up.

When traveling, it is better to pass around instead of driving through a native settlement, and thus avoid the dogs that are unaccustomed to the presence of deer.

*Killing.*—As it is the purpose to multiply the herds as rapidly as possible, no deer are to be killed except in extreme emergencies, and then only steers.

When a deer meets with an accident, such as the breaking of a leg, or becomes so old and feeble that it probably will not live through the winter, it can be killed upon the order of the superintendent.

When a deer is killed or dies, the date and cause of death will be noted in the daily journal and included in the annual report of the station.

The hide, horns, hoofs, sinew, and carcass of deer killed or dying remain the property of the Government, and are to be ultilized for the benefit of the station.

The meat is to be used for feeding the herders, the same as beef purchased in San Francisco. No reindeer meat is to be sold or given to outside parties. The superintendent and his assistant can purchase for the use of themselves and families at the rate of 15 cents per pound, after the herders have been supplied. The tongues of those killed are to be prepared for market.

You will also encourage the Lapps to make glue for the market from the horns and hoofs and teach the method to the apprentices. As an incentive, the net proceeds of the sale can be placed to their credit.

## HERDERS.

The herders consist of two classes—the Lapps and the Eskimo apprentices.

*Probation.*—To train up the young Eskimos of northwestern Alaska in the management of reindeer you may receive at the station this present year not to exceed fifteen wideawake young men. A weekly roll of the apprentices shall be kept, showing the number of deer each has lassoed and milked and the approximate number of miles each has driven during the week, together with a record of deportment, progress and general adaptability to the work. A summary of this roll and record will be sent with your annual report.

If after a few months' trial, or at the end of the year, one has been found lazy, dull, indifferent, or manifestly unsuited to the work, he shall be sent away from the station and another given his place. At


ENGLISH MISSION, FORT SELKIRK, YUKON RIVER.

the station, as everywhere else, there must be a sifting process to get rid of the incompetent and encourage the deserving.

As these apprentices will become the managers of the first herds among the people, it is important that they should be picked men—as far as possible the best among their people.

Apprentices should be encouraged to remain with the central or branch herds in the care of the Lapps until they are thoroughly drilled in all departments of the work.

In receiving applicants, consideration should be given to the locality from which they come, and the first preference be given to the sections where it is proposed to send the first herds. Those places at the present time are St. Lawrence Island, Point Hope, Unalakliк, the Yukon, Kotzebue Sound, and Point Barrow.

*Instruction.*—The object of bringing the Lapps to Alaska is the instruction of native young men in the best methods of caring for and handling reindeer. You will constantly impress upon the Lapps that their duties are not alone to manage the herd, but also to teach the apprentices how to do it.

As the Lapps have probably had no experience in teaching, you will point out to them ways and methods of doing it.

The apprentices are to be drilled in herding, driving, castrating, branding, milking, cheese making, lasso throwing, preparation of skins, glue making, the manufacture of sleds, snowshoes, harness, etc.

To afford an opportunity of attending school, you will divide the apprentices into two divisions of, as far as may be, equal numbers.

From September 1 to December 31 the first division will remain at the station attending school and the second division will be sent out with the herd. From January 1 to April 31 the divisions will exchange places, the first division going out to the herd and the second division coming to the station to attend school. From May 1 to August 31 both divisions will be with the herd and engaged in other work pertaining to the station.

While the apprentices are at the station for school purposes, they shall be required to attend regularly during school hours, and after school hours assist in procuring fuel and in performing such other duties as the superintendent may prescribe.

*Support.*—The apprentices will be fed, clothed, housed, and instructed at the expense of the Government.

*Food.*—Not to unfit the apprentices for their future life, when they will be unable to secure much of the food of civilization, you will continue to give them their native diet of fish, seal, and oil, to which you will add a limited supply of flour, beans, and tea. Tobacco will not be furnished.

To provide a sufficient quantity of fish, seal, oil, and skins, you will during the season send out parties to hunt the seal and salt the fish. You will also encourage the herders when off duty to trap and hunt

birds, rabbits, and foxes. Their flesh will increase the food supply. The hunters may retain the pelts of the rabbit and fox as their private property.

The supplies will be issued in the form of rations at regular intervals. A statement of the amount and character of the ration and time of issuing will be included in the annual report.

Outsiders and friends are not to be allowed to gather in and eat with the herders. Nor shall the herders be allowed to give away their food.

The custom of a whole circle of relatives living off of the supplies of one of their number who may have more than they is so strong among them that unless you exercise constant vigilance you will find the apprentices assisting many of their relatives from the Government supplies.

If at any time near relatives of the apprentices from a distance visit the station, and it becomes necessary to feed them, the supplies will be issued directly from the superintendent or his assistant, and not by the apprentice.

If a visiting party prolong their stay unduly, the supplies may be cut off.

Each of the two divisions of the apprentices will form a separate mess, which will be supplied with the necessary iron teakettle, boiling pot, frying pan, granite-ware plates and cups, iron forks and knives. These articles remain the property of the Government, and are to be carried on the quarterly inventory.

*Clothing.*—You will supply the apprentices with comfortable fur clothing according to the season. In the preparation of such clothes you will use the skins obtained from the herd and the catch of seal. If the supply proves insufficient, you can purchase additional seal skins from the natives. As it is more economical to purchase reindeer clothing ready-made in Siberia than to buy the skins and make them up, you will each season make out a list of the number of artegas (coats) and pants needed and give the same to the purchasing agent to buy in Siberia at the same time that he procures the deer.

Reindeer skins will be furnished the apprentices for bedding, and they will be carried on the inventory list as the property of the Government.

Twice a month in suitable weather the apprentices shall be required to hang their bedding in the air and sun.

*Accounts.*—You will open an account with each apprentice and his family, and charge against him all garments, bedding, ammunition, etc., together with date of issue. Cooking utensils are to be charged against the mess.

Such an account will be a check against wastefulness, secure impartiality of treatment, and enable the Government to keep an account of the expense of training each individual.

Once a month you will make an inventory of all clothes, bedding, cooking utensils, and other Government property used by the appren-

VILLAGE OF "40 MILE CREEK," YUKON RIVER.

tices. If any one fails to show any skin (bedding), article of clothing, or other property the Government has loaned him, or satisfactorily explain its absence, the same shall be charged against him, and, at the discretion of the superintendent, its value may be taken from the deer allowed him. Apprentices need special watching that they do not give their clothes, bedding, or other Government property to their friends.

*Wives.*—If any of the apprentices are married and have their wives with them, you can issue a ration and clothing to the wife also, requiring from her in return some sewing and cooking for the apprentices. If there are several women you can apportion the work among them.

*Pay.*—An apprentice that proves himself faithful and efficient can, at the end of the first year, have 2 deer for himself; at the end of the second year 5 additional deer, and at the end of the third year and each succeeding year that he remains in the herd, 10 deer. These, however, can not be sold by him, except with the written permission of the superintendent in charge, and can not be removed from the herd until the owner himself takes them to assist in forming a new herd.

The written permission to sell shall be sent by the superintendent with other papers to the Bureau of Education.

If, at or before the end of the first year, an apprentice leaves the station or is sent away by the superintendent for cause, he will not be entitled to any deer.

If at any time after the first year an apprentice may wish to dispose of his deer, the superintendent is authorized to purchase the same for the Government at the rate of $10 per head.

## DOGS.

*Herding dogs.*—It is important to create and train a large supply of herding dogs in order to provide for the new herds that shall be established from time to time. To accomplish this, great care will be taken to keep pure the breeds of Lapp and Collie dogs now at the station. It may be well also to experiment with a cross between the Lapp and Collie.

*Sled dogs.*—As the deer do not travel well on the ice, you can keep at the station one good team of sled dogs for use on the ice in sealing, and also to assist in hauling driftwood for fuel:

## STOREHOUSES.

Your ability to secure supplies but once a year suggests the wisdom of having two storehouses and dividing your provisions and supplies between them. This will prevent the loss of all in the event of a fire.

## SCHOOL.

The assistant superintendent will keep school at the station from September 1 to April 30, except on Saturdays, Sundays, Christmas, New Year's, and national holidays.

The pupils will be drilled in elementary reading, arithmetic, and writing, and daily exercises in phonetics.

Special attention will be given, both in and out of school, to the use of the English language, not only by the apprentices, but also by all the employees and their families. Even the Lapps should be encouraged to attempt to learn English. An account of progress in this direction will be made a part of the annual report.

The apprentices at the station during the school time of their division will be required to attend regularly.

As the present schoolroom will be needed for residence purposes, you will at once erect a schoolhouse from drift logs.

## MORALS.

No liquor, gambling, profanity, or immorality will be allowed at the station or herding camps.

Women other than the wives of apprentices will not be allowed at the station or camp quarters of the apprentices.

No barter or unnecessary work will be allowed on Sunday.

## REPORTS.

*Daily journal.*—The assistant superintendent will keep a brief daily journal of events at the station, extending from July 1 each year to the following June 30.

*Purchase account.*—The superintendent will keep, in a blank book furnished for the purpose, an account of all supplies purchased for the station, giving date of transaction, name and quantity of article, and price of same at the money valuation of the barter goods paid in exchange.

*Quarterly inventory.*—On the last Saturday of March, June, September, and December, each year, the assistant superintendent will make out an inventory of all stores and public property at the stations, including bedding, cooking utensils, etc., issued and in use by the apprentices. This inventory will be made with four parallel columns for the four quarters.

*Apprentices' account.*—(See p. 72.)

*Roll of merit.*—(See p. 73.)

*Annual requisition.*—Upon the 1st of July, each year, the superintendent will make out a requisition for such provisions, stores, medicines, school appliances, lumber, coal oil for school and apprentices, barter goods, etc., that need to be purchased for the station and sent up the following year. This list will only include those articles furnished by the Government. Personal supplies needed by the superintendent and assistant superintendent will be placed on a separate requisition and paid for out of their funds.

A copy of each of the above reports will be annually mailed to the


RUSSO-GREEK MISSION, IKOGMUT, YUKON RIVER.

general agent of education in Alaska, United States Bureau of Education, Washington, D. C.

*Annual report.*—Upon the last day of June of each year the superintendent will make out and mail to the above address an annual report of operations at the station.

Said report will include among other things the condition of the station, buildings, furniture, stoves, lamps, bedding, boats, nets, sleds, tools, medicine, and other appliances; statistics with regard to the herd, stating births, deaths, and number trained to driving and milking; progress in manufacture of cheese and glue; character and progress of experiments to secure improved harness, and methods of milking; etc.; the training of herd and sled dogs; number and character of grazing stations; results of fishing and sealing; efficiency and progress of the apprentices and Lapps; the amount and character of the rations and their issue; the introduction of the English language; visits to outside herds, together with any recommendations that experience may suggest to increase the efficiency of the work at the station.

Wishing you success in your responsible position, I remain,

Yours, truly,

SHELDON JACKSON,
*General Agent.*

Mr. WILLIAM A. KJELLMANN,
*Superintendent of Teller Reindeer Station,*
*Port Clarence, Alaska.*

---

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
*Washington, D. C., February 24, 1894.*

MY DEAR SIR: I send you a copy of the immigration laws and regulations. On page 9 you will notice that where an occupation or trade has been introduced into the United States since the passage of the immigration act (1885) skilled labor can be brought into the country. On page 9 you will find the section marked. Now, as herding reindeer was introduced into the United States in 1892, I do not see anything to prevent the introduction of Laplanders to take care of them. I called on Mr. Herman Stump, Superintendent of Immigration, and he says there is nothing to prevent our bringing the Lapps into the United States.

Please remember to bring us a good specimen of tanned reindeer leather, also a package of reindeer glue, and from two to four dozen photographs representing Lapp and reindeer life.

Wishing you great success in your work, I remain,

Respectfully, yours,

SHELDON JACKSON.

Mr. WM. A. KJELLMANN,
*Care of Feddersen & Nissen, Hammerfest, Norway.*

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION, ALASKA DIVISION,
*Washington, D. C., February 28, 1894.*

MY DEAR SIR: I have received word from the Roman Catholic fathers that they want one family of Roman Catholic Lapps for herding at their station in Alaska. You will therefore, in addition to the five families of Lutheran Lapps, bring with you one family of Roman Catholic Lapps. I shall request the Commissioner of Education to telegraph you the same thing about the time you reach Hammerfest.

Wishing you great success, I remain,

Respectfully, yours,

SHELDON JACKSON.

Mr. WILLIAM A. KJELLMANN,
*Care of Feddersen & Nissen, Hammerfest, Norway.*

---

A HERD OF REINDEER ESTABLISHED AT CAPE PRINCE OF WALES.

U. S. REVENUE CUTTER BEAR,
*Bering Sea, Alaska, July 27, 1894.*

DEAR SIR: In carrying out the plans formulated for the introduction of domestic reindeer into Alaska, you will turn over to Mr. W. T. Lopp, superintendent of the mission station of the American Missionary Association at Cape Prince of Wales, 100 head of deer, at such time as it will be convenient for him to receive them. He will take them at the station and drive them across the country to his mission.

