

ALASKA SEAL-FISHERIES.

L E T T E R

FROM

THE SECRETARY OF THE NAVY,

TRANSMITTING

A copy of the report of Lieut. Washburn Maynard, United States Navy, on the subject of the Alaska seal-fisheries.

JANUARY 5, 1876.—Referred to the Committee on Commerce and ordered to be printed.

NAVY DEPARTMENT,
Washington, December 20, 1875.

SIR: In compliance with a resolution of the House of Representatives of the 14th instant, I have the honor to transmit a copy of the report of Lieut. Washburn Maynard, United States Navy, on the subject of the Alaska seal-fisheries made by that officer, in compliance with the provisions of an act of Congress approved April 22, 1874.

Very respectfully, your obedient servant,

GEO. M. ROBESON,
Secretary of the Navy.

Hon. M. C. KERR,
Speaker of the House of Representatives.

THE FUR-SEAL FISHERIES.

Report of Lieut. Washburn Maynard, United States Navy.

NEWPORT, RHODE ISLAND, *November 30, 1874.*

SIR: In obedience to your instructions of the 9th of May, assigning me to the duty required by an act of Congress approved April 22, 1874, entitled "An act to enable the Secretary of the Treasury to gather authentic information as to the condition of the fur-trade in the Territory of Alaska," I have been engaged, as far as has been practicable this season, in making the necessary investigation. My attention has been given chiefly to the fur-seal fisheries, as being the largest and most important branch of the fur-trade, and especially to ascertaining whether the terms of the lease from the United States to the company now in

possession of them have been complied with by said company. I have also had opportunity to acquire information in regard to the sea-otter trade, and to make an examination of the islands of Saint Matthew and Saint Lawrence, two large islands in Bering's Sea, north of the Prybilov group.

I have now the honor to submit, for your consideration, the following report in relation to those subjects.

I am, sir, very respectfully, your obedient servant,
 WASHBURN MAYNARD,
Lieutenant, United States Navy.

HON. GEORGE M. ROBESON,
Secretary of the Navy,
Navy Department, Washington, D. C.

THE FUR-SEAL FISHERIES.

The Islands of Saint Paul and Saint George, or the "Seal Islands," as they are commonly called, are the principal ones on the Prybilov group; the other two, known as the Otter and Walrus Islands being merely islets. They lie in Bering's Sea, between 56° and 58° of north latitude, and 169° and 171° of west longitude. The former has an area of 33 and the latter of 27 square miles, with, respectively, 42 and 29 miles of shore-line. They are enveloped in summer by dense fogs, through which the sun rarely makes its way, and are surrounded in winter by fields of ice driven down from the Arctic by northerly gales. They have no sheltered harbors, but slight indentations in the shore-line afford a lee for vessels and a tolerable landing-place for boats in certain winds. The shores are bold and rocky, with strips of sand-beach and slopes covered with broken rocks, at intervals between the cliffs, and the interior of both is broken and hilly; neither tree nor shrub grows upon them, but they are covered with grass, moss, and wild flowers. For nearly one hundred years fur-seals have been known to visit them annually in great numbers, for the purpose of bringing forth and rearing their young, which circumstance gives them no inconsiderable commercial importance. The seals occupy the island from the breaking away of the ice in the spring until it surrounds them again in early winter; that is from about the middle of May until December. In mild winters, when there is little or no ice about the islands, a few seals have been seen swimming about in the water through the entire season, but it has rarely occurred. They are not known to haul up on the land elsewhere, within the limits of the North Pacific Ocean, except upon Bering and Copper Islands, lying in Bering's Sea, near the Asiatic coast and Robin Reef, a small rock in the Okhotsk Sea. They certainly go to the southward in the fall, for they are frequently seen at sea, either singly or in schools of several thousands, and are killed in the water all the way from Sitka to the Straits of Fuca. In 1825 fifty-four were taken by the Russians on the Farallones Islands, off the entrance to the bay of San Francisco, but none before or since have been seen there. There seems to be no reason why they cannot remain in the water during the entire time they are absent from the islands, for they eat their food there at all times, and are able to sleep upon its surface.

They may be divided into two classes, the breeding and the non-breeding seals. The former comprise the full-grown males or bulls, the adult females or cows, and the young, or pups; the latter, the young or bache-

lor males, and the yearlings of both sexes. Both classes leave the water and haul up along the shores of the islands near, but entirely separate from each other. They choose certain portions of the shore, to the exclusion of the rest, not all of either class being together, but each into separate communities, which are often several miles apart. The breeding seals occupy the sloping ground between the cliffs, which is covered with bowlders and broken rocks, beginning a few feet above high-water mark, and extending back to the depth of from fifty to two hundred feet in a compact, uniform manner. Such spaces are called breeding-rookeries. The non-breeding seals, on the contrary, are scattered over the sand-beaches and the higher ground in rear of the rookeries, without any regular order of distribution. The parts of the shore so used are called "hauling-grounds." Pathways are left open in the rookeries at convenient points to allow the passage of the non-breeding seals to and from their hauling-grounds in the rear.

There are eleven rookeries on Saint Paul's Island, extending, with the adjacent hauling-grounds, over more than one-third of its shore-line, and on Saint George Island five, taking up less than one-tenth of it. They are re-occupied each year, with but little change.

About the middle of May the bulls, which are the first of the breeding-seals to arrive, haul from the water and establish the rookeries in readiness for the cows, who begin to come a little later. It seems probable that the rookeries are occupied by the same bulls and cows from year to year, as they change but little, either in size or form; but it has been proved that the bachelors do not return to the same hauling-ground, or even to the same island. The time of arrival of the cows is governed by their period of gestation, as they do not appear on the rookeries until within a short time of giving birth to their pups; hence all do not come at the same time, but continuously from the latter part of May until the middle of July. The bulls are polygamous, having from five to twenty cows each; so the number of them upon the rookeries is not more than one-tenth that of the cows. They have frequent and bloody fights for the possession and retention of their places upon the rookeries, and of the cows, in which some are killed, others driven from the rookeries, and all more or less badly bitten and gashed by the sharp, curved tusks of their opponents. The cows, even, do not always escape unhurt, as two bulls sometimes seize a cow and literally tear her in two in their struggle for possession.

The cows are continually arriving upon the rookeries and giving birth to their pups until about the middle of July. Usually each cow bears a single pup, though I have been told by persons whose statement I have no reason to doubt, that they have witnessed one or two instances of twins. From the 10th to the 25th of July the rookeries are fuller than at any other time during the season, as the pups have all been born, and all the bulls, cows, and pups remain within their limits.

During the breeding season, nearly three months, the bulls have remained upon the rookeries, never leaving them for an instant, even to procure food.