If you can spare one of the Lapps for a few days, and Mr. Lopp shall wish his services, you can send him with the herd during the driving. When the herd reaches the new station Mr. Lopp will see that the Lapp is returned to the Teller Station.

There are at the Teller Station five apprentice young men from Cape Prince of Wales, who will return to their homes with the new herd. Those that served faithfully in the herd at the Teller Station for a full year are entitled to 2 deer each, and you are authorized to give them the same on condition that the deer are not to be killed and are to remain in the mission herd for a period of not less than two years.

If any of them prefer to take supplies or barter in place of their deer, you can buy their deer for the Government at the rate of $10 worth of barter for each deer.

An te si look (Charlie), the herder, already has 4 female deer and their fawns (8 in all) in the herd. He is entitled to 5 more for part pay of services for the year 1893–94.

If he remains in the employ of the station during 1894–95 he is by special arrangement to receive 15 more, and then in the summer of 1895, in company with his brothers and Soo va wha sic, a herder, or such other parties as he may select and you think wise, he will start a separate herd. To accomplish this you will allow them to take the deer belonging to them, and then loan them 100 more for five years. In considera-

SCHOOL CHILDREN, POINT BARROW, ALASKA.

tion of this loan the parties accepting it agree that the herd shall be under the general supervision of the superintendent of the Teller Reindeer Station, and that they will not kill or allow to be killed (except by accident or disease) any bearing female deer; and further, they agree that at the end of five years they will return to the Teller Station 100 deer. All the increase during the five years becomes their private property.

They further agree that if it is found that the herd is being neglected and in danger of being lost, then the superintendent of the station can reclaim the 100 deer loaned, even in advance of the five years' limit.

If Charlie shall decide to commence his herd this fall you are authorized to carry out the above plans, with the single exception that if the herd is established this season he will receive 15 head of deer less, the same being those he would receive for services during 1894–95.

Very respectfully, yours,

SHELDON JACKSON,
*General Agent.*

The SUPERINTENDENT TELLER REINDEER STATION.

---

U. S. REVENUE CUTTER BEAR, *August 20, 1894.*

SIR: I hereby turn over to your fatherly care and attention Elektoona and Ahlook, two young men sent by the missionaries at Point Hope to learn the management and care of reindeer.

They are to remain for two years, if they prove worthy, and are to be fed, clothed, and taught at the expense of the Government, the same as the other apprentices.

Very truly, yours, SHELDON JACKSON,
*General Agent.*

Mr. WM. A. KJELLMANN,
*Superintendent Teller Reindeer Station.*

---

U. S. REVENUE CUTTER BEAR, *September 7, 1894.*

SIR: Antesilook (Charlie) requests me to speak to you with reference to supplies when he shall go out with his herd. He would like to purchase 10 sacks of flour, 10 fathoms of drill, 10 cans of powder, 5 boxes of caps, 5 packages of tea, twine for nets, 2 boxes of bread, one-half box plug tobacco, 10 leaves tobacco, 4 bunches matches, 1 gallon molasses, a little soap.

If some of the above can not be spared, or in the quantities asked, you can arrange with him. If he wants to pay in live deer, you can allow him at the rate of $15 each for his deer.

Very truly, yours,

SHELDON JACKSON,
*General Agent.*

Mr. WILLIAM A. KJELLMANN,
*Superintendent, Teller Reindeer Station.*

# ANNUAL REPORT OF TELLER REINDEER STATION.

By W. T. Lopp, Superintendent.

---

TELLER REINDEER STATION,
*Port Clarence, Alaska, July 2, 1894.*

DEAR SIR: It gives us great pleasure to be able to report that the United States reindeer herd has lived, thrived, and multiplied this second winter, thus proving beyond doubt that the philanthropic measures which you, through the Bureau of Education, have adopted for developing the resources of Alaska and improving the conditions of its people, are no longer an experiment, so far as climate and food are concerned.

We have been in perfect health and have enjoyed the year's work.

After moving down from Cape Prince of Wales, July 10, 1893, the remaining six weeks of the short Arctic summer were occupied in making preparations for the coming winter. To assist us in this, Capt. M. A. Healy, of the U. S. revenue cutter *Bear*, left his carpenter and two men on shore until the *Bear's* return from the north, August 20. With their aid the station house was finished inside, converting the barn-like structure into six comfortable rooms. A shed addition was built on the north side of the house, which we have used for herder's quarters and a storeroom. A scow for boating driftwood and a small dingey for fishing were also built.

Under my directions the Eskimo apprentices built two comfortable log houses, plastered them with mortar made of cement and clay, and sheathed them inside with odds and ends of lumber. Moss was packed between the sheathing and lumber, making the houses very warm and comfortable. These are the only log houses on the coast north of Norton Sound. They have been admired by so many natives from other settlements during the winter that doubtless some of them may try to build houses like them. We also built a large storehouse of rough lumber in which to keep supplies, so as to be safe in case of fire.

## THE HERD.

There was so much necessary work about the station that we were prevented from giving much time or attention to the deer during the summer months. However, we tried enough experiments to arouse the jealousy of our Siberian herders. Contrary to their wishes, we used

SCHOOLHOUSE AND PRESBYTERIAN MISSION, HAINES, ALASKA.

the shepherd dog, Jack, a few times in rounding up. We also made a large pen into which we drove the herd for milking. On September 30 the herd were driven into the pen and counted. The entire number was found to be 343. Since then we have lost 20 by disease and accident. But April, May, and June added 145 fawns to our herd. In the fall of 1894, 120 deer were brought from Siberia, making a total of 588.

### HERDING.

In May and June we found the herd inclined to scatter in search of a grass with a clover-like head which is just coming through the ground. Herding in the summer is much more disagreeable and unhealthy than in the winter. With the exception of a few days in April the watches have been relieved every twelve hours. Grass is plentiful in the summer and an abundance of moss is always accessible in winter. In the winter when the snow becomes packed or hard it is necessary to move the herd to a new locality, and in the spring during the calving season a slope sheltered from northerly winds should be sought.

### DRIVING.

In October when the ground becomes covered with snow the deer become more docile, and many of the sled deer, and some of the others, can be caught without the use of a lasso, by simply holding out to them a seal-skin cup filled with human urine. Their fondness for the salt which it contains causes them to run to the herder, and while drinking the contents of the cup he quietly passes his arm around its neck. We have tried salt but it does not answer the same purpose. Most of them refuse it. A few of them have learned to eat flour, corn meal, and bread. When the season for sledding opened we were much surprised to learn that we had only 11 sled deer, 2 of which were very old. Anxious to have more, we have asked our Siberian herders how long it would require to break in new deer, and received the discouraging answer "Oh, I believe two winters, I think, sometimes three winters." It was first necessary, they said, to rebreak the old sled deer.

The Siberians in driving use the whip and slap the lines constantly. This habit probably originated in the drivers becoming cold, and to keep up the circulation keeps either his whip or lines in constant motion.

Unfortunately we were compelled to use our few sled deer for hauling wood, also for breaking new deer and driving to and from the camp. We should have had at least 40 sled deer this winter for our herders to practice driving.

### BREAKING.

We have had 13 deer under breakage, with varying degrees of success. The Siberian method is to catch a young deer 1 or 2 years old and lead it for several successive days, then hitch it in by the side of a

good leader, and drive them. As a rule, the young deer becomes stubborn and lies down, and if the leader is unable to pull it along, the driver must get off his sled and try whipping it across the points of its ears with a thong, or, taking hold of its horns, he must drag it along by main strength.

On a few occasions while breaking a very wild and fierce deer, Mr. Grubin found it necessary to sit down on the sled and wait several hours until the stubborn animal was ready to go of its own accord.

### HARNESS.

The Siberian harness is different from all harnesses which we have seen described in books. The strap used for the collar passes over and across the upper half of the fore shoulder and between the forelegs where the ends pass under a girth, and are attached by means of a horn button to a trace which passes outside the right hind leg. The leading deer's trace is made fast to the center of the sled and the off deer's trace to the middle of the left side of the sled. The team is guided by jerking one of two lines which are attached to a halter passing around the deer's horns. These lines are fastened very tightly around the wrists of the driver, so that in case the deer is inclined to run away he must drag the driver. The single traces passing on the outside of the deer's hind legs necessarily causes them to pull slightly sidewise, making it difficult to drive them on a bee line. Often in driving a distance of 10 or 15 miles the trace chafes through the skin under the belly and on the outside of the hind legs. The fresh blood freezes into sharp crystals on the trace, cutting the poor animal like a saw every step it takes. When this chafing occurs it is necessary for the driver to repeatedly remove the blood with his mittens. This uncivilized harness, however, is not without its merits. Its simplicity gives it many advantages over other harnesses for breaking deer.

At the expense of being ridiculed by our Siberian herders I have tried a harness of my own make, consisting of collar, back and belly band, and two traces. Although not so simple as the other harnesses, it has many advantages over them.

In order to test their relative merits, I sent Mr. Grubin, Ta oo tuk, and So kwee na to Ki now guk (40 miles north). Two of them drove double teams with Siberian harness and the other a single deer with the collar and trace harness. The result of the comparison showed that one deer in the latter harness can draw the same load with less exertion than two in the other harness. We have tried this same harness with a deer hitched in shafts to a cart which An te si look made, and found it answered the purpose admirably. The shoulders and breasts of reindeer are of an unsuitable shape for the breast harness so common in the States. We think forked or checked lines would be an improvement on their double lines, although when we tried them on some old deer it seemed to irritate them.


TELLER REINDEER STATION.

In traveling we have used for deer sleds the Eskimo hunting sled, and for hauling, the Eskimo freight sled. When hauling heavy loads the deer go in a brisk walk. A train of sleds is formed with only one deer hitched to each. The first deer of the train is led by a driver, and each of the others is tied to the sled in front of it and a second driver walks behind. By this arrangement two men can haul ten sled loads of wood or freight at a time.

### MILKING.

Sucking is the only way the Siberians have for milking reindeer, and they are loath to understand why "white men" can not appreciate it when taken from the cows in this manner. Later in the season, upon the arrival of the Lapp herders, they had no difficulty in milking the same reindeer while standing. The milk is very rich and palatable, and we have fed it to our babes with good results. The milk in September was so thick and rich that we diluted it with four parts of water before using, while the milk in June was much thinner, requiring only one part of water to reduce it to the richness of cows' milk. For 6 herders to catch 5 cows, hold them down, and milk with thumb and forefinger 1 quart of milk usually requires about two hours.

### HERDERS.

We have had 3 Siberian herders with us, 2 of them, Anker and Dantin, from South Head, and the other, Nootadl got, from near Cape Serdze. On the whole we have found them very useful, but at times they have given us so much trouble that we have wished they were on the other side of Bering Strait. Unlike the Eskimos, they have no control over their temper. Anker on one occasion beat his wife shamefully, and at another time became angry at a tired deer, and, because it refused to rise, beat it almost to death and then broke its jawbone by stamping it. He was stubborn, jealous, and conceited. His jealousy was especially manifest when the Alaskans or ourselves drove the deer. In February, when Mr. Grubin was making fair progress breaking a wild deer which the Siberian had said could never be broken to the sled, his jealous feelings were aroused to such a state that he became very insolent and claimed that he alone last fall was left in authority over the herd. We then discharged him, and since then our Alaskans have asserted themselves more and showed what they were capable of doing.

The other two have shown themselves willing to teach and show the Eskimos, but on account of their uncontrollable temper they have each been the aggressor in fights with the Eskimos, which would have resulted in their death if no one had been here to separate them. They would like to serve another year.

We feel encouraged at the progress made by our Alaskan herders. They have taken great interest in lassoing and driving deer, and, with

one or two exceptions, we have found them faithful herders. They are able, without the aid of Siberians, to go to the herd, lasso sled deer, harness them, hitch them to sled, and drive to the house. At times those who are from distant settlements become homesick. When it has been practicable, we have let them visit their homes once during the year, with good results. There has been little or no friction among the natives of the different tribes, but now, as the year is closing, we think we can see indications of tribal jealousy arising, which in another year might result in something serious.

Our Alaskan apprentices are:

| No. | Name, etc. | Years of age (about). |
|---|---|---|
| 1 | Moses, St. James Mission, Yukon River | 17 |
| 2 | Martin, Oonalakleet, formerly from Kuskokwim River | 16 |
| 3 | Tat pan, Oonalakleet | 18 |
| 4 | Oo kwit koon, Golovin Bay | 21 |
| 5 | Soo va wha sie, Cape Nome | 18 |
| 6 | An te si look (wife and two children), Cape Nome, formerly from Kinyeazruk | 30 |
| 7 | Kum muk (wife and two children), Kiyeazruk | 30 |
| 8 | Se keog look, Synok (Port Clarence) | 22 |
| 9 | Oo kwood let, Synok (Port Clarence) | 16 |
| 10 | Ta oo tuk, Polazruk, formerly of Port Clarence | 18 |
| 11 | Sokweana, Cape Prince of Wales | 16 |
| 12 | Keok, Cape Prince of Wales | 14 |
| 13 | Oo ten na, Cape Prince of Wales | 17 |
| 14 | Ne tuxite, Cape Prince of Wales | 18 |
| 15 | Kiyeazruk, Cape Prince of Wales | 15 |
| | Kungih, Cape Prince of Wales (servant girl) | 14 |
| | Woodlek, Cape Prince of Wales | 18 |
| | Sungoo (herder), Port Clarence | 22 |
| | Nuv en ok (Nootadlgot's wife) and two children, Cape Prince of Wales | 30 |

Two of the Alaskans who were trained here last year remained but a few weeks with us.