This fasting, the constant watchfulness necessary to keep their harems together and to prevent the encroachments of other bulls, and the service of the cows, render their position no sinecure. Their emaciated bodies and loose and wrinkled skins at its close are in marked contrast to the fat, sleek-looking cows, for the latter have been constantly going and coming between the rookeries and the water, so that at any one time there are seldom more than one-half of them on shore. About the first of August, the breeding season being over, and the pups, which grow

rapidly, having become large and strong enough to move about, the rookeries begin to lose their compact formation and rigid exclusiveness. The bulls begin to go into the water, their places being filled by the younger males, which up to this time have not been allowed to go upon the rookeries, while the cows and pups spread back over the hauling-grounds in scattered groups, and occupy more than twice the space that had previously held them. Meanwhile the young males or bachelor seals have been coming to the hauling-grounds, which are covered more or less thickly with them all summer. They do not remain on shore long at a time, but haul up to sleep and play for a while, and then return to the water for food. They are so numerous, however, that thousands can always be seen upon the hauling-grounds, as all of them are never either on shore or in the water at the same time. The yearlings, easily distinguished by their size and the silvery color of their sides and bellies, do not make their appearance until the latter part of July, when they arrive in a body, males and females, together. They go upon the hauling-grounds in great numbers, and play together for hours at a time. The bachelors join them in their sport, and, singling out the baby cows, form mimic rookeries, and imitate the roaring, fighting, and caressing of the bulls in a ludicrous manner. In September and October the pups exchange the coat of short black hair, which had been their only covering from their birth, for one of fur, and hair similar in appearance to that of the yearling, and learn to swim, in readiness for their departure from the island in November and December. Many of them are killed by the surf, particularly if the season is a stormy one, as they are not strong enough swimmers to save themselves from being dashed against the rocks by it. The cows remain with their pups, and suckle them until all have left the islands in December. It is probable that of the seals born each year about one-half are males. The experiment was tried of examining one hundred pups taken at random from the rookeries, and in that number the sexes were about equally divided. The number of bachelor seals in proportion to the cows would also seem to confirm the supposition. There is not the slightest perceptible difference in appearance between seals of the two sexes, either in the first or second year after their birth, but as they grow older they differ, so as to be readily distinguishable from each other. The pups when born have only a short black hair, no fur; this is gradually replaced in their first year by a coat of fine, thick fur of a light gray color, and of hair longer than the fur, so as to cover it, of a silvery gray upon their sides and bellies, but black or very dark gray upon their backs. The color of their hair changes, in their second year, to a uniform dark gray. In their fifth year the hair upon the neck and shoulders of the males begins to grow coarser and longer, forming a sort of mane, which increases in length and stiffness until he has attained his full growth, in his eight or ninth year. The females are not found upon the hauling-grounds with the males after they are two years old; hence it seems probable that they go upon the rookeries in their third, and bear a pup in their fourth year. When both are full grown, the sex differ most widely in appearance; the male, weighing from four to five hundred pounds, is about three times as large as the female, has a mane, and is either black or dark brown in color. The color of the female is a soft rich brown upon the back and sides, changing almost to orange upon the belly, and she has no mane. The fur of the cows is rather thicker and finer than that of the other seals, though the skins of young males from three to six years old are not very much inferior.

It is of great importance to know how many seals come annually to the island, or rather to know how many may be killed for their skins without causing a less number to come hereafter than do at the present time. To determine how many there are with accuracy is a task almost on a par with that of numbering the stars. The incessant motion of the animals when on shore, the great variety in size, color, and position, the extent of surface over which they are spread, and the fact that it cannot be determined what proportions of them are on shore at any given time, make it simply impossible to get more than an approximation to their numbers. They have been variously estimated at from one to fifteen millions. I think the most accurate numeration yet made is that by Mr. H. W. Elliott, special agent of the Treasury Department, in 1872. This calculation is based upon the hypothesis that the breeding-seals are governed in hauling by a common and invariable law of distribution, which is, that the area of rookery is directly proportional to the number of seals occupying it. He estimates that there is one seal to every two square feet, of rookery surface; hence the problem is reduced to the simple operation of obtaining half the sum of the superficial areas of all the rookeries in square feet. He surveyed the rookeries of both islands in 1872, when at their greatest limit of expansion, and obtained the following results: Upon Saint Paul's Island there were 6,060,000 square feet of ground, occupied by 3,030,000, and on Saint George's Island, 326,840 square feet, occupied by 163,420; a total for both islands of 3,193,420 breeding-seals. The number of non-breeding seals cannot be determined in the foregoing manner, as they haul most irregularly; but it seems probable that they are nearly as numerous as the other class, which would give not far from 6,000,000 as the number of seals of all kinds which visited the island during the season of 1872.

It is likely that these figures are not far from the truth, but I do not think it necessary to take into consideration the actual number of seals in order to decide the question of how many can be taken each year without injury to the fisheries. The law (discovered by Mr. Elliott) which governs the breeding-seals in hauling, viz, that the size of the rookery varies directly as the number of seals, seems to me, after close and repeated observation, to be correct. All the rookeries, whether large or small, are uniform in appearance, alike compact, without waste of space, and never crowded; such being the case, it is unimportant to know the actual number of seals upon the rookeries, for any change in the number of seals, which is the point at issue, any noteworthy increase or decrease in the size of the rookeries, taken collectively, will show a corresponding increase or decrease in the number of breeding-seals, consequently in the number of pups born, upon which, of course, the extent and safety of the fisheries depends. If, then, a plan or map of each rookery be made every year, showing accurately its size and form when at its greatest expansion, which is between the tenth and twenty-fifth of July, a comparison of them would give the relative number of the breeding-seals from year to year. I will submit with this report maps of Saint Paul's and Saint George's Island, showing the extended location of breeding-rookeries and hauling-grounds from surveys in July, 1874, made by Mr. Elliott and myself, and a map of each rookery on both islands, drawn from careful surveys made by Mr. Elliott in 1872, showing them as they were in the season of 1874 as compared with that of 1872. I respectfully recommend that enlarged copies of these latter maps be furnished to the Government agents in charge of the islands, and that they be required to compare them each year with the respective rookeries, and note the change in size and form, if any exist upon

them. This, if carefully done, will afford data, after a time, by which the fisheries can be regulated with comparative certainty, so as to produce the greatest revenue to the Government without injury to the seals.

Since 1870 there have been killed on both islands, in round numbers, 112,000 young male seals each year. Whether this slaughter has prevented the seals from increasing in numbers or not, and if so, to what extent, can only be deduced from their past history, which unfortunately is imperfectly known. In 1839 there were fewer seals upon the islands than had ever been seen before since their discovery in 1786. On Saint Paul's there were not more than twelve or fifteen thousand of all kinds. The killing of them was then stopped, and not resumed until 1845, when it was done gradually, and, as had never been the case before, only the young males were killed. The rookeries continued to increase in size until 1857, since which time they have remained about the same, although a less number were killed yearly between 1857 and 1868 than have been killed since. This would seem to show that there is a limit beyond which they will not increase and that this limit has been reached. If they could be under our control and protection at all times, and if a sufficient supply of food for them could be procured, we should doubtless be able to cause them to multiply, for there are more of both sexes born each year than necessary to meet the loss from the natural causes of old age, disease, (unless epidemic,) and accident. But in reality we do not even know where they are for seven months in each year, while we do know that they have deadly enemies, which make sad havoc, particularly among the pups and yearlings, as a single killer-whale has been found to have fourteen young seals in his stomach when killed. Our protection of them can only be partial, that is to say, we can limit the number to be killed, when they are within our reach, and prevent their being disturbed on the breeding-rookeries or driven from the islands. On the other hand, the question arises whether the killing of the number above mentioned has or has not caused a decrease of the seals. Judging from a comparison between the maps of the rookeries, as they were in 1872, and the rookeries themselves this year, and from the testimony of the best-informed men on the islands, both whites and natives, I think it has not as yet. As the young males alone are killed, injury would be effected through them, by not allowing a sufficient number to reach maturity to supply the demands of the rookeries. They do not go on the rookeries until they are at least six years old; hence the effect of the first year's killing cannot be seen until the pups born then have reached that age. For that reason it seems to me that it is too soon to decide whether we are killing too many or not. It is possible that more, even vice as many, might be taken without injury, but it would be making a severe and more hazardous experiment, before any results have been obtained from the first. The number now killed annually is entirely experimental, and we have nothing to start from as a basis. Until the effect produced is satisfactorily shown, I would, therefore, not recommend an extension of the contract as to the number of seals to be killed, until seven or eight years from the date at which the one now existing went into effect, when, if the rookeries have not decreased in size, it can safely be done.

THE NATIVES OF THE ISLANDS.

Saint Paul's and Saint George's Islands were uninhabited when discovered by Prybilov in 1786, but in that year, and at various times

since, the Russians transferred a number of Aleuts, with their families, from the island of Ounalaska to them. The descendants of these people, together with a few Russian creoles from various parts of the territory are the present native inhabitants of the islands. Their population on the 1st of August was as follows:

Island.	No. of people.	No. of families.	Males.	Females.	Adult males.	Adult females.	Aleuts.	Creoles.
Saint Paul's...	225	62	104	121	72	67	54	171
Saint George's.	123	26	58	65	27	31	22	101

They live in a single village on each island, the one on Saint Paul's situated at the southeastern end, and on Saint George's, on the north shore. They were Christianized by the Russians, and worship according to the forms of the Greek Catholic Church. In disposition they are mild and amiable, and are skillful and faithful workers at their business of taking seal-skins.

Strictly speaking, there is no form of government among them, though their chiefs, elected by themselves, have a certain degree of control, particularly in directing the labors of the sealers. They have a great respect for law and authority, as disobedience to the commands of their Russian rulers was punished with great severity. There have not been many criminal cases or misdemeanors thus far since the transfer of the territory, and none of a serious nature, merely a few cases of assault and petty theft, which were readily settled by the Government agent, assisted by the chiefs. But as the special agents of the Treasury Department, who are the only representatives of the Government at the islands, have not been invested as yet with any governing power, it seems necessary that some means should be provided for securing to all equal protection in the rights of persons and property. This could be accomplished for the present, at least, by giving them authority somewhat similar to that of justice of the peace, making them responsible to the Secretary of the Treasury for the proper performance of that duty, as they are for that of those with which they are now charged. The seals furnish the natives with a comfortable and certain living, their flesh serving them for food, and the taking of their skins bringing substantial income.

THE LEASE OF THE ISLANDS.

In June, 1870, Congress passed an act entitled "An act to prevent the extermination of fur-bearing animals in Alaska," which authorized the Secretary of the Treasury to lease to private parties for a term of years the right to engage in the business of taking fur-seals on the islands of Saint Paul and Saint George, under certain specified conditions and restrictions. Therefore the subject was publicly advertised and bids solicited, the privilege to be awarded to the highest responsible bidder. A number of individuals doing business in San Francisco, under the firm-name of the "Alaska Commercial Company," were the successful bidders, and the right was granted to them under the terms of the lease now in force (a copy of which is annexed) for a period of twenty years from the 1st day of May, 1870. The terms were not arranged

and the lease delivered until the 31st day of August, 1870, and the vessels and agents of the company did not reach the islands until the 1st of October. The season allowed by law for killing seals being nearly over, but few were taken that year, (3,448 on Saint Paul's and 5,789 on Saint George's,) but the following and each succeeding year they have taken the stipulated number. When the lease was made, it was erroneously supposed that there were about one-third as many seals on Saint George's Island as on Saint Paul's; and in consequence the number to be taken from each island was fixed at 25,000 and 75,000 respectively. In reality there are only about one-eighteenth as many on the former as the latter, which fact having been clearly shown last year by Mr. Elliott, the apportionment was changed to 10,000 for Saint George's and 90,000 for Saint Paul's, according to the terms of the lease. In consideration of being the only company allowed to take fur-seals upon the islands, the Alaska Commercial Company has agreed to pay a yearly rental for the use of the islands, and a tax or duty upon each skin taken and shipped from them; not to kill more than the stipulated number of seals, and seals of a particular kind; not to molest them upon the rookeries or in the water, and to do nothing which would tend to frighten them from the islands; to provide for the comfort, maintenance, education, and protection of the native inhabitants, and neither to furnish nor to allow its agents to furnish distilled spirits or spirituous liquors to any of the natives.

The company employs on Saint Paul's an agent who has general charge of the business on both islands, three assistants, a physician, a school-teacher, three carpenters, a cooper, a steward and cook; and on Saint George an agent, a physician, a school-teacher, and a cook.

The great work of the season, the taking and curing of seal-skins, begins the first week in June, and is pushed forward as rapidly as possible, as the skins are in the best condition early in the season. This year 90,000 skins were taken on Saint Paul's by eighty-four men in thirty-nine days. The natives do all the work of driving, killing, and skinning the seals, and of curing and bundling the skins, under the direction of the company's agents and of their own chiefs. The first operation is that of driving the seals from the hauling to the killing grounds. The latter are near the salt-houses, which are built at points most convenient for shipping for skins, and all the killing is done upon them, in order not to disturb the other seals, and to save the labor of carrying the skins. The seals suitable for killing (which are the young males from two to six years old) are readily collected into droves upon the hunting-grounds by getting between them and the water, and are driven as easily as a flock of sheep. They move in clumsy gallop, their bellies being raised entirely from the ground, upon their flippers, which gives them, when in motion, the appearance of bears. They are sometimes called "sea-bears" on account of this resemblance. In driving them care is taken not to hurry them, for, if driven too fast they crowd together and injure the skins by biting each other, and also become over-heated and exhausted. They are driven from one-half mile to five miles in from three to thirty-six hours, according to the location of the hauling-grounds. After reaching the killing-grounds they are allowed to rest and cool for several hours, particularly if the drive has been a long one. The drives vary in number from five hundred to as many thousand, as there happen to be few or many seals upon the hauling-ground, where the drive is made. In each drive there are some seals that are either so large or so small that their skins are not desirable, and sometimes a few females are driven up, not often, however, as they