Anik, the third one of the trained herders, remained here until January, when we discharged him for coming to the house and leaving the herd alone after dark before relieved. I had found him untruthful and unfaithful on former occasions, so was glad to have an opportunity to make an example of him.

During the year two others, one from this settlement and the other from Nook, tried herding, but became tired and went back to their homes.

The Indian boy Moses deserves special praise and mention. He left his far-away home on the Yukon River in January, 1893. Traveling on chance sleds, he did not arrive at the station until the following April. Finding he could not be kept here on account of the scarcity of supplies, he lived with an Eskimo at Cape Nome until the ships came. He is one of the best drivers among our herders, and is now glad he did not return home last summer.

We have chosen young men and boys for herders, because their habits are not yet fixed, and we hope that when they once become accustomed to the routine life of a herder they will be better satisfied and contented with it than older natives would be. At first most of them were afraid to herd after night, but that soon wore away, and now most of them

prefer to be on the night watch. They have been faithful in the roughest and most disagreeable weather which we have had. On one occasion, last December, the night watch which went out to relieve the day watch was unable to find them and the herd on account of a blinding snowstorm or blizzard. Wandering about until tired, they lay down and slept until morning, when, the storm having abated, they found the herd and relieved its faithful herders from their long and disagreeable watch. The boys were Soo va wha sie, from Cape Nome, and Oo ten na, from Cape Prince of Wales. They seemed very proud when we praised them for staying with the herd so long and presented them with half a pound of powder each.

At another time when the relief watch was unable to find them on account of the blinding snow, Kiyeazruk remained with the herd while his fellow herder, Sokweana, came to the house for some food to carry back to him and his companion on their twenty-four-hour watch.

During summer, fall, and early winter when the herd was kept within 3 miles of the station, two herders stood day watch and three night watch. From January 6, while living in a deerskin tent at Cape Reily, 9 miles south, one stood day watch and two night watch. Since April 1 two have stood both day and night watches.

During the months of November and December the Siberians devoted almost all their time to breaking deer, each of them herding only once a week.

Our herders took much more interest and made much more progress when the herd was away from the station. While camping at Cape Reily seventy-six trips were made to the station with deer sleds, thus giving our apprentices much needed practice driving.

From May 21 to June 22 we kept the herd about 15 miles northwest of the stations, our herders living in two canvas tents.

*Merit roll of apprentices.*

| | Herding. | Driving. | Breaking to harness. | House work. | General efficiency. | Feeding. |
|---|---|---|---|---|---|---|
| Moses | 85 | 89 | 88 | 88 | 93 | 94 |
| Martin | 86 | 78 | 85 | 88 | 94 | 92 |
| Tat pan | 83 | 76 | 80 | 84 | 90 | 89 |
| Oo wkit koon | 88 | 79 | 90 | 92 | 94 | 90 |
| Soo va wha sie | 85 | 85 | 86 | 90 | 84 | 88 |
| An te si look | 90 | 88 | 78 | 95 | 96 | 95 |
| Se keog look | 88 | 80 | 79 | 92 | 87 | 90 |
| Kum muk | 83 | 82 | 75 | 90 | 83 | 88 |
| Oo kwood let | 80 | 84 | 74 | 80 | 85 | 85 |
| Ta oo tuk | 80 | 90 | 89 | 78 | 92 | 95 |

RATIONS ISSUED HERDERS AND APPRENTICES.

A weekly issue to each man of 6 pounds flour, 7 pounds bread, one twenty-fifth pound of tea, one-half pound of sugar, one-fourth pint of molasses, $1\frac{1}{6}$ pounds of beans, three-fourths of a pound of corn meal, 12 pounds fish, one-eighth pound of seal meat, one block of matches, all the seal oil asked for, and on holidays dried apples, berries, or salt pork.

## SEASONS.

We have had a wet summer, unusually cold winter, and a late spring. Old natives say that they have never seen a spring with so few southerly winds, the mean temperature for April being +2°; maximum, +20°; and minimum, −10°. For the same month last year the mean temperature was +21°; maximum, + 42; and minimum, −6°.

## CALVING.

Of the 186 fawns calved we lost 41. Most of these were lost by being frozen or deserted by the mothers. Many of the yearlings calved this year. In many cases they deserted their young, becoming scared as soon they were dropped.

## DOGS.

We have made some use of our shepherd dogs, and feel confident that with the proper training one dog will be equal to two men in herding.

Very often when lassoing deer one animal will leave the herd and run to the hills, but Jack will go after it and bring it back, thus saving a herder 3 or 4 miles run.

Eskimo dogs have given us little or no trouble. We have killed only one during the year. If the deer men of Siberia have the same dogs around their camps, we see no reason why they should be considered one of the obstacles to raising deer in Alaska.

*Statement showing the number of deaths in the United States reindeer herd at Port Clarence, July 1, 1893, to June 30, 1894.*

[Fawns calved in 1894 not included.]

| Cause of death. | Date. | Old deer. | | Fawns. | |
|---|---|---|---|---|---|
| | | Male. | Female. | Male. | Female. |
| | 1893. | | | | |
| Leg broken by Mr. Bruce's dog | July 9 | ..... | 1 | ..... | ..... |
| Strayed; ran away when landed from the Bear | July 11 | ..... | 1 | ..... | ..... |
| Stomach injured by handling in transportation | Aug. 8 | ..... | 1 | ..... | ..... |
| Shot accidentally by Anker (Siberian), bird hunting | Aug. 23 | 1 | ..... | ..... | ..... |
| Killed by order of superintendent; lost one foot last winter | Sept. 20 | ..... | 1 | ..... | ..... |
| Fighting, injured its head | Sept. 22 | 1 | ..... | ..... | ..... |
| Crippled in its back | Oct. 8 | ..... | 1 | ..... | ..... |
| Hip bone broken in catching with lasso (Anvik) | Oct. 26 | ..... | ..... | 1 | ..... |
| Fell on a wood shed and broke its leg | Oct. 29 | 1 | ..... | ..... | ..... |
| Hip bone broken; manner unknown | Dec. 7 | ..... | ..... | ..... | 1 |
| Leg broken with lasso; two deer caught in one noose (Dantin) | Dec. 12 | ..... | ..... | ..... | 1 |
| | 1894. | | | | |
| Ran away while driving the herd to Cape Riely; shot by native police | Jan. 7 | ..... | 1 | ..... | 1 |
| A victim of Anker's wrath while driving to camp | Feb. 12 | 1 | ..... | ..... | ..... |
| Leg broken; entangled in harness in deep snow (Dantin) | Mar. 3 | 1 | ..... | ..... | ..... |
| Internal injuries | Apr. 18 | ..... | 1 | ..... | ..... |
| From being struck in the flank with a whip (Nootadlgot) | Apr. 30 | 1 | ..... | ..... | ..... |
| Old age and warbles | May 5 | ..... | 1 | ..... | ..... |
| Do | May 8 | ..... | 1 | ..... | ..... |
| Disease of kidneys | May 18 | ..... | 1 | ..... | ..... |
| Bleeding after a miscarriage | May 22 | ..... | ..... | ..... | 1 |
| Two fore legs broken; manner unknown | June 9 | ..... | 1 | ..... | ..... |
| Leg broken from being tramped upon | June 10 | ..... | ..... | ..... | 1 |
| Hip joint injured | June 12 | ..... | 1 | ..... | ..... |
| Stiffness | June 22 | ..... | 1 | ..... | ..... |
| Total | ..... | 6 | 13 | 1 | 5 |

Total deaths, 26.

MORAVIAN MISSION, BETHEL, ALASKA.

SCHOOL CHILDREN, BETHEL, ALASKA.

*Death of fawns calved April, May, and June, 1894, reindeer station, Port Clarence, Alaska.*

| Cause of death. | Number. | Date. |
|---|---|---|
| Stillborn | 1 | Apr. 12 |
| Desertion | 1 | Apr. 15 |
| Frozen | 1 | Apr. 19 |
| Do | 4 | Apr. 20 |
| Do | 1 | Apr. 22 |
| Killed by a cow | 1 | Do. |
| Killed by cows | 2 | Apr. 23 |
| Frozen | 2 | Do. |
| Do | 2 | Apr. 24 |
| Shepherd dog, Jack | 1 | Apr. 25 |
| Frozen | 3 | Apr. 26 |
| Do | 1 | Apr. 27 |
| Stillborn | 1 | Apr. 28 |
| Do | 1 | Apr. 30 |
| Do | 1 | May 1 |
| Frozen | 1 | Do. |
| Stillborn | 1 | May 5 |
| Frozen (yearling's calf) | 1 | May 6 |
| Stillborn | 1 | May 17 |
| Desertion | 3 | Do. |
| Do | 1 | May 20 |
| Do | 3 | May 22 |
| Shepherd dog, Jack | 1 | May 27 |
| Killed by cow | 1 | June 1 |
| Motherless; killed by order of Siberians | 1 | June 12 |
| Shepherd dog, Jack | 1 | June 22 |
| Legs broken in pen | 2 | June 30 |

RECAPITULATION.

| | |
|---|---|
| Stillborn | 6 |
| Frozen | 16 |
| Desertion | 8 |
| Killed by cows | 4 |
| Killed by Jack | 3 |
| Legs broken | 2 |
| Motherless | 1 |
| Grand total | 40 |

Number of fawns living, 145 (about).

*Temperature in April.*

| | 1894. | 1893. | 1892. |
|---|---|---|---|
| Mean | + 2 | +21 | +27 |
| Maximum | +20 | +42 | +42 |
| Minimum | —10 | — 6 | — 2 |

## DRIFT WOOD.

As an experiment, we chose to burn driftwood this winter. For fuel and building purposes, we have used 2 oomeak loads, 2 whole boat loads, 6 scow loads, 64 dog-sled loads, and 126 deer-sled loads. In future years it will be more economical and philanthropical for the station every summer to pay needy Eskimos $100 worth of flour, cloth, and ammunition for bringing drift wood to us in their canoes, than to pay Arctic prices for coal. There is an abundance of driftwood 6 or 8 miles from the station.

## TRADE.

We have found it necessary to purchase large quantities of seal skins, boots, deerskins, thongs, deer thread, dried fish, walrus oil, etc., to supply the wants of our herders. For all these, the natives were glad to

receive in exchange drilling, flour, ammunition, etc. We found it necessary at different times in the year to send sealing parties out to the coast to hunt for the station. In October and November some of our men netted and shot 44 seals; in February, 21, and in May and June, more than 50.

### AMUSEMENTS.

The Eskimos have not been without their amusements. This year the natives of the village built a large kosge (dance house) and feasted and danced half of November and all of December. Two years ago the aristocracy of Cape Prince of Wales had been invited to attend a feast and dance here. These natives, however, were unable to catch enough fish to entertain their distinguished visitors, so the dance was postponed until this year. On Christmas day fourteen sleds arrived here from Cape Prince of Wales, bringing walrus meat, whale blubber, deerskins, wolverine and wolf skins as presents to their hosts, and in return a grand masked dance was given in their honor, and red fox, beaver, otter, and other pelts were presented to the guests.

We gave our herders a "taffy pulling" on Thanksgiving night, and tried to entertain them with a Christmas tree and Santa Claus on Christmas night. If they were delighted, surprised, or gladdened, their faces did not reveal it.

### SCHOOL.

School opened September 20 and closed April 27. The attendance has necessarily been small. Many of the children have not sufficient skin clothing to go out of their homes on very cold days. Those who are clothed properly have to spend most of their time catching frost fish through the ice. The opening of the new dance house, the first one they have ever had here, kept many children away from school in November and December.

In January the frost fish failed them. Their dried fish being all gone, most of the people had to move out to the seacoast to seal, or down to Grantly Harbor where fish were plentiful. After the herders went to camp (January 6) there were no natives here for school until they returned on March 27. Commencing with April, a school was conducted almost exclusively for the herders, in which special attention was given to English terms and words used in connection with the deer, physiology, and hygiene. The enrollment was 69.

### DISTRIBUTION.

The United States can surely afford to be magnanimous with the first Alaskan herders who, after learning how to manage and care for reindeer, start independent herds. Nothing should be given them outright to make them lose their self-respect; but by helping them in the manner indicated in the following general suggestions, we believe that in

MORAVIAN MISSION, CARMEL, ALASKA.

five or six years they will be considered as rich and independent deer men, men of as much wealth and influence as the walrus or whale hunters.

When a few rich deer men, Oomaliks, have been distributed along the coast, we think the training of new herders will take care of itself.

GENERAL SUGGESTIONS.

(1) Pay the Alaskan for his first year's apprenticeship at least five deer and for the second year at least ten deer.

(2) When five or six of these Alaskans are considered capable of managing a herd, loan them, to put with their own, at least one hundred deer, which are to be paid back to the Government at the expiration of five years.