seldom stray from the rookeries. All such are singled out and permitted to escape to the water. The killing is done with a blow on the head by a stout club, which crushes the skull, after which the skins are taken off and carried into the salt-houses. During the first half of the month of June, from five to eight per cent. of the seals in the drive are turned away, being either too small or too large, and from ten to twelve per cent. during the latter half. In July the percentage is still greater, being about forty per cent. for the first and from sixty to seventy-five per cent. for the latter half. About one-half the seals killed are about three years old, one-fourth four, and the remainder two, five, and six. No yearlings have been killed up to the present time, though allowed by the lease, as their skins are too small to be salable in the present state of the trade, but by some trade in it they may become desirable in the future and would then be taken. This would injure the fisheries, because the yearlings of both sexes haul together, and it would be almost impossible to separate them so as to kill only the males. There has been a waste in taking the skins, due partly to the inexperience of the company's agent, and partly to accident and the carelessness of the natives. In making the drive, particularly if they are long on, and the sun happens to pierce through the fog, some of the seals become exhausted and die at such a distance from the salt-houses that their skins cannot well be carried to them by hand, and are therefore left upon the bodies. This was remedied during the last killing-season, by having a horse and cart to follow the drive and to collect such skins. Some skins have also been lost by killing more seals at a time than the force of men employed could take care of properly. Good judgment and constant care are required in taking the skins, as fifteen minutes' exposure to the sun will spoil them, by loosening the fur. Another source of waste is by cutting the skins in taking them off in such a manner as to ruin them. It was very difficult at first to induce the natives to use their knives carefully, and several hundred skins were lost in a season by careless skinning; but by refusing to accept and pay for badly-cut skins, the number has been greatly reduced, so that the loss this year on Saint Paul's was but one hundred and thirty from all causes. The salt-houses are arranged with large bins called kenches, made of thick planks, into which the skins are put, fur-side down, with a layer of salt between each layer of skins. They become sufficiently cured in from five to seven days, and are then taken from the kenches and piled up in books, with a little fresh salt. Finally they are prepared for shipment by rolling them into compact bundles, two skins in each, which are secured with stout lashings. The largest of these bundles weigh sixty-four pounds, but their average weight is but twenty-two. The smallest skins, those taken from seals two years old, weigh about seven pounds each, and the largest, from seals six years old, about thirty.

The skins are counted four times at the island, as follows: By the company's agent and the native chiefs when they are put into the salt-houses, the latter given in their accounts, after each day's killing, to the Government agent; again when they are bundled by the natives, who do the work, as each is paid for his labor by the bundle; by the Government agents when they are taken from the salt-houses for shipment, and the fourth time by the first officer of the company's steamer, as they are delivered on board. An official certificate of the number of skins shipped is made out and signed by the Government agents in triplicate, one copy being sent to the Treasury Department, one to the collector at San Francisco, the third given to the master of the vessel in which they are shipped. The amount of the tax or duty paid by the

company to the Government is determined by the result of a final counting at the custom-house in San Francisco. The books of the company show that it has paid into the Treasury, since the date of the lease, \$170,480.45 on account of the rental of the islands, and \$1,057,709.74 tax on seal-skins, which sums also appear in those of the Treasury Department. The latter sum is less by \$16,458.63 than the tax that should have been paid, had one hundred thousand skins been taken each year since 1870, or, in other words, 6,269 fewer skins have been shipped than the lease permitted. The record kept at the islands, by both the Government's and company's agents, shows that in 1871 but 19,077 skins were on St. George's, instead of 25,000, the number allowed, and that nearly every year since, the number shipped has fallen a little short of 100,000.

In addition to the seals killed by the company for their skins, about twelve thousand are killed annually, under the direction of the Government's agents, to supply the natives with food. Between seven and eight thousand of these are pups, killed in November and scattered for consumption during the winter, when there are no seals on the islands. The remainder are bachelor males, killed between the months of April and November, at times when none are being killed by the company. The skins of the pups are too small and inferior to be salable, but are tanned and used by the natives for robes, carpets, &c. Those taken from the others are good, except those taken in August and September, when they are "stagey," and are accepted by the company and counted as a part of their quota. The seals shed their coat of hair and get a new one between the months of June and October. Skins are said to be stagey when the hair of the new coat has not grown long enough to project beyond the fur, and are consequently injurious to it, as they cannot be plucked out. No use is made of the carcasses of the dead seals, which are left on the killing-grounds, to be decomposed and dispensed by the action of the elements. It was thought at first that a large amount of valuable oil could be obtained from them, and the company agreed to pay a tax of fifty-five cents a gallon for all that should be shipped or sold, but after making about eight thousand gallons in 1871-'72, it was found that the cost of making and shipping it to San Francisco was greater than the price it brought there, so no more has been made since and none has ever been shipped. The tax was taken off last year and the company simply required to pay to the natives ten cents per gallon for their labor in making the oil, but during the sealing-season the entire working-force of the natives is fully occupied in taking the skins, and after it is over they are unwilling to do the work of trying out oil from the carcasses, for, as they say, they make money enough by sealing. They do, however, make a few gallons for themselves yearly, which they use for burning. Care is taken to prevent molesting or frightening the seals; no dogs are allowed upon the islands, and the use of fire-arms is prohibited except in winter. It has been asserted that the sight of blood and the sight of the killing of their companions has a tendency to drive them away from the islands, but the experiment has been tried of fastening tallies to numbers of the seals which are turned away from the killing-grounds, and always with the result that the same seals have been found upon the beach and driven again within a day or two. Moreover, there is a breeding-rookery within sight of the killing-grounds on Saint Paul's, and but a short distance from them, which has been increasing in size for several years.

TREATMENT OF THE NATIVES BY THE COMPANY.

The lease requires that provision be made by the company for the comfort, maintenance, education, and protection of the native inhabitants of the islands.

The natives do all the work of taking and curing the seal-skins, for which they are paid by the company forty cents a skin. This produces each year a fund of \$40,000, which is divided between the inhabitants of the two islands, according to the number of skins taken from each, which gives \$30,000 to the people of Saint Paul, and \$10,000 to those of Saint George. In addition to this, they are paid forty cents apiece for sea-lion skins, ten cents for their throats, and \$5 a barrel for their intestines. As this sum is earned by the joint labor of all the able-bodied men, it is considered a common fund, to be divided equitably among them. Payment is made for all other labor to each individual performing it at established rates. In dividing the sealing fund, the ability of the sealers is considered, and the division made accordingly. Thus the strongest and most skillful men, who work the entire season, receive a first-class share. Those who are less skillful, and the old men who are unable to do the harder part of the work, receive second and third shares, while the boys who take part in the sealing for the first time, receive a fourth-class share. The assignment of shares is made by the chiefs and acquiesced in by the others. Each year, after all the skins have been taken, the chiefs furnish the company's agents with a list of the men who have been engaged in sealing during the season, and the share assigned to each. The second, third, and fourth class are respectively ninety, eighty, and seventy per cent. of the first-class share. Two first-class shares are voluntarily given for the support of the church, and one for that of the priest. The value of the shares varies a little from year to year, with the number of men engaged in sealing. This year (1874) it was for each, respectively, \$429.53, \$368.58, \$343.62, and \$300.63. The result of the division is formally made to the people by the company's agents, through the chiefs and in the presence of the Government's agents. These sums are not paid at the time to the natives, but are placed to their credit in the book of the company and in pass-books which are furnished to each man. All other labor is paid for in coin when performed, at the rate of from 6 to 10 cents an hour, according to the nature of the work, except that of bundling skins, which is at the rate of one cent a bundle. The first chief is paid a monthly salary of \$15, and each of the others, three in number, are of \$10, in addition to their shares of the sealing-fund. Other natives, men and women, employed throughout the year in other capacities, receive from \$4 to \$30 a month and board.

Clothing, provisions, and other articles are kept in the company's store-houses on the island, and are sold to the natives at prices not exceeding those for which the same could be bought at retail in San Francisco. I examined the goods and found them to be of good quality. The people have but little idea of economy, and would spend all their money in a short time for certain articles of which they are fond, hence it is necessary to limit their sale, such as butter, sugar, and perfumery. They are encouraged to save money by the company, which receives deposits from them, subject to the usual rules of "savings banks," and pays an interest of nine per cent. per annum. Deposits range from \$100 to \$1,100. The church has a deposit of \$8,000. Some are in debt to the company, but become less so every year. Such as are without means of support, widows, and orphan children are supported by the company.

The natives live partly in "harabbakies" or earth-houses, and partly in comfortable frame houses. Thirty of the latter have been built within the last two years by the company, and given rent free. Others are being built as rapidly as possible, it being the intention of the company to give each family a house. The lease requires the annual delivery upon the island of sixty cords of fire-wood, and twenty-five thousand dried salmon, for the use of the natives; but, with the consent of the Secretary of the Treasury, coal, ton for cord, has been substituted for the former, and an equivalent quantity of salted salmon and cod-fish for the latter. Both have been regularly supplied, as shown by the receipts of the Government agent and the statements of the natives, together with as much salt and as many barrels as has been desired for curing and storing their seal-meat.

Two physicians are in the employ of the company, one residing on each island, who are charged with the care of the sick, and have already, by their efforts, seconded by the example of the other white residents, induced greater cleanliness and a more healthful mode of living among the natives.

The education of the native children has not been neglected, though so far the attempt to teach them has not been as successful as could be desired. For each island a competent teacher, a convenient and well-warmed school-room, and a supply of school books, &c., have been provided every year from the first of October until the first of June, but the difficulty has been to induce the parents to send their children, as they do not think them able to learn both English and Russian, and as the latter is the language of their church they consider it the most important. The average attendance at the school on Saint George's has been but five or six, while there are from thirty to forty children, and on Saint Paul's but four or five, with from forty to fifty children. Last year on the latter island there was a better attendance, and the children made considerable progress. The prejudice of the older people seems likely to wear away, as they learn a little English themselves from constantly hearing it, and will doubtless disappear after a time.

The company has wisely adopted a fair and liberal policy in its dealings with the natives, and is more than repaid for the expense incurred by the increased ease and rapidity with which they work while taking skins. I examined carefully the books and papers of the company, both at its office in San Francisco and upon the island; also the record kept by the Government agents, and talked privately with the most intelligent of the natives, but was unable to discover that there has been any fraud practiced toward the Government, or want of compliance with the terms of the lease.

The natives keep a jealous watch upon the seals, being fully impressed with the fact that their welfare depends upon the safety of the fisheries, and are well informed in regard to all laws and contracts which have been made by the Government concerning them.

THE SEA-OTTER.

During the Russian occupation of Alaska Territory the trade of sea-otter skins was of greater value and importance than any other branch of the fur-trade, both from the high prices obtained for them and also from the numbers which were taken. They were sent to China, where they were advantageously exchanged for tea and cloth. One sea-otter skin brought as much as ten seal-skins, and from ten to twenty times as much as any other skins found in Alaska. Fur-seals, beavers, and

foxes were the only animals taken in greater numbers. The demand for this fur and the improvident manner of taking the animals have greatly diminished their numbers, though the value of the skins is perhaps even greater than formerly.

In early times sea-otters were found along the outer sea-coast from California to the westernmost of the Aleutian Islands, also about the Prybilov group, and Cook mentions having seen a few of them at Saint Matthew's Island. It does not appear that they have ever been found on the coast of the main-land, north of the Alaskan peninsula. They were more abundant along the coast of the Aleutian Islands and along the coast as far as Sitka. South of that point they were less numerous and were taken mostly from Queen Charlotte's Islands, Grey's Harbor, firth north of the Columbia River, and the coast of California in the vicinity of Russian River. For more than a century they have been hunted almost incessantly, and killed without regard to age or sex, wherever found, yet they still frequent some of their favorite haunts, though in comparatively limited numbers. At the present time a few of them are killed at Grey's Harbor, by white hunters and Indians; and along the coast to the northward as far as Cook's Inlet, by the Indians, but they are very scarce.

The Aleutian Islands and those south of the Alaska peninsula, including Kodiak, are the only places where any considerable numbers are found. The yearly catch averages about 3,500, of which from 400 to 500 are from Kodiak and that vicinity, and the remainder from the islands to the westward of these. About one-twentieth are prime skins, one-sixth pups, less than one year old, and the rest middling and ordinary. The finest are taken near Otter Island, the most westerly of the Aleutians, and Kodiak; the greater number about Leanak Island and the "Chenabour Rocks."

The full-grown animal is from three and one-half to four feet long, exclusive of the tail, (which is from a foot to fourteen inches long,) and is in the shape of its body something like a beaver; the head is rather small and the nose pointed, with whiskers on each side like the sea-lion and seal, but shorter and fewer in number. Their legs, four in number, are short and small, and the toes are connected by a membrane. The skin is very loose upon the body; so much so that by seizing it about the middle of the back a foot or more of slack may be taken up, and when taken off, dried, and slightly stretched, it is from seven to nine feet long. The male rarely weighs more than seventy or seventy-five pounds, and is slightly larger than the female, though the latter has usually the best fur. It is very difficult to ascertain their habits, as they frequent the most exposed and dangerous portions of the coast and seldom go upon the land; but most of the hunters agree to the following facts concerning them:

They are rarely seen on shore except in winter, when they sometimes haul in great numbers on outlying rocks, particularly after a severe gale, when there is a heavy surf. During the summer they go several miles off shore, and are sometimes seen sleeping upon the kelp or on the water. They breed apparently either upon the kelp or in the water, as there has never been an instance observed of a female giving birth to her young on the land. The young are about twelve inches long, and are believed to suck until one year old. They reach their full growth in about from three to five years. They are covered with a coarse hair of a mixed, gray, yellow, and brown color, (mostly gray upon the head, neck, and belly,) until six months old, when this is gradually replaced by a black fur. The mother, when swimming, carries her pups

between her paws, and sleeps on the water on her back, holding them in the same manner. The food of the sea-otter consists of shell-fish, such as the ray or clam, crabs, and sea-urchins, and probably kelp. They obtain a shell-fish by diving, often in fifteen fathoms of water; and after bringing them to the surface, crush their shells between their claws and breast. They are often seen playing together, but never fighting; though when wounded it is almost impossible to catch them with the hands, as they bite severely and are so lithe and supple that it is difficult to prevent their doing so. Their flesh is eaten by the natives, and is considered better than that of the fur-seal, though inferior to the sea-lion's. They are strong, swift swimmers, swimming even against a gale of wind with considerable rapidity, and nearly always upon their backs, propelling themselves with their hind-legs. Their fur is considered equally good at all seasons; hence they are hunted throughout the entire year.

The method of taking them varies with the season and locality. In summer they are usually killed in the water with spears or caught in nets, and in winter are either shot while swimming in the surf or clubbed upon the rocks. They are very shy and keen of scent, which necessitates the greatest care on the part of the hunter while hunting them. They do not build fires or even light their pipes with the wind in a certain direction, and sometimes go without a fire for six weeks at a time in winter.