(3) If they desire some flour, cloth, and ammunition with which to puchase their food and clothing, so as to enable them to get along the first year without killing any of their deer, let the Government loan them $100 worth of such supplies, which is to be paid back in live deer at a price fixed at least $2 in advance of the average cost in Siberia.

(4) In order to teach these people the true value of reindeer the Government should offer to purchase, during the next ten years, all the surplus deer which the Alaskans can raise, at a price fixed from $2 to $4 in advance of the average price paid for them in Siberia.

(5) A superintendent should be appointed who is willing to stay here at least five years. He should be a man of physical activity sufficient to enable him to travel up and down the coast, visit new herds from time to time, and keep the work progressing all along the line. If possible to find such a man he should be a deer man himself or have an expert deer man to travel with him. A teacher and physician should be appointed to remain at the station who could, besides their professional duties, take charge of the Government stores, keep the accounts, etc., so that the superintendent should have all his time for field work.

We are under many obligations to Captain Healy, Mrs. Healy, the officers and men of the U. S. S. *Bear*, for many kindnesses extended us and for much aid and assistance given us in order to make our new home comfortable and our year's work a success.

Very truly,

W. THOS. LOPP, *Superintendent.*

SHELDON JACKSON, D. D.,
*General Agent of Education in Alaska,*
*Washington, D. C.*

---

STEAMSHIP VESTERAALEN, *March 7, 1894.*

DEAR SIR: I am very glad to say that my journey has been a great success so far. This is my fourteenth day of travel from New York, and to-morrow I shall arrive at Hammerfest, breaking all records ever made between those points. The weather has been very fine.

When in Bergen, Norway, I called on the United States Consul, Mr. Gade, and he kindly assisted me with advice as to the fastest route northward. Knowing that I could not get my money in Drontheim as I would pass there on Sunday, I telegraphed to the United States Agent Bery, asking him to meet me on board the ship on my arrival, and there I handed him my check to exchange, and requested him to send some money after me. I also asked him about transporting the dogs over the various lines.

I can not tell now when I shall be ready to start southward again. The people here think that it is a very good idea to take the Lapps and reindeer to Alaska, and they are surprised to learn that any one is willing to spend so much money in giving it a trial. When I get to Alten I shall write a few words as to how the Lapps themselves regard it.

Very respectfully,

W. A. KJELLMANN.

Dr. SHELDON JACKSON,
*Washington, D. C.*

---

HAMMERFEST, NORWAY, *March 9, 1894.*

DEAR SIR: I arrived here yesterday morning (twenty-four hours later than was expected, but still breaking all former records) to find that the firm Feddersen & Nissen here, to whom I telegraphed from New York, have done the necessary advertising in Lapland, and I think that with their assistance my mission can be pushed through without delay. Yesterday I was called up to the city mayor, who is also the representative of the Norwegian Government at this place. He asked me what the Lapps were wanted for, their salary and the terms of their return. I told him the whole plan and he was satisfied.

The weather here is very cold, 20° below zero. No more to report this time.

I am, very respectfully,

W. A. KJELLMANN.

Dr. SHELDON JACKSON,
*Washington, D. C.*

---

CONSULATE, BERGEN, NORWAY, *March 28, 1894.*

SHELDON JACKSON,
*Bureau of Education, Washington, D. C.:*

Laplanders ask guarantee for salary. Telegraph consulate, Bergen.

WM. A. KJELLMANN.

---

BUREAU OF EDUCATION,
*Washington, D. C., March 29, 1894.*

UNITED STATES CONSUL,
*Bergen, Norway:*

Sheldon Jackson, Government agent, Alaska, guarantees salary of Lapp families hired by Kjellmann.

LOVICK PIERCE,
*Acting Commissioner of Education.*

---

CONSULATE, BERGEN, NORWAY, *April 6, 1894.*

LOVICK PIERCE,
*Acting Commissioner Education, Washington, D. C.:*

Lapp families hired by Kjellmann not satisfied agent Jackson's guarantee. Require such direct from United States Government. Cable answer.

CONSULATE.

SCHOOLHOUSE, FORT WRANGELL, ALASKA.

SWEDISH LEGATION,
*Washington, D. C., April 6, 1894.*

UNITED STATES CONSUL,
*Bergen, Norway:*

Tell Lapps that Jackson is so high a Government official that his guarantee is identical with that of Government.

J. A. W. GRIPP,
*Envoy Extraordinary.*

---

BUREAU OF EDUCATION,
*Washington, D. C., April 9, 1894.*

UNITED STATES CONSUL,
*Bergen, Norway:*

Cable how many Lapps Kjellmann has secured.

W. T. HARRIS,
*Commissioner of Education.*

---

CONSULATE, BERGEN, NORWAY, *April 10, 1894.*

Education Commissioner HARRIS:

Five families.

CONSUL.

---

HAMMERFEST, NORWAY, *March 30, 1894.*

DEAR SIR: Dr. Sheldon Jackson's letter of February 24 came to hand a few days ago, and, as I think that by this time Dr. Jackson must be on his way to Alaska, I write to you.

I have just returned from the mountains and have been lucky enough to procure five families and one single man for the Lapp colony, but it was a terrible job to get them. I was working at them for ten days before I could get the first one. The Lapps were very much afraid of the Eskimo; they thought that the Eskimo would kill them; they were afraid of the hard winter in Alaska, and they were also afraid that the Government would not treat them rightly. At last I got them to sign a contract for three years if they could get any guarantee for their salary; therefore I telegraphed to Dr. Jackson. The Lapps agreed to meet at this seaport on April 13; they could not be ready before. It will give me a very short time at home in Madison, but I could not do better.

I shall need some money on landing in New York, because I had to pay the Lapps one month's wages in advance. By next mail I shall let you know how much money I need, and also send a list of the colony.

Respectfully, yours,

W. A. KJELLMANN.

Winter is terribly hard up here. Snowstorms every day. The snowdrifts are 25 feet deep.

Mr. WILLIAM HAMILTON,
*Bureau of Education, Washington, D. C.*

---

TALVIK, NORWAY, *April 2, 1894.*

DEAR SIR: Your favor of February 28 is received to-day, from which I see that the Roman Catholics want one family. I do not think that I can get any family, because there is only one Roman Catholic boy among the Lapps. He is about 16 years old. To-night I shall go back to Alten and try to hire him.

Very respectfully,

W. A. KJELLMANN.

Dr. SHELDON JACKSON,
*Bureau of Education, Washington, D. C.*

TAPPELUFT, NORWAY, *April 9, 1894.*

DEAR SIR: The five families of Lapps that I have hired are Per Aslaksen Rist and wife with two daughters, 10 and 8 years; Johan Speinsen Tornensis and wife with one child under 1 year; Mikkel Josefsen Nakkila and wife; Samuel Johnsen Kemi and wife with two children, 4 and 1 year; Mathis Aslaksen Eira and wife with one child, 4 years; Fredrik Larsen, single, 18 years.

Every family is to have a pair of dogs, and the single boy has a dog that I bought for him.

I leave here on the 14th instant, and leave Christiania for New York on the 26th by the steamer *Island* of the Thingvalla Line, and shall probably arrive at New York about the 8th or 9th of May.

Very respectfully,

W. A. KJELLMANN.

Mr. WILLIAM HAMILTON,
*Bureau of Education, Washington, D. C.*

---

MADISON, WIS., *May 16, 1894.*

DEAR SIR: I had no time to write you from New York or Chicago, as the time was almost too short to make the necessary arrangements for transportation.

On the 10th of April I started the colony from Kautokeino and came down to the seaport of Bosekop. On the 13th and 14th we packed the baggage and on the 15th we went on board the first steamer, which took us to the city of Hammerfest, the northernmost city on the earth. From Hammerfest we went to Drontheim, where we arrived on the 20th. On the 23d we left Drontheim by rail for Christiania, where we arrived at 7.15 on the 24th. At noon on the 26th we were all on board the *Island*, which ship was to take us to New York.

We arrived at New York on the 12th of this month, and on the evening of the same day we left for this city, via Buffalo and Chicago, and arrived here at 11.15 on Monday evening, the 15th.

In Christiania I was kindly assisted by Capt. Magnus Anderson, the commander of the *Viking*, and by the United States consul, so everything went on nicely. Two of my dogs were then sick, but got better after a few days. On the 10th of May one of them took sick again and died before night. Another was also seriously sick at that time, but it is still alive.

Captain Skjödt, commander of the *Island*, kindly did his best for all of us. There was very little sickness among the Lapps during the voyage. I will write you before I leave here on Monday, the 21st. To-day I am very tired and have much to do.

I am, very respectfully, yours,

W. A. KJELLMANN.

Mr. WILLIAM HAMILTON,
*Bureau of Education, Washington, D. C.*

---

BANK OF MINNESOTA BUILDING,
*St. Paul, Minn., May 22, 1894.*

DEAR SIR: The care of the party of Lapps and the dogs takes my entire time, so that I do not know when to do the necessary writing. I must do everything myself, as the Lapps can do nothing in the way of caring for themselves in this country. I must even look out for losing them at the station, as the people crowd around them and hang on to them. This is why you have not had this letter before. We will leave here at 7 o'clock to-night. We have a very pleasant car on the Great Northern and I am very well satisfied with it.

SLED UNDER SAIL, POINT BARROW, ALASKA.

To-day I am keeping the Lapps in the car down at the yard. I myself have to hide somewhere to write this and other letters. At the top of the page you will see where I am hiding.

Will try to send you word from some station farther on.

Respectfully, yours,

W. A. KJELLMANN.

Mr. WILLIAM HAMILTON,
*Bureau of Education, Washington, D. C.*

---

HORSE PLAINS, MONT., *May 29, 1894.*

DEAR SIR: As stated in my last letter from St. Paul, we left there on the 22d and all went well until Kalispel, Mont., where we were delayed by a washout which kept us there for thirty-six hours. On the 26th we were returned to Havre, and from Havre we were sent to Helena, where we arrived at 6 p. m. on the 26th. There we remained until yesterday. Then we were transferred from the special car, that should have taken us through to Seattle, to the Northern Pacific Railway. Now we are delayed here by a washout on this road too, and no one can tell when we will get through. The steamer we were to have taken from Seattle has gone, and if we get to Seattle we shall have to wait until Monday, June 4.

I am nearly out of money. We lost one more of the dogs going through North Dakota, and a third one was very sick, but is better now. I use ice for them every day, but still it is too hot for them. The Lapps are all well. The minister also. If anything happens I shall telegraph you.

Very respectfully, yours,

W. A. KJELLMANN.

Mr. WILLIAM HAMILTON,
*Bureau of Education, Washington, D. C.*

---

U. S. REVENUE CUTTER BEAR, *July 27, 1894.*

SIR: In the introduction of reindeer into Alaska, the United States Bureau of Education greatly desires the cooperation and assistance of the missionaries of all the churches in Alaska. The missionaries being the most intelligent and disinterested friends of the natives, the Government naturally looks to them as the best agents through whom to reach the native population.

From their position and work, having learned the character and needs of the people, they are able to most wisely plan and carry out methods for transferring the ownership of the deer from the Government to the natives in such a manner as will best facilitate the reindeer industry. The Government further realizes the fact that the men who most completely come under mission influence, civilization, and education are the coming men of affairs among their own people, and therefore are the best men to lead in a new movement.

As the wide and general distribution of the reindeer will both save from extinction the people, among whom the missionaries work, and place them upon a plane of independent self-support, they have a direct and personal interest with the Government in this work.

To secure this cooperation of the missionaries, the United States Bureau of Education proposes from time to time to furnish herds of reindeer to all the mission stations of northwestern and central Alaska, that through them more natives may be trained to care for the deer, and when so trained, receive the loan of a sufficient number to commence a private herd.

As a beginning in this direction, it affords me much pleasure to turn over to you, as the representative of the American Missionary Association Mission at Cape Prince of Wales, Alaska, 100 head of reindeer, with the single condition that upon the 1st

of July, each year, you or your successor in office make out an annual report of the progress of the herd, giving the numbers born, dying, or killed; the number and character of the herders and apprentices; what steps are being taken and with what success to get your people to take them up; the condition of private herds, if any, among your people; what experiments you have made toward improved methods of harnessing, milking, and handling the deer, together with the results of the same, and such other information as may seem to you of general interest.

This annual report will be mailed to the "General Agent of Education in Alaska, United States Bureau of Education, Washington, D. C."

Wishing you great success, I remain,

Yours truly,

SHELDON JACKSON,
*General Agent, etc.*

Mr. W. T. LOPP,
*Superintendent of the American Missionary Association Mission,*
*Cape Prince of Wales, Alaska.*

---

TELLER REINDEER STATION,
*Port Clarence, September 3, 1894.*

SIR: In accordance with your instructions to erect a schoolhouse from logs, a crew of eight men were sent up the lagoon west of the station after drift logs. After being away four days they returned without logs and reported that it was impossible to get them, as the lagoon could not be used for rafting because the timber lay on the outside of the sand bank between the lagoon and sea; that the bank was too wide for the logs to be carried across, and that they could not take them on the outside on account of the surf. All this was thought to be nothing else than the result of not having a white man along to boss the work, and as there is no assistant at the station that can be sent out, I went myself with a crew of six men and got 100 logs. The station was, meanwhile, left in Mr. Brevig's care. As school was to begin on the 1st of September, it was impossible to build a schoolhouse and have it ready in time. We therefore fixed up the center room or hall in the main building for school, which began to-day.