In taking the sea-otters with spears the hunters assemble with their baidarkies or skin-canoes in parties of fifty or more, each baidarkie carrying two men, one to paddle and the other to use the spear. They then go off shore sometimes twenty miles, and watch quietly for an otter to show his head above water, which he no sooner does than the men in the nearest baidarkies paddle swiftly toward him, shouting and throwing their spears. This frightens the animal, causing him to dive. As soon as he disappears the nearest baidarkie goes to the spot where he went down and remains there, while the others form a large circle about it and wait for him to re-appear. This he does in from fifteen to thirty minutes, usually inside the circle, and the foregoing operation is quickly repeated, so as not to give him time to recover his breath. This is kept up until the otter becomes so much exhausted and out of breath that he can only remain under water for a minute or two, and must finally come up near enough to one of the baidarkies to be easily speared. The skin belongs to the hunter whose spear is nearest the head. This method of hunting is common to the natives of all the islands, but the hunters of the island of Atka are the only ones who catch them in nets. The nets used are made of twine, usually about fourteen feet by eight, though sometimes as large as one hundred and twenty feet by ninety. They are spread on top of a bed of kelp, and the ends anchored with heavy stones. The otters at certain times go upon the kelp to sleep, and in moving about upon it become entangled in the meshes of the net and are then easily killed by the hunters. As many as six have been caught at one time in a single net. When caught in this way they do not struggle and try to break away, though it would seem an easy matter for so powerful an animal. But sea-lions sometimes get in the nets and break them all to pieces. The natives of Atka have always hunted this way, but those of the other islands have never done so. At the island of Laenack in the winter during a severe north west gale, especially if it occurs immediately after a southeaster, the surf is very heavy and the otters haul up on the rocks to get out of it. At such times, as soon as the gale begins to abate the hunters go out in their baidarkies, and by keeping to

the leeward are able to land upon the rocks, creep up to the otters and kill them with clubs. If care is used to make no noise and to kill the ones to leeward first, they are frequently able to take all of them. Seventy-eight were killed in one morning by three men a few years ago, and it is not unusual to get from ten to thirty. It is not very often, however, that these opportunities for clubbing them occur. They are also killed with fire-arms in winter from the shore while swimming in the surf and in summer from boats. The older hunters are very much opposed to this method of hunting, as they say it drives away the otter, and that being easier than spears the young men practice it and neglect to learn the use of the spear.

The value of the skins depends upon the length, fineness, and color of fur; those which have long, thick, fine fur, of a rich glossy, black color, tipped with silvery gray, are the most highly prized. Inferior ones have coarser fur and reddish-brown in color. Some have been taken with fur as coarse as the hair of the sea-lion, similar in color. Spotted and striped skins have also been found, but rarely.

The skins of pups less than one year old are unsalable, on account of their mixed color and lack of fur, but some of the finest are taken from those between one and three years of age.

Sea-otters are constantly becoming less numerous in the waters of Alaska Territory, from three causes: the killing of females and pups less than a year old, the incessant harassing caused by hunting them from year to year without intermission, and the use of fire-arms. About one-half the number killed each year are females, and one-sixth pups, too young to be of any value. The killing of females works a double injury, for, if they have young less than six months old, the killing of the mother causes the death of the pup.

It would contribute largely to the preservation of the sea-otter life if they were allowed to remain undisturbed, either for three or four months each year throughout the entire region frequented by them or for two or three years at a time in certain portions of it. Either plan would give them an opportunity to rest and breed. The use of fire-arms in hunting them should also be discontinued. Though simple in theory, it would be difficult in practice to afford this protection, as the extent and character of the sea-otter district, and the competition between both traders and hunters, would render the enforcement of any laws which might be made for the purpose no easy matter.

THE ISLANDS OF SAINT LAWRENCE AND SAINT MATTHEW.

These two large islands, lying in Bering's Sea are a part of the territory purchased from Russia by the United States. Though discovered and named by Bering in 1728-'41, and repeatedly visited since by explorers, traders, and whalers, so little had been put on record concerning them, that no correct idea could be formed of their character and value. Their comparative unimportance is probably the reason for this.

The larger of the two, Saint Lawrence, lies first south of Bering's Straits, in latitude (its southwest point) $63^{\circ} 23' N.$, and longitude $120^{\circ} 35' W.$ It is about ninety miles long, and has an average width of 15 miles. The surface is irregular and broken, consisting of hills connected by low, flat plains, which are but a few feet above the level of the sea. Both the ranges of hills and the low land extend entirely across the island from north to south; hence, when approached from either direction, the latter are not seen at first, and the land has the appearance

of being several separate islands. Captain Cook, who discovered it in 1778, was thus deceived, and as he did not sail near enough afterward to discover his mistake, gave the supposed group the name of Cleak's Islands. There are no harbors, but good anchorage can be found at several points, with from six to eleven fathoms of water, in light weather or when the wind is from the land. It is covered in summer with grass, moss, and flowers, and in places a creeping willow grows, but neither trees nor shrubs of any kind. There are several lagoons, and numerous fresh-water ponds, fed by small streams from the hills, are distributed over the plains. The greater part of the shore-line is a low sand-beach; but at the southwestern end of the island, and at several points on the northern shore, it rises into almost perpendicular cliffs, from one to three hundred feet high. Those at the southwestern end present a singular appearance when viewed from the water. The beating of the surf and the action of the frost have broken up and worn away the material of which they are composed, (talcose slate,) leaving needles or spires, some of them a hundred feet in height, standing out several yards from the cliff. Deep cracks or fissures, extending from top to bottom, have also been formed in the cliffs, which are filled from the water's edge with solid masses of snow, (although it was in the month of August we saw them,) beautifully colored in many places by bird-guano and reddish substance in the rock. The hills are composed principally of granite, and present everywhere rounded outlines, very different from the sharp edges and points seen on the volcanic islands to the southward. The island is inhabited by Esquimaux, who resemble closely those found on the midland between Bristol Bay and Holzebun Sound. They live in four widely-spread villages, situated near the extremities of the island. One of the men seen by us could speak a few words of English, and all could say "yes" and "tobacco;" but none of them understood Russian or Aleut, though their language seemed similar to that of the "Kodiac-Aleuts."

The total population is between 150 and 200 souls. The men are tall and straight, without hair upon their faces except a slight moustache and a few scattered hairs upon the chins of old men. They have black hair and eyes, and their complexion is of a very light copper color.

Their dress consists of a kind of a shirt, reaching half way to the knee, made in some cases of tanned reindeer-skin, and in others of bird-skins, (feathers outside.) It fits closely around the neck, and has a hood that can be drawn over the head, lined with the fur of dogs and foxes, or with bird-skins. It is confined at the waist by a belt, from which hang a sheath-knife and a skin tobacco-pouch. Their breeches are made of tanned hair-seal skin, fitting the legs closely, and tied at the ankle with leather strings. They wear on their feet a kind of a moccasin made of seal-skin, with a sole of walrus-hide. The dress of the women is somewhat different. Their upper garment is made of the intestines of the walrus, neatly sewed together, and is similar in shape to that of the men, but longer, and worn without a belt. Beneath this they wear short drawers, reaching only to the knee, made of tanned seal-skins. Instead of moccasins they wear a sort of boot, the legs of which are made of either the throat or intestines of the walrus, and the sole of walrus-hide. Most of the men shave the crown of their heads, leaving only a rim of their hair, about an inch wide, entirely around the head. The women do not cut their hair, but part it in the middle, and wear it in two braids with strings of beads intermixed. Their foreheads, cheeks, chins, and arms are tattooed in various devices with a light blue pigment of some kind, and the ears of some have little notches cut in them. None of the

men are tattooed, but many wear little strings of beads in their ears. Their countenances are bright and rather intelligent, and both men and women are lively and talkative. Their habitations are of two kinds, being designed for summer and winter occupation. The summer houses are portable, and are evidently shifted from place to place. They are about fifteen feet square and six feet high, and consist of light framework of wood covered entirely, sides, ends, and roof, with dried walrus-skins. The roofs have a very low pitch, and slope slightly to the rear. The interior of one which we entered was divided into three nearly equal spaces, by logs of drift-wood laid upon the ground in two parallel lines. The two outer ones were covered with skins and used for sleeping-places. There was a fire built between several large stones, burning near the center of the house, about which were their cooking-utensils, consisting of two sheet-iron kettles and several wooden bowls. The latter were used for boiling water by throwing into them heated stones. They had also platters and smaller bowls neatly made of wood. Hanging about, in various parts of the hut, were reindeer and hair-seal skins, skins of wild geese and ducks, walrus and whale meat, bladders of oil, articles of clothing, and numbers of smoked fish; also, their weapons, which are long wooden spears, with coarse iron points, bows and arrows, knives, and a few smooth-bore muskets. They seemed to have but a small supply of ammunition for the latter, as they used small stones for bullets, though they had a few buckshot. Their only tools are their knives and small adzes made both of walrus-ivory and iron. Yet they make the frames of their boats and wooden vessels with great nicety. There were fourteen people living in this house, five men, six women, and three children. They seemed hospitably disposed, inviting us to enter their house, and offering us boiled fish and whale's meat. Their winter house, which was near the other, was built under ground, (the roof only appearing above the surface,) and showed great attention to comfort in its construction. It was rather larger, and square in form, with a dome-shaped roof. The sides were walled with wood, and had a raised bunk extending around three of them. The floors were also of wood. The roof was thickly covered with earth and turf, except a small round hole in the center, left open to supply air, light, and a passage for the smoke, but which could be closed by a wooden shutter on the inside. The entrance to the house was through a square hole in the ground at a distance of several yards from the house, but connected with it by a narrow underground passage. This house contained the greater part of their possessions, consisting of sleds, snow-shoes, boat-frames, paddles, fish-spears, and larger ones for killing the walrus and whale; household utensils, walrus-tusks, strung together with pieces of hide, and various toys evidently made for the amusement of the children. The sleds were made of wood, with short, solid runners, shod with bone, and all their parts were lashed together with strips of walrus-hide. The snow-shoes consist of an oval form of wood about two feet by eight inches, with strips of hide stretched across. Near the winter house were *caches* of oil and walrus-meat, doubtless intended for a supply of food for the coming winter. Their boats are from twenty to thirty feet long, sharp at both ends, and from three to four feet wide across the gunwale. The frames are made of wood without nail or pin, but neatly and firmly fastened with lashings of whale-bone; over them walrus-skins, cut to the proper shape and sewed together with a water-tight seam, are stretched smoothly and lashed to the gunwale with strips of hide. They are propelled both by paddles and oars, and a small sail is hoisted when running before the wind.

The people were anxious to trade for tobacco, needles, guns, and ammunition, offering in exchange walrus ivory, hair-seal skins, articles of their clothing, oil, and whalebone; they all begged for tobacco, but did not seem to know or care about spirits. Their principal trade is with the natives of the neighboring Asiatic coast, distant only sixty miles from the western end of Saint Lawrence, who supply them with reindeer, marmot, and other skins, in return for boats, frames, and other wooden articles. There is no wood growing upon the island, but an abundance of drift-wood from the river Yukon is deposited along its eastern and southern shores. The only animals seen by us upon the island, beside the dogs belonging to the natives, were walruses, blue foxes, and lemmings, though polar bears must sometimes come from the Arctic, on the ice, as we saw several of their skulls up near a village. Hair-seals are found about the island, but neither fur-seals nor sea-lions were seen, or anything indicating that they ever come there. Water-fowls of many different species and in great numbers frequent it in summer, and are caught by the natives in large nets made of strips of walrus hide. These are stretched on poles at points most favorable for catching the birds, which, in flying about, strike against the nets and become entangled in their meshes.

Trout are found in the streams, and a species of white-fish in the ponds.

At best it is a most barren and most unprofitable piece of land. It is probably never entirely free from snow, for though the winter of 1873-'74 was unusually mild, and the spring an early one, yet there was much snow upon the hills in August; and a northerly wind reduced the temperature to 34° + Fahrenheit. It is surrounded by ice from October till June, and in the summer months the dense fogs which prevail most of the time render it difficult to approach. There is a group of three small islands called "Poonook," lying about six miles southeast from the southeastern point of the eastern end of Saint Lawrence, which are easily distinguished by two small cone-shaped hills upon the largest. There was a winter house upon that island, not occupied at the time, though the effects of the natives were in it, and there were several *caches* of oil near by.

The Russian chart of the island is incorrect, both in the shore-line and position of reefs. I respectfully submit with this report a chart, in which such errors are corrected, as far as was possible, and giving some additional surroundings and hydrographic information.

SAINT MATTHEW'S ISLAND.

About two hundred miles south-southwest from Saint Lawrence is the island of Saint Matthew, which is much smaller, and uninhabited. Bering discovered it in his voyage to the American coast, 1741, and thirty-seven years later it was rediscovered by Cook, who gave it the name of Gore's Island, but the name it now bears, given by Bering, has been retained. Its greatest length, which is from southeast to northwest, is _____ miles, its width from one-half to four miles, and its area _____ square miles. Its northern shore is nearly straight, except at the northwestern end, which curves to the northward, but the southern is indented by numerous small bays and coves. Nearly two-thirds of its shore-line consist of rocky cliffs, which rise almost perpendicularly from the sea, in heights varying from fifty to sixteen hundred feet, and the remainder of low gravel-beach. The surface of the island is divided in about the same proportion into broken and hilly sections, connected by low, level

plains. The southeastern end terminates in three converging ridges, which, on the land side, slope gradually to the plains, but to seaward rise abruptly from the water, forming a continuous wall of solid rock from three to fifteen hundred feet high, to which Cook gave the name of Cape Upright. At a distance it appears to be separated from the rest of the island, but is joined to it by a neck of low land from one-half to three-quarters of a mile in width and about three miles long. On the south shore, about nine miles northwest from Cape Upright, there is a steep conical hill, 1,520 feet in height, and on the north shore, near the northwestern end, is a bluff 1,670 feet high. These three elevations are visible from nearly every part of the island, and are excellent landmarks. The action of moving ice in changing the surface of the land is beautifully shown in many parts of the island. Its vegetation comprises several species of grass, flowering plants and moss, wild wheat, and the creeping-willow. The rocks in many places are covered with a black luster of a leathery texture, and insipid. There are several large lagoons and a great number of small ponds of fresh water. Springs of clear, cold water burst out among the hills, and small streams, which either flow into the ponds or fall over the cliffs into the sea. These streams are filled with brook-trout from six to eighteen inches long, beautifully colored and spotted, but no fish were caught in the pond.