In the past two weeks the Laplanders have milked about 50 cows of the herd every day, but as the deer have not been used to it and are very wild, we will have to stop milking for a few days, as a number of the deer already have sore teats. We will continue as soon as the deer are all right again. A week ago to-day four men were sent up to the lakes fishing, and one Laplander went along exploring. They have not returned yet. If winter sets in soon as expected we will be in a bad fix, as we have no place ready for the herders. Last winter they were kept in the back building or lean-to, but as you know the lean-to now is used as storehouse and kitchen for Mr. Brevig and a trading room, we will have no place to keep the herders. I will put all hands to work on a log house for the herders, only leaving six men with the herd. I hope we will get it ready in about three weeks, and if it should be necessary the school can be kept where it is the first part of the winter.

Yours, respectfully,

WM. A. KJELLMANN.

DR. SHELDON JACKSON,
*Revenue Steamer Bear.*

---

TELLER REINDEER STATION,
*Port Clarence, September 5, 1894.*

DEAR SIR: I herewith send you one box containing reindeer moss and grass, properly labeled, and one can of reindeer cheese made at the station. I do not know whether the cheese will keep canned up that way. In Lapland it is always dried and brought to the market in that state.

The Laplanders who went into Grantley Harbor and up to the lakes exploring returned after staying away six days. They reported that good winter pasturage was found, and also a splendid place where the herd could be kept in spring when calving. Moss and grass were found everywhere and are more plentiful than they ever had seen before. If we get time before winter sets in, a dugout will be erected at the east end of Grantley Harbor for winter camp. The herd is now kept about 4 miles east of the station, where the herders are in camp. Their spare time is this week spent in cutting grass for padding in boots during winter. I think the reason why the Eskimos wear out their footwear so quickly is because they use no padding and do not tan their leather with bark.

It is very wise not to send small herds to other places before the main herd counts at least 1,500 or 2,000, for the reason that if it should happen that the Siberian deer men should refuse to sell more deer, you would, by taking good care of it, have sufficient number to distribute about 500 deer a year from the increase without reducing the efficiency of the central herd, and thus the whole of arctic Alaska could be supplied with deer.

Deer will increase faster when in a large herd than in a small one, as a larger number of the fawns can be saved among many deer than among a few. Again, my experience is that it is not wise to let an apprentice start a herd for himself after being only two years at the station. To learn to be a good herder or deer man takes as much time as to learn any other trade. It is not only to learn how to throw a lasso, how to drive or keep good watch while with the herd; but the main part of it is to know how to take care of the fawns so the herd can increase, to select a good sheltered place to keep the herd when the fawns are born, to know how to make use of every particle of the deer so that nothing is thrown away, and to learn to think and act quickly in an emergency, and stand any hardship when necessary to save the herd. All this may be looked at by outsiders as soon learned, but it is not so. It is only acquired by attention and long practice.

Here I will say that in Lapland as a rule a man is not trusted with the charge of a herd before he has been at least five years among deer and deer men, and even then many are not trusted. Many never become able to take care of a herd on account of carelessness or other reasons. There are differences among herders as well as among other people. Some take more interest in their work than others, therefore no rules can be set about the time needed. From what I have observed during my short stay here, I can say that we have some apprentices that will never be good deer men, and others again that will be splendid. The former are too slow, and after trying them another month or two with the same result, they will be sent off and others given their places.

As I have been so pressed with the work around the station in order to be ready to meet the winter, I have had little time to study the boys, but from what I have already seen I can say the above.

We have started a log house 16 by 30 feet for the herders; two of the Laplanders, two Eskimos, my father, and myself are working at it. A crew of seven men are up the lagoon after more logs, and as soon as the herders' house is finished we will start on a schoolhouse, but I do not know what we shall have for floor and roof boards as we have not any boards at all. We will probably have to make boards of drift logs.

Very respectfully,

WM. A. KJELLMANN,
*Superintendent.*

Dr. SHELDON JACKSON,
*United States General Agent of Education in Alaska.*

TELLER REINDEER STATION, ALASKA,
*September 5, 1894.*

On this 5th day of September, 1894, we, the undersigned, Sheldon Jackson, for and in behalf of the United States Bureau of Education, party of the first part, and An te si look for and in behalf of himself and I zik sic, Kok to wak, I up puk and Soo va wha sie, parties of the second part, do hereby agree and covenant that the party of the first part will loan the parties of the second part 100 head of reindeer for a period of five years from January 1, 1895.

In consideration of such loan, the parties of the second part at the expiration of five years (December 31, 1900) will return to the Government 100 head of reindeer of which at least 75 shall be females.

The parties of the second part further agree that the herd shall at all times be open to Government inspection and control, and no bearing female shall be killed (except in case of accident) during the continuance of the loan.

The Government reserves the right to reclaim 100 deer at any time previous to the expiration of the loan, provided it shall appear to the superintendent of the Government herd that this herd is in danger of being lost through neglect or mismanagement.

[SEAL.] SHELDON JACKSON, *party of first part.*
[SEAL.] AN TE SI LOOK, *party of second part.*
Witness:
T. L. BREVIG.

---

UNITED STATES.

DEPARTMENT L.—LIBERAL ARTS.

*Exhibitor.*—Sheldon Jackson, general agent; address, Washington, D. C. Education in Alaska.

[GROUP 149. CLASS 853.]

*Exhibit.*—Publications, photographs, and school work.

AWARD.

A collection showing, first, the condition of the people in the extreme need of education; second, the plan of the organization of public and private schools for the Territory, extending to the most remote inhabitants of the Arctic regions; third, schoolhouses and residences of the teachers; fourth, photographic views of pupils showing their dress and habits; fifth, specimens of pupils' work showing excellent merit; sixth, documents and photographs, wearing apparel and other articles of use illustrative of the prolonged but successful effort to introduce reindeer from Siberia and instruct the natives in their care and use as a source of food and clothing and a means of transportation by which it is hoped to save the people from the starvation awaiting them as a result of the wasteful destruction of fish and game since the introduction of firearms—a destruction so rapid that it has already swept villages from the face of the earth.

JOHN EATON,
*Individual Judge.*

Approved:

K. BUENZ,
*President Departmental Committee.*

Approved:

JOHN BOYD THACHER,
*Chairman Executive Committee on Awards.*

JUNE 27, 1894

Hunting Ducks with Native Sling (Eskimo Drawing)

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF BOTANY,
*Washington, D. C., December 14, 1894.*

DEAR SIR: The two packages recently received from you, one a lot of dried specimens collected by Dr. White, the other a package of native reindeer food of Alaska, were received yesterday. The collection of Dr. White will require a considerable time to examine, as a large number of species are represented in it. The package of reindeer food, however, consists principally of reindeer moss (Cladonia rangiferina), an unidentifiable sedge of the genus Carex, and branches of two species of willow. The box contains also fragments of a cotton grass, Eriophorum, and of two other grasses without common names belonging to the genera Poa and Arctagrostis, besides a few fragments of a club moss, Lycopodium, and some of the true mosses.

If this material is of value to you, I will have it returned to your office if you will kindly notify me by telephone.

Yours, very sincerely,

FREDERICK V. COVILLE,
*Botanist.*

DR. SHELDON JACKSON,
*Bureau of Education, Washington, D. C.*

## REINDEER, CERVUS TARANDUS. RANGIFER TARANDUS, GREENLANDICUS—BARREN GROUND CARIBOU. R. T. CARIBOU—WOODLAND CARIBOU.

By Charles Hallock, M. A., M. B. S.,

*Ex-editor of Forest and Stream; author of "Our New Alaska," "The Sportsman Gazetteer," and other standard works on Natural History and Field Sports; member of the Biological Society of Washington.*

---

Reindeer (*Cervus tarandus*) are not only boreal but circumpolar animals, occupying a habitat in common with the ice bear, musk ox, arctic hare, lemming, snowy owl, ptarmigan, Eskimo dog, and arctic fox. Though comparatively little known, popularly or scientifically, outside of their frozen domain, they are the most widely distributed mammal on the globe, inhabiting portions of Greenland and Labrador, the margin of Smith Sound,* both sides of Hudson Strait,† the entire breadth of British America east and west of the Rockies, parts of Alaska, Siberia, Spitzbergen, Nova Zembla, Finland, Lapland, Norland, and the northern half of Russia and Scandinavia. Their range belts the entire Arctic Circle without a break, and extends from the northernmost limit of polar exploration southward to latitude 52° (longitude 140° west), where the reindeer meets the Bengal tiger in the jungles of the Amoor River, in Asia. In North America it drops to latitude 55° on Eskimo Bay, in eastern Labrador; to latitude 59° at Fort Churchill, on the west side of Hudson Bay; to latitude 55° in the Peace River country, and touches latitude 54° on the Aleutian peninsula, in Alaska. In middle Russia the limit is about latitude 55°, while in Norway it would not be below latitude 65°, owing to the proximity of the Gulf Stream, which renders the climate too mild for them, as well as for the growth of its favorite food, the reindeer moss. In the Glacial period this succulent lichen (*Cladonis rangiferina*) grew much farther south, of course, and the range was proportionately extended, remains of this animal having been found in the middle United States and in Italy, according to Prof. Theo. Gill. Reindeer can not be acclimated in regions where the conditions are unfavorable. Experiments in various countries have proved this.

Closely allied with the arctic reindeer is the forest variety, known in America as the woodland caribou, whose conterminous range enlarges the foregoing area by a belt several degrees in width in a southerly direction, which includes Newfoundland, New Brunswick, Nova Scotia, the Lake Superior region, and extends almost unbroken across the continent, dropping even below the forty-ninth parallel in Minnesota. This variety is also found in the forests of northern Montana, Idaho, Oregon, and Washington. Both species are gregarious and migratory, moving north

---

* Hall, the Arctic explorer (1861), speaks of a dog on Smith Sound taking a reindeer by the throat and cutting its jugular.

† According to Tuttle, of the Canadian Dominion Survey (1884), the north side of Hudson Strait is a waste of alternate rock ridges and boggy ravines. Captain Spicer, a retired whaler from Connecticut, was found 30 miles from North Bluff, in latitude 63°, longitude 70°, operating a trading post to the tune of $25,000 worth of furs per year. Reindeer and white hares were abundant in the vicinity.

GAME NELAKATAH AHOWACHICHEA, POINT BARROW.

and south with the annually recurring seasons, often in large herds, and both are of especial economic value in their respective localities, affording a variety of subsistence to the carnivorous fauna which are associated with them, as well as to large nomadic and constant human populations which occupy the illimitable wastes of the subarctic zone and the territories contiguous to them. Both are likewise susceptible of domestication, though the boreal variety is by far the most tractable, and with it this paper has chiefly to do, more especially by reason of present efforts to domiciliate it in Alaska. And in connection with this endeavor, and the urgent economic necessity which has prompted it, the breeds of Siberia and Lapland become of special interest, the former because that country is so immediately adjacent and available as a source of supply for stocking our ranges, and the latter because of the higher civilization of the people and the superlative domesticity of their animals, feral instincts being much stronger with the Siberian reindeer. Reference might also be made to the reindeer of British America, already an important factor in the hyperborean economy of that country, and likely to become still more so should the Alaska experiment prove signally successful. Fortunately, we are in possession of all needful data through the painstaking researches of Bush, Vincent, and Ogilvie, who have made the reindeer of Siberia, Lapland, and the northwest territory respectively an incisive study during long periods of residence.

Zoologists have not been quick to discover the exact affinity between the reindeer of the Old World and its North American prototype, the barren ground caribou, so called, while the difficulties in reconciling the latter with its more southern congener, the woodland caribou, have proved even greater. But the sum and conclusion of the whole matter, so happily determined of late by a thorough comparative study of all the various groups which occupy the boreal belt and contiguous regions, would be to make the three several forms specifically identical, with no structural differences between them, except such as would naturally result from difference of climate, food, and environment.

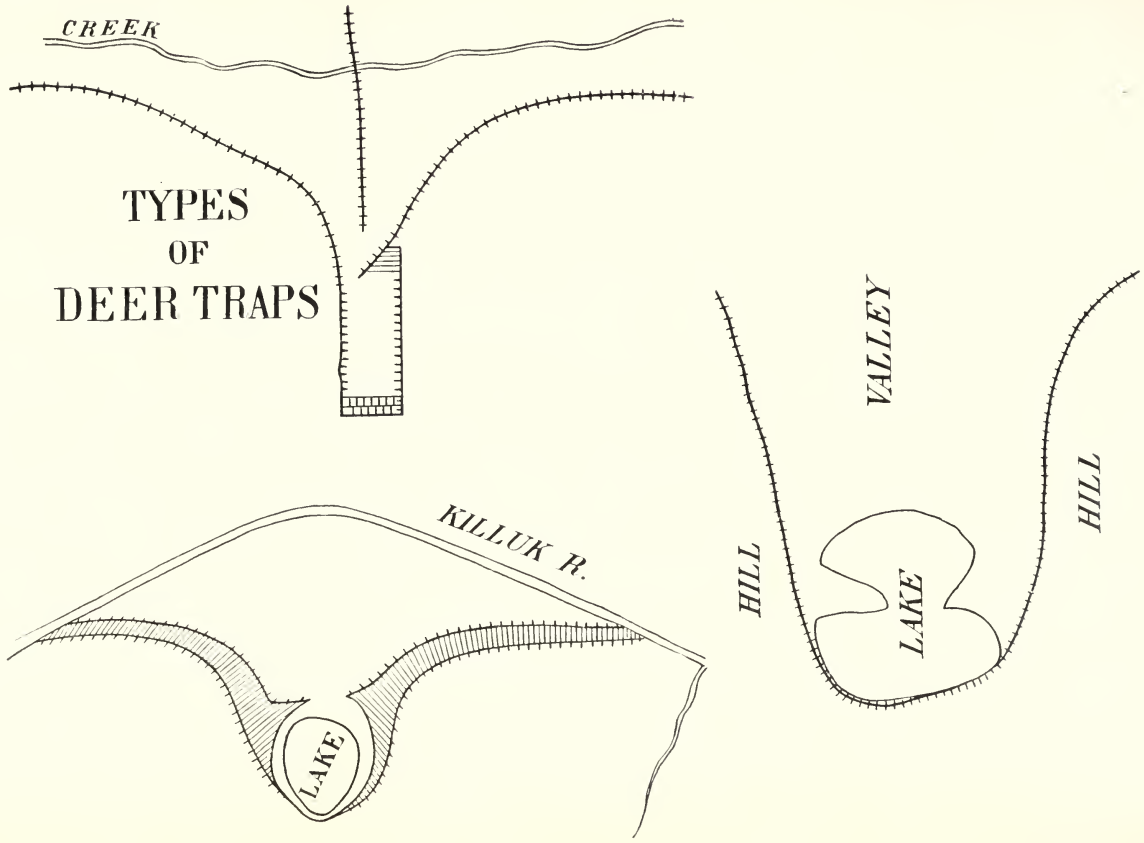
We find that throughout all its known habitat there are plains reindeer and forest reindeer, just as there are plains and woods bison, the former occupying the vast moss-bearing tundra which blanket the circumpolar world, and the latter ranging through conterminous regions lying farther south; the warmer habitat, with its more abundant provender, producing the larger but less hardy animal. In parts of Lapland and northern Scandinavia, where there are no expansive levels like the moss-bearing tundra of Siberia, Alaska, and subarctic British America, that variety recognized as the plains reindeer is obliged to seek its favorite food on the mountains above the forest belts, and so are locally known as "mountain reindeer." But, taxonomically, there are but two forms the world over, specialized in scientific nomenclature as *Tarandus rangifer groenlandicus* and *T. rangifer caribou*, of the genus Cervus, the one designating the arctic variety, or barren-ground caribou, and the other the southern variety, or woodland caribou. The latter are much more widely distributed in America than in Europe or Asia, and as the word reindeer has but recently been adopted in this country, with the coming of the domesticated herds from eastern Siberia, and the name caribou is absolutely unknown abroad, it would seem that specification would be simplified, if not bettered, by designating the boreal moss scraper as reindeer and the southern woods ranger as caribou.

The chief differences mentioned by writers who have discussed the problem are the smaller size of the northern form and its proportionally larger horns, the average weight of the first being not more than 175 pounds the world over, while the latter would reach 300 pounds, and sometimes attain 400 pounds, and even more. The livers, gall bladders, and metatarsal glands have also entered into the problem of differentiation. There are certainly marked variations in coloration as well as in the selection of food, the one species subsisting chiefly on ground mosses, to which the other adds a diet of tree moss, grass, and browse when available. Quoting eminent Newfoundland authority, the color of the woodland caribou ranges from wood brown in early summer to nearly white in winter. The mane above the neck is

nearly white at all seasons, and the legs are always much darker than the body color. The young are mottled on the sides for the first months after birth, and some adults have been seen so marked, which presumably points to a spotted ancestor, and with unequivocal certainty to close kinship with his boreal relation.

Dismissing this cousin german altogether, and bespeaking exclusive attention to the reindeer proper, we discover that in eastern British America he, too, is brown in summer, brown and white in fall, and white in winter. The coat is extremely thick, with a soft felt pile at base, which bristles with long hairs, and is calculated in every way to resist cold. He is not as tall as the red deer, but heavier. Stags in their prime, from 6 to 10 years old, weigh 400 pounds. Hinds are about the size of a red deer stag; legs shorter, feet broader, ears shorter and more rounded, nostrils larger, with sense of smell very acute. They can detect the presence of moss simply by putting their noses to the snow, even when it is 6 feet deep. The sexes are variously distinguished as bulls and cows, bucks and does, and stags and hinds. At seasons when the horns are short and the animals are engaged in grazing, they resemble cows more than deer. When fully grown the antlers are immense, palmated, and sweeping backward; are cast in November and get full growth again by the first of September following. During that month, which is the raking or rutting season, they get much battered and broken by fights, especially the brow antlers, which are provided chiefly for offense, though sometimes, but not often, used to shovel off snow from buried food. In feeding they draw away the snow with the nose, which is covered with a hard skin for that purpose. Crown antlers, spreading widely, when thrown back protect the body while passing through dense brush. Brow antlers meet over the nose like two hands placed palms together, with fingers straight out. Females generally carry horns, but not always. Their horns are much more symmetrical than their consorts', and not one-third the size—palmated, too, except that in yearlings they are slender and straight. Antlers sometimes measure 5 feet around the curve. Females at the age of 2 years drop their young in May. When the young are born they shed their horns. The flesh of the reindeer in August and September is most delicious, and has often 3 or 4 inches of fat on it. East of Hudson Bay to Ungava, Labrador, on the divide between Fort George River and Ungava River, is a treeless, rocky ridge, with moss and furze, which harbors numberless reindeer. This ridge separates the Montaignais Indians from the Eskimos, and was once disputed ground between the latter and the Red Indians, a tribe now extinct. When approached up wind the deer are readily stalked. Eskimos often call or toll them within 10 to 50 yards.

The Canadian tundra plains west of Hudson Bay and east of the Mackenzie River, especially that portion which lies between the Arctic Ocean and Great Slave and Athabasca lakes, is the reindeer country par excellence. Great numbers of musk oxen also roam there, and their skins find their way to the Hudson Bay Company's posts by hundreds. This region comprises an area of 60,000 square miles. On their migrations the deer move in vast herds, passing north to the arctic waste in the spring, and returning south to the wooded country in the fall. The Indians hunt them in the summer. Their winter coat of long hair is shed early in July, and by the end of August the hide is in excellent condition, the hair soft and not too long. Later in the year it becomes harder and more brittle, and the hide is apt to be riddled with holes made by the larvæ of a bot-fly. Horns are very large and irregular, very few being alike. Indians resort to lakes and streams where the animals cross, and spear them while in the water, often killing several hundred at a battue. They cure the meat and utilize every part of the carcass for tent covers, clothing, sled frames, utensils, etc. On the Peace River and its tributaries, between the Mackenzie and the Rockies, Dominion Surveyor Ogilvie, in his official report, says that for days together his party was never out of sight of caribou. He puts the average weight of the female (dressed) at 60 to 80 pounds; bucks 150 to 200 pounds, occasionally. Their range comprises alternations of bare rock with mossy intervals, interspersed with lakes of one-half mile to 15 miles long.




TYPES OF DEER TRAPS, ARCTIC ALASKA.

WHALE ON THE ICE, POINT BARROW, ALASKA.

Much of the country west of the Rockies, including almost the entire region north of the Yukon River in Alaska, is typical reindeer ground. Northeastern Alaska fairly swarms with the animals, which winter in vast herds on the plateaus lying north of Forty Mile River, in the neighborhood of the boundary line, according to the observations of Surveyor Ogilvie. Dr. Solmatha spoke in his report of their crossing places on the upper Yukon and the immense size of the herds which passed. Ogilvie says: "Two kinds of caribou are found between the Yukon and the Mackenzie, one of the ordinary kind, said to much resemble the reindeer [note the confusion in the old backwoodman's mind], and the other called the wood caribou, a much larger and more beautiful animal, though its antlers are smaller."

The ordinary caribou run in herds, he notices, often numbering hundreds, are easily approached, and when fired at with guns are so disconcerted that they often run toward the hunter. Not until many have been killed do they take flight. Then they start on a continuous run and do not stop for 20 or 30 miles. When the Indians find a herd they surround it, gradually contracting the circle; when the animals being too timid to break through are slaughtered wholesale. They also build fence traps with flanking wings, leading to deep snow pits, into which the deer are driven and dispatched. At La Pierre's House, a trading post in latitude 67° 24′, 2,000 deer tongues were brought in by the Indians in one year. These people build their lodges after the exact patterns of the Tungusi tribe in eastern Siberia, and dress in the same way. A great many woodland caribou are killed in the forests in February and March. There is a high plateau at the head of Tat-on-duc River, in latitude 65° 43′, longitude 139° 43′, where the other kind is hunted; and there are numerous high mountains upon whose naked slopes the deer dig in the snow for moss, standing face up hill, pawing away the frosty covering and pulling it down toward them with their forefeet, thereby exposing patches of the succulent growth, which having cropped they proceed to draw the snow from above into the bared space, and so advance gradually to the crest of the slope. Some patches of ground which had been pawed over were found to extend for more than a mile in length by a quarter of a mile in breadth. The parasite pest is noticed here.

In northwestern Alaska the Eskimos have almost exterminated the reindeer from a belt 75 miles wide adjacent to the Arctic Ocean and Bering Sea, and the herds do not come up to the coast any more; so that the improvident and happy-go-lucky inhabitants have been constantly in a state of semistarvation for several years, and a great many have died. Herendeen, a polar traveler, in speaking of the annual winter hunts of the Eskimos, erstwhile in the vicinity of Point Barrow, mentions incidentally that the reindeer dig the moss out of the snow with their splay hoofs, which are admirably fitted for the purpose, though the nose undoubtedly does its part. The snow fall there will not average more than 18 inches for the winter, and the continuous high winds which prevail blow it off the tundra, so that a covering of only a few inches remains for the caribou to remove. The supply of moss is practically inexhaustible. It is this depopulated and desolate tract that the Government of the United States is making such commendable efforts to restock by importations from Siberia. Naturally, we are interested to obtain all possible information regarding the reindeer of that country across the strait, and fortunately the two years continuous residence there of Mr. Richard J. Bush, who was engaged in locating a route for a transcontinental telegraph line from Washington to St. Petersburg in 1866, has placed the world in possession of all attainable facts, so that very little of the life history and habits of this extraordinary animal, so indispensable to the inhabitants of that region, is left unknown.

In Siberia the majority of wild reindeer are represented to be white, and the rest brown with white bellies. The domestic reindeer range from white to dark brown, some being beautifully spotted. They are whitest about June 20, by which time they have shed their winter coats. The males stand about 5 feet high, and have pendent bells or tufts of thick hair under their throats. Their hoofs are immense and rattle when they walk. Both sexes have horns, the male horns sometimes

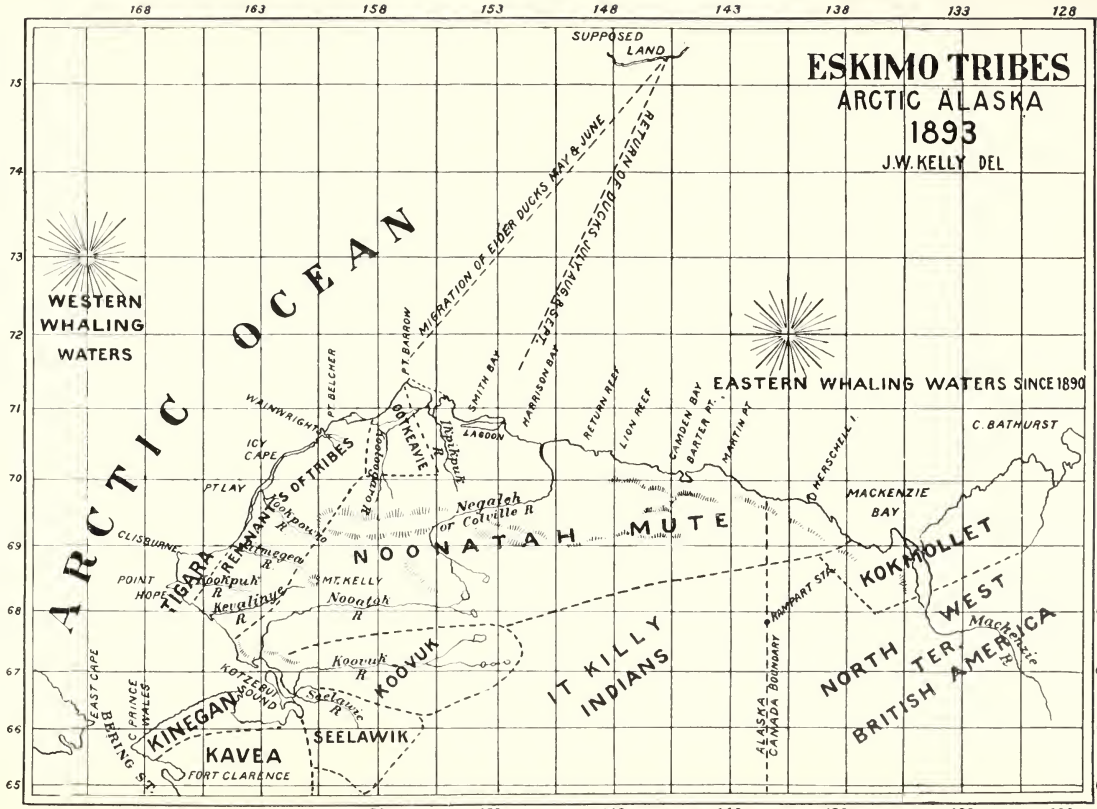
measuring 6 feet around the curve. They begin to shed their horns in February, and by the end of August they are in the velvet, with strips dangling from the prongs. By the end of October but few have antlers complete, most of the bucks having lost one or both horns by fighting. Females breed in May, varying somewhat according to latitude. In that month mosquitoes are very troublesome, as they are everywhere in subarctic regions, and the pestered deer flee to the tundras, where the wind blows constantly, in order to escape them.