The only animals found were the white or polar bear, the walrus, the hair-seal, blue fox, and lemming. These bears were probably brought there on ice, but whether they go and come during the winter or remain upon the island at all times we had no means of determining. Whalers and others who have been upon or passed near it at different times say that they have always seen bears. They were quiet numerous, sixteen having been counted at one time from the deck of our vessel, and tracks made by them lead to shallow holes or beds, upon the tops of the highest hills, where it is probable they breed, as there are neither caves or holes of any kind upon the island. The females were accompanied by their cubs, from one to three in number, which were (in August) about one-third grown. They feed upon grass and roots, grazing along the banks of the stream like cattle; also upon the flesh of the walrus and hair-seal, and birds and their eggs. They were not at all fierce, and showed no disposition to attack, even though wounded, but in every instance ran at the approach of man. We shot a number of them, and found their flesh very good eating. The largest one, a full-grown male, measured eight feet from the end of the nose to the tail, and twenty-four inches around to fore-leg, after being skinned. We had no means of weighing him, but his weight could not have been much less than fifteen hundred pounds. They are good swimmers, swimming usually with their heads above water, though they can dive and swim for some distance entirely submerged. Neither fur-seal nor sea-lion breed upon the island or haul up along its shores, and there is nothing to indicate they have ever done so, but this is explained by the character of the beaches and the presence of so many bears. The cliffs are occupied in summer by millions of birds, shags, gulls, sea-pannotts, murries, chulskies, and in and about the pond were eider-ducks, Canada geese, plovers of several kinds, curlew, large blue cranes, and burgo-master gulls. There is a small island two and one-half miles north-northwest from the northwestern end of Saint Matthew, called "Hall Island," which is about six miles long and three wide. It is high and rocky, except at the southern end, where it terminates in a comparatively low point, and is a favorite resort of bears and walruses. About seven miles west-southwest from Cape Upright, at the opposite extremity of

Saint Matthew's, and three and one-half of the nearest point of its southern shore there is a lofty rock, three-quarters of a mile long and one-tenth wide, which rises perpendicularly from the sea to the height of 1,200 feet. Its upper edge is broken into numerous sharp points resembling pinnacles, from which circumstance it has been called "Pinnacle Island." It is doubtless a volcano, as a deep and wide fissure extends from top to bottom, in the direction of its length, the sides of which are blackened as by fire; and it is noted in the log of the United States revenue-cutter "Reliance" that, in July, 1870, while passing near Saint Matthew to the southward this rock was seen to be in a state of violent eruption.

The climate is similar to that of the Prybilov islands, though probably somewhat colder in winter.

I respectfully submit a chart of the island, drawn from a survey made by Mr. H. W. Elliott and myself, which gives its form, extent, and general topography.

This indenture in duplicate, made this 3d day of August, A. D. 1870, by and between William A. Richardson, Acting Secretary of the Treasury, in pursuance of an act of Congress approved July 1, 1870, entitled "An act to prevent the extermination of fur-bearing animals in Alaska," and the Alaska Commercial Company, a corporation duly established under the laws of the State of California, acting by John F. Miller, its president and agent, in accordance with a resolution at a meeting of its board of trustees, held January 31st, 1870, witnesseth:

That said Secretary hereby leases to the said Alaska Commercial Company, without power of transfer, for the term of twenty years from the 1st day of May, 1870, the right to engage in the business of taking fur-seals on the islands of Saint George and Saint Paul within the Territory of Alaska, and to send a vessel or vessels to said island for the skins of such seals.

And the said Alaska Commercial Company, in consideration of their right under this lease, hereby covenant and agree to pay, for each year during said term and in proportion during any part thereof, the sum of \$55,000 into the Treasury of the United States in accordance with the regulations of the Secretary to be made for this purpose under said act, which payment shall be secured by deposit of United States bonds to that amount, and also covenant and agree to pay annually into the Treasury of the United States, under said rules and regulations, internal-revenue tax or duty of \$2 each for seal-skin taken and shipped by them in accordance with the provisions of the act aforesaid, and also the sum of 60¢ cents for each fur-seal skin taken and shipped, and 55 cents per gallon for each gallon of oil obtained from said seals, for sale in said island or elsewhere, and sold by said company; and also covenant and agree, in accordance with said rules and regulations, to furnish, free of charge, the inhabitants of the islands of Saint Paul and Saint George annually during said term 25,000 dried salmon, 60 cords fire-wood, and a sufficient quantity of salt and a sufficient quantity of barrels for preserving the necessary supply of meat.

And the said lessees also hereby covenant and agree during the term aforesaid to maintain a school on each island, in accordance with said rules and regulations and suitable for the education of the natives of said islands, for a period of not less than eight months in each year.

And the said lessees further covenant and agree not to kill upon said island of Saint Paul more than seventy-five thousand fur-seals, and upon the island Saint George not more than twenty-five thousand fur-seals per annum; not to kill any fur-seal upon the islands aforesaid in any other month except the months of June, July, September, and October of each year; not to kill said seals at any time by the use of fire-arms or means tending to drive said seals from said islands; not to kill any female seals or seals under one year old; not to kill any seal in waters adjacent to said islands, or on the beach, cliffs, or rocks, where they haul up from the sea to remain.

And the said lessees further covenant and agree to abide by any restriction or limitation upon the right to kill seals under this lease that the act prescribes, or that the Secretary of the Treasury shall judge necessary for the preservation of such seals.

And the said lessees hereby agree that they will not in any way sell, transfer, or assign this lease, and that any transfer, sale, or assignment of the same shall be void and of no effect.

And the said lessees further agree to furnish to the several masters of the vessels employed by them certified copies of this lease, to be presented to the Government revenue-officers for the time being in charge of said islands, as the authority of said lessees for the landing and taking of said skins.

And the said lessees further covenant and agree that they or their agents shall not keep, sell, furnish, give, or dispose of any distilled spirituous liquors on either of said islands to any of the natives thereof, such person not being a physician and furnishing the same for use as medicine.

And the said lessees further covenant and agree that this lease is accepted, subject to all needful rules and regulations which shall at any time or times hereafter be made by the Secretary of the Treasury for the collection and payment of the rental herein agreed to be paid by said lessees for the comfort, maintenance, education, and protection of the natives of said islands, and for carrying into effect all the provisions of the act aforesaid, and will abide by and conform to said rules and regulations.

And the said lessees, accepting this lease with a full knowledge of the provisions of the aforesaid act of Congress, further covenant and agree that they will fulfill all the provisions, requirements, and limitations of said act, whether herein specifically set out or not.

In witness whereof the parties aforesaid have hereunto set their hands and seals the day and year above written.

WILLIAM A. RICHARDSON, [SEAL.]
Acting Secretary of the Treasury.

Executed in presence of—
J. H. SAVILLE.

ALASKA COMMERCIAL COMPANY,
By JOHN F. MILLER, President. [SEAL.]

In accordance with the provisions of "An act to prevent the extermination of fur-bearing animals in Alaska," approved July 1, 1870, and considering the fact that one-half of the present season for killing fur-seals has already expired before the making of a lease as therein authorized and required, and that the killing, during the remainder of the season, of the full number of fur-seals limited by said act, would tend to the extermination of the fur-bearing animals, and that further restrictions and limitations for this year have become necessary for the preservation of such seals, the right of killing fur-seals on the islands of Saint Paul and Saint George in said Alaska, during the present year, A. D. 1870, is further restricted and limited as follows:

First. The number of fur-seals which may be killed