Starvation is very common among the coast natives at the fag end of winter during the spring floods and the breaking up of the ice in the bays and rivers, by reason of improvidence in not laying up sufficient supplies of fish and meat for themselves and their sled dogs in the periodical seasons of plenty which come about every three years. No fish can be caught while the ice is running. Ducks fly with the deer to the far off tundra. Ptarmigan and willow grouse, which many a time have opportunely supplied an exhausted larder, are nesting. Winter stores were long since consumed, and only a few rabbits are found on the hummocks above the reach of the floods, which are anxiously approached in skiffs and knocked down with sticks. By June 12, however, the duck, geese, swan, and gull eggs are all ready to hatch, and the spring migration of deer takes place, which is a godsend to the famished people, who forthwith proceed to make camp at their crossings, where they build huts and watch for the deer, keeping very quiet, and taking care not to make a smoke, which alarms them. The banks are so high and steep that the animals have to select particular crossing places, and are there speared from skiffs while swimming. Sometimes slip nooses made of well greased seal-skin thongs are suspended over the paths which lead up the banks, and the deer are caught by the antlers. By these methods large numbers are killed. The meat is dried in the sun, though much of it becomes putrid.

This periodical destitution gives occasion for numerous acts of benevolence on the part of those who are better off, and the considerate Czar of Russia has already bestowed many medals upon kindly people who have assisted the starving settlers. Be it understood that there are two classes of inhabitants, namely, coast dwellers, who subsist chiefly on sea food, and wanderers, who chase the deer. Like conditions, somewhat modified, frequently obtain in Alaska, and also in Labrador and along the shores of Hudson Strait.

On the eastern coast of Siberia, where the Thutchus and Koriaks dwell, there are moss-covered hills to which the reindeer are driven in summer, to the number of perhaps 100,000, by their herders, being divided into bands for economy in feeding. Individual owners are known who possess 10,000 deer apiece, and are rich. In the autumn they are returned to the great plains of the interior. Very few ever come to the coast on the hoof. A large annual trade has long been maintained across Bering Strait, between East Cape in Siberia and Cape Prince of Wales in Alaska, as well as by another more northern route, furs and seal skins being exchanged for reindeer skins—already so scarce in Alaska that it is difficult to procure even material for necessary winter clothing. Through fear of destroying this market for their skins, the Siberians have declined until recently to sell live deer lest the Alaskans should come to provide for themselves by propagating from the stock. By fortuitous persuasion, this objection has been overcome sufficiently to procure an ample plant for the Government stations in Alaska, at the price of about $3 per head, live reindeer selling in Tamsk, on the Okhotsk Sea, at 2½ roubles, or about $1.87 of our money.

All the various tribes throughout Siberia have domesticated the reindeer, though dogs and horses are used conjointly by several of them for draft purposes. The deer are the most economical, because they can pick their feed, instead of having it packed for them. Supplies of fish which must be carried for dogs' food, materially reduce the amount of freight that can be transported. But dogs are claimed to be much the fastest travelers, and Mr. Bush mentions having done 1,200 miles with dogs, over a post road, in nineteen days. Between the deer and the dogs is a natural antip-


ESKIMO TRIBES
ARCTIC ALASKA
1893
J.W. KELLY DEL
ARCTIC OCEAN
WESTERN WHALING WATERS
EASTERN WHALING WATERS SINCE 1890
MIGRATION OF EIDER DUCKS MAY & JUNE
RETURN OF DUCKS JULY AUG & SEPT.
SUPPOSED LAND
WAINWRIGHT
PT. BELCHER
PT. BARROW
SMITH BAY
HARRISON BAY
ICY CAPE
PT LAY
COLVILLE R
IKPIKPUK R
LAGOON
RETURN REEF
LION REEF
CAMDEN BAY
BARTER PT.
MARTIN PT
TO HERSCHELL I.
C. BATHURST
MACKENZIE BAY
CLISBURNE
POINT HOPE
TIGARA
REMNANTS OF TRIBES
Kookpuk R
Kowalinega R
Kowalinega R
Kevalinga R
MT. KELLY
Noogalk R
Negaleh or Colville R
NOONATAH
MUTE
KOKMOLLET
Kobuk R
Noatak R
KOTZEBUE SOUND
Selawik R
KOOVUK
IT KILLY INDIANS
NORTH WEST TERRITORY BRITISH AMERICA
Mackenzie R
EAST CAPE
C. PRINCE OF WALES
BERING S.
KINEGAN
KAVEA
FORT CLARENCE
SEELAWIK
ALASKA CANADA BOUNDARY
POINT BARROW STA.
168
163
158
153
148
143
138
133
128
75
74
73
72
71
70
69
68
67
66
65

athy, which is stimulated by the chronic starvation of the latter, and Bush mentions several instances where dogs en train attacked and actually killed deer in harness before they could be beaten off by the drivers of both teams. Nevertheless, deer are by no means inoffensive or helpless, and are so aggressive at times that they tear their pack loads off with their antlers, or even gore their drivers, so that many are found with their horns chopped off. To perform this operation the buck is tricked up to a tree and the antlers are lashed firmly against the trunk, whereupon the horns are hacked off with a hatchet some 6 inches above the skull, leaving the palmated projection in front of the forehead to remain. Thus bereft they resemble cows more than ever.

Semidomesticated reindeer are shy and hard to capture when wanted, but they will follow a leader like sheep. Accordingly, the most tractable ones are first trained to be leaders, and accustomed to the presence of man. Subsequently they serve as efficient keepers to prevent the rest of the herd from wandering off, and thus materially lessen the care of the regular herders, though a night guard is always set to keep off wolves. They are also used as decoys in approaching deer and other animals—an aboriginal device in vogue the world over. Yet, quite a large percentage of domesticated deer are lost by their straying off to the wild herds, just as farm horses in some Western States are lost by their running with the mustangs. A great many of these runaways afterwards pay the penalty of their misdemeanor by being shot on the tundra, as they are less shy of man than their feral companions. Antipodal to this proneness to return to the wilderness, deer in camp will often charge on new arrivals, regarding them as interlopers. They are very fond of human urine, which contains salt, and this appetite is taken advantage of to catch runaways or loose animals which have to be lassoed every morning.

Runners are very little used in northern Siberia, except on post routes, freighters and travelers relying chiefly on the saddle and pack. When sleds are used, two deer are harnessed abreast, or tandem, and the driver uses a goad. Reindeer for transportation purposes are employed as far south as Orell Lake, in latitude 53°, adjacent to the west shore of Okhotsk Sea, though they are not numerous, owing to a scarcity of moss. A pack deer is worth 35 rubles, or $26, and will carry 100 pounds. A riding deer costs from 45 to 60 rubles, say $28 to $40, and will carry 175 pounds. Natives always dicker a good deal before selling deer, or anything else. Weight has to be placed on the shoulders of the animal, as its back is very weak. Pack saddles consist of two small buckskin pads stuffed with moss or hair, united at the ends by bows of deer horns having a natural curve, which leaves space between the pads for play of the shoulders. Riding saddles are similar, only wider (12 by 14 inches), without stirrups. The saddle is placed on the fore shoulder with the girth around the belly. Bridles or halters are exactly like our own, made of pliable seal thongs or braided strands of buckskin. A pack train in motion is made up of a riding animal with a string of eight pack deer in lead, fastened together by a sealskin thong, followed by another mounted leader with eight more pack animals, and so on. Progress is stimulated by kicking the sides and chests of the deer and thwacking his body and antlers with a staff which the rider keeps constantly in motion, accompanying it with a peculiar cluck, very much as a Southern negro rides a mule. This is in the Tungusi country.

The Tungusi dress in furs, much like the Tchntchi and Alaskan Eskimos, and it may be remarked incidentally that all three have their appearance, habits, dress, huts, kyacks, customs, utensils, and superstitions very much in common. They all reverence the Shamans, dread evil spirits, burn their dead, kill the superannuated, and sacrifice human life to avert plagues. They make short prayers before slaughtering domesticated deer, which are always killed by a spear thrust, the men giving the fatal stroke and the women dressing the carcass. Coincidentally, the Laplanders believe in demons, manes, and divinities, and so do the wild Eskimos of Labrador and Hudson Strait.

Some attention is paid in ~~this part of~~ Siberia to dairy products. Milk of reindeer is said to be rich, but much inferior to cow's milk. The does give only a teacupful each night, but regularity in milking would doubtless increase the flow. The flesh in early fall is better flavored than that of the American red deer, and but little inferior to the best beef.

In this region the tame deer are spotted and piebald, of a uniform reddish brown and drab. Wild ones are seal brown generally. Some are spotted with white, and others are almost white. In Lapland, Mr. Vincent tells us, reindeer are of a dark slate color (in August) with white breasts and tails; a few are brown and some white. They stand only about 3 feet high, and are 4 or 5 feet in length; but the antlers are often 4 feet long. Fawns have spike horns. Trained deer are gentle except in fall and winter, when they frequently will turn in harness and attack the occupants of sleds (pulkhas), in which case the rider simply turns the sled over and gets under it. When the deer has vented its rage, it turns it upright again and goes on as if nothing had happened. The cows, or does, give a half pint at a milking. Milk tastes like our butter; the butter tastes like suet; and the cheese is oily and strong. Mountain venison is especially tender and delicious, and the tongues good.

The two constitute important commodities in trade. Laplanders drive their deer in summer to the hills near the coast to escape gadflies, and the like, being then also within the reach of traders. In winter, on the interior plains, the moss is more abundant and the animals are safe from beasts of prey. Two hundred deer are enough to support a family of Lapps. Rich Lapps own 5,000 apiece. A deer is worth $7. Deer dig the moss with their brow antlers, feet, and nose. Four pounds of moss per day are required for an animal on a journey. On this slim allowance they will make 8 or 10 miles an hour right along. An extreme speed of 20 miles an hour is of record. In 1699 a reindeer, under stress of a Government exigency, accomplished 800 miles in two days, a feat which killed the animal; but his portrait hangs in the summer palace near Stockholm, Sweden.

In Norland the reindeer are of a dun color, with occasionally a white one. When lying down in large herds the congregation of antlers looks like winter underbrush in a forest. In Norway wild reindeer generally inhabit circumjacent islands and even the mainland. Domesticated deer are smaller than wild ones. Their life is but fifteen years; the wild ones, thirty. They draw 250 pounds and carry 130. Their range is from southern Norway to the North Cape.

Reindeer moss may be utilized for the table and is not unpalatable when boiled with reindeer milk. Its nutritive properties are lichenin and starch. It is more abundant in Sweden than in Norway, but flourishes only on elevated regions. All the Siberian tribes make spoons from the horns of the reindeer. The Koraks use the main antlers for the arches of sled frames.

[Extract from Swedish Catalogue.]

## II.—STATISTICS.

By Dr. S. A. Löfström,

*Actuary of the Royal Swedish Statistical Central Bureau.*

[World's Columbian Exposition, 1893, Chicago.]

*Reindeer breeding.*—The reindeer is the all in all of the nomad Lapp; it will furnish everything required for his subsistence. The reindeer is to be found in the northern parts of Sweden to about 63° southwards, at least along the Norwegian frontier. In the space between the latter and the Gulf of Bothnia the Lapps pursue their annual immigrations with the reindeer. During spring and early summer, before going to the alps in midsummer time, and in autumn before commencing his wanderings towards the Gulf of Bothnia, the Lapp dwells in the so-called "autumn resorts," situated on the edge of the woods facing the alps, and he will remain in these places for a shorter or longer period, according to the quality of the reindeer pastures, consisting chiefly in reindeer moss, which the reindeer seeks for in winter time by flinging away the snow. Thus the Lapp busies himself all the year round with watching his herd; the tent where he lives is called "kata." In winter time the removals are effected on snow-skates (skidor), or in a sleigh of boat shape, called "akja." The number of reindeer owned by a Lapp varies to a considerable degree. The poor may have 50 to 200 reindeer, those better off 300 to 700, and the rich Lapps will keep 1,000 and even 5,000 reindeer.

When a reindeer is killed, every bit of it is utilized. The meat, blood, and bowels are used for food, the skin is made into clothes and shoes, the sinews will furnish materials for thread, the bones and antlers are made into handles, etc.

When the reindeer is going to be killed, the herd is driven together and the reindeer cows are caught and bound. The period of milking lasts from June to October, and during this time every cow will give from 0.2 to 0.5 liter (one-fifth to one-half quart) of milk, when milked twice a day. The milk is thick and rich, "like sweet cream," but the taste resembles that of goat milk. It is seldom used when fresh, but will commonly be kept for cheese-making or for curdled milk; sometimes it is left to freeze, or mingled with berries, or diluted with water for drinking, etc.

Cured reindeer meat, skins, and cheese are the products at the disposal of the Lapps to exchange for other necessaries.

Certain Lapps, called the "Forest Lapps," will not bring their reindeer to the Alps, but remain with them in the forest belt all the year round, though they will move about with the reindeer in the same way as the "Alp Lapps." Besides, the "Forest Lapps" will leave their reindeer to themselves during spring and autumn, and then have leisure to busy themselves with hunting and fishing.

There is some difficulty in collecting statistics on the number of reindeer, as the Lapps may sometimes be unwilling or unable to give any correct statements. According to the statistics of 1890, the number of reindeer in Sweden would amount to 296,220, of which 52,550 were in the province of Jemtland, 40,500 in the province of Vesterbotten, and 203,170 in the province of Norrbotten

MINNEAPOLIS, *March 24, 1894.*

DR. SHELDON JACKSON,
*Washington, D. C.:*

Your honored favor of the 22d is on hand, and I am sorry that my application for a position came too late, and that the places have already been filled.

Concerning your request to send you some information on the breeding and training of reindeer in Lapland, I shall be pleased to tell you all I know. However, I am not personally familiar with that part of the country. I am well acquainted with some Norwegian mountaineer Finlanders who drive their herds on the Norwegian mountain ranges, and through these I could obtain the desired information for you. In mean time, I will take the liberty to write you the points known to me on this subject.

By reason of their instinct, which enables the reindeer to discover the moss even underneath the snow, the Finlander is forced to lead a nomadic life in the mountainous regions extending from the North Cape toward the southern parts of Norway. During the summer the herds preferably remain in the northern parts of the country where the reindeer-moss grows in large quantities, while as soon as the winter approaches they travel toward the south and partly near the seashores, where the climate is more temperate. The Finlanders do not keep any special watch over their herds during these journeys, and their chief occupation consists in holding the reindeer together. For this purpose they keep trained dogs, so-called reindeer dogs, which late and early surround the herds and watch them. In the winter it may be at times difficult even for the dogs to advance, but then the Finlander uses as mode of conveyance his indispensable snow-skates (ski, pl. skier), which he understands how to manage in a masterly way. The reindeer are, as a rule, not driven toward certain tracts, but are permitted to go where their instinct leads them. The reindeer possesses a remarkable skill in digging out the moss with his forelegs from underneath the snow. His worst enemy is the wolf, which nearly always follows the herds at a greater or shorter distance. The dog is also in this instance the faithful assistant of the Finlander by giving him warning and keeping these beasts at a safe distance; yet it happens quite frequently that the wolves take the herds by surprise, and then the herders are obliged to use their rifles. The season when the reindeer cows calve is considered by the Finlander the most prosperous time of the year; his foremost wishes are fulfilled whenever the number of his herds has been increased, and his prosperity depends largely on the number of reindeer which he owns.

The calves are born during the summer season, all more or less about the same time; they do not seem to need any principal care except that the new-born calves must be marked, as they generally are able to follow the mother cow for food immediately after their birth. During the winter, while the Finlanders are stationed in the southern regions, and especially when near a branch of the river with steamboat landings, the killing of the fattest animals is undertaken. The hind legs are cut into large pieces of different sizes, and these are taken to the city for sale, while the rest, even the smallest parts, are made use of by the Finlander himself for almost any purpose.

This, in short, is all I am able to state regarding the management of reindeer, and I shall be very pleased to know that it can be of use to you. On the whole, you will find that the care of reindeer is very simple. The principal duties consist in watching that none are lost.

Permit me to ask you, before I close my letter, to kindly keep me in remembrance in case of any future vacancies. I have been without work for some time and would be under the greatest obligations to you for employment of whatever nature it may be.

Most respectfully, yours,

P. A. LORVICK, *1304 Fifth street S.*

MARYSVILLE, WASH., *March 24, 1894.*

DR. SHELDON JACKSON.

HONORED SIR: I avail myself of this opportuuity to inform yon that I was the first person who read your advertisement in "Washingtou Posten," aud being obliged to leave my home for some length of time, I requested O. Bergeth to open the correspondence with you, aud I am the person who, in his uame, and from him, wrote the first letter to you. The only and true reason for our application was that I was sure of proving through the best and most reliable sources that we are fully competent and experienced in the care of reindeer. We lived iu the valleys of Haelgeland, where annually thousands of reindeer are pasturing, which we faithfully and skillfully attended during the harvest and spring season, aud we also would settle down for the summer in those regions and build tents and inclosures for the herds.

The following rein-Laplanders lived there, viz, Nils Johnsou (Swedish Laplander), with somewhat over 1,000 reindeer; Kressen Kressensen, with a smaller herd; Sjul Larson, Mathison, Klemmet, and Salinius, and many others. We being almost as skillful in using the "skeer" as the Laplanders, these would often take us along to the highlauds (mountains) on search for the reindeer that had gone astray. It was, indeed, no child's play to be overtaken by a snowstorm, and we were forced to bury ourselves under the snow until the storm had subsided. I only wish to mention our experience in the management of reindeer, be it during the wiuter, spring, the calving season, to look after the young calves (which is the most important) during the summer, and when the reindeer, following their instinct in search for food, are frequently difficult to manage. Further, the skill required of herders in swimmiug the herds across wide sounds from isle to isle, and knowing the proper time when to do this, according to the climatic conditions; to search for the reindeer that separated from the herd, small or large, cows or bucks. Next to a trained Laplander, I may conscientiously say that you hardly cau find anybody in this country who is better fitted for the business than we. There is no tract of land in the entire Norway where there are more reindeer found than where we lived.

Well, excuse me and my long letter. I have learnt to love the reindeer just as much as a horse, a cow, and a sheep, and I know that persons are required that are used to the hardships and fatigues of country life in order to fill such a place. During the severe storms it is in fact more necessary to be on foot than at any other time, and people who have not even owned a cow, and have been used to city life or the sea, cau never be good reindeer herders. The herders should be temperate, and not carry home big mugs full of beer from the saloons.

Wishing your herds the best luck, I am,

EDW. NORUM,
*Marysville, Wash.*

Box 14135.

---

BOZEMAN, *April 30, 1894.*

DEAR SIR: About two or three days ago some parties told me that a few men are wanted for Alaska to take charge of the reindeer. I have had much experience in that line, and, as a little boy, I lived among the Laplauders and observed the reindeer and their raising from all poiuts of view. How they are managed and cared for during the calving period; how to prevent the wolves from scattering the herds or from killing the young calves. The reindeer calves must be suckled by the mother cow for at least one month; this length of time depends much on the temperature of the season. The mode of weaning the calves, what we call "Kjipling," consists in preparing two wooden sticks pointed at each end and flat in shape, and further provided with necessary string fastenings that are slipped over their heads; this experiment is carried on for only one-half day at a time. The reindeer should, however, during the weaning of the calves be on tracts where plenty of good, tender moss species are growing. During the summer they feed on fine grass and reinmoss, which specially thrives upou the mouutaiu ranges, even in winter. But as

soon as the snow turns hard or "skare," as we call it (which means to a crust of snow), one has to look out for places where the grounds are better, or move down to the seashore.

In order to drive the herds onward, it is absolutely necessary to have good dogs. One of the largest reindeer is led ahead and the rest are driven after him. For the purpose of training a reindeer, the animal has to be caught with a lasso and then tied to some post or other place for about one-half day, after which maneuver he is willing to be led; however, it is advisable to offer him a small amount of salt in order to gain his confidence. The rein ox should not be castrated before he is 3½ years old, and the operation should be undertaken in the month of September. For castrating purposes two stones are used with which to crush the "Trikiler." The Laplanders use, as a rule, two rounded stones; the pouch must not be injured, because in that case the reindeer will grow lean and stupid. The half-castrated animals usually turn out to be the finest animals. This castrating is performed in a different manner; only one of the "Trikiler" is crushed, while the other is pinched off half ways, and only the lower end of the half is crushed.

In case you wish to learn further details, please let me know; you probably need somebody to go on to Alaska. No doubt I am too late with my application for the place.

My health is good and I have a strong constitution.

Age 31 years, and unmarried. I am anxious for an answer.

Yours, truly,

GEO. HAMMER, *Bozeman, Mont.*

---

REINDEER INTRODUCED IN SOUTHERN NORWAY.

MCNEILS ISLAND, WASHINGTON, *February 13, 1895.*

SIR: To-day I received from a friend in Norway a reply to your inquiry concerning the success of importing domestic reindeer from Lapland to southern Norway, a distance of 600 miles, with great variation of climate. He writes: "Some two years ago a couple of farmers (Bonder) in the district of Valders, conceived the idea of supplying the cities of southern Norway and the many tourist hotels in the country with the celebrated fresh reindeer meat all the year around. Valders is a highland 120 miles north of Christiania, covered with moss, and well adapted for the raising of domestic reindeer. After agitating the matter other farmers became interested and a joint stock company was formed. Three hundred head of reindeer were purchased in Lapland and a family of Laplanders employed to come with and take charge of the herd. In addition to herding, the Lapps were to teach the business to some of the farmer boys of Valders. Notwithstanding the prediction of some people that the reindeer would not thrive so far south, as it is very hot in the Valders Mountains in summer and the snow very deep in winter, the loss has been trifling and the enterprise has proven a success, returning to the stockholders many hundred per cent on their investment."

According to the knowledge I have of Alaska it is much like my native land and its wonderful scenery will attract an increasingly large number of tourists from year to year. These will in the future make a good market for the surplus reindeer, and thus directly benefit the native owners and indirectly the whole country.

Truly, yours,

C. TANGEN.

DR. SHELDON JACKSON.

*Eskimo settlements in vicinity of Bering Straits and number of houses in each, 1893–94.*

| | Houses. |
|---|---|
| Kis e med lok | 1 |
| Kil ek me ok | 1 |
| An e yok | 3 |
| To o tet | 2 |
| Kev ed lok | 7 |
| ——— | 1 |
| Ke git tuk | *7 |
| Oo we wuk | 4 |
| Syn na zot | 4 |
| E zoo ah | 3 |
| Im a anok | 1 |
| Mit le tok vik | 4 |
| Ah gwood la wok | 3 |
| Syn ow ruk | 3 |
| Pe noog zra zok | 3 |
| King e gan | †66 |
| Tap karz ruk | 3 |
| Po lez ruk | 6 |
| Ki now guk | 2 |
| Syn ok | *9 |
| Nook | 8 |

*Estimated distances on northeast coast of Siberia.*

| | Miles. |
|---|---|
| Walan to Tumca | 6 |
| Tumca to Enchowan | 10 |
| Enchowan to Enmatowan | 4 |
| Enmatowan to Utan | 3 |
| Utan to Chutpa | 20 |
| Chutpa to Keshouran | 6 |
| Keshouran to Eshan | 6 |
| Eshan to Chektoun | 7 |
| Chektoun to Ounine | 9 |
| mine to Ceshan | 3 |
| Ceshan to Killourroun | 4 |
| Killourroun to Kerneeshgoun | 10 |
| Kerneeshgoun to Enourman | 6 |
| Total, Walan to Enourman | 94 |
| Enourman to Nata-Kerneeshgoun | 4 |
| Nata-Kerneeshgoun to Natan | 2 |
| Natan to Maline | 11 |
| Maline to Mami | 3 |
| Mami to Tipkan | 2 |
| Tipkan to Naskan | 6 |
| Naskan to Irgunuk | 3 |
| Irgunuk to Raranoop | 3 |
| Total, Walan to Raranoop | 128 |

The foregoing distances are estimated ones from a canoe following the inequalities of the coast line, and therefore liable to error. The summer rendezvous of the deer men are at distances from 8 to 14 miles from the coast line, and are indicated by a red cross. The west shore of the lagoon is from native reports and is therefore marked by red line; the east shore is nearly correct. The whole probably consists of a series of small lagoons in August when the water is low. The Kaloop River and Lake near Killourroun is nearly correct, and the streams at Ichaw and Chutpa are from general observations. The Kaloop Mountains are placed from eyesight alone.

*And one dance house. †And three dance houses.

# INDEX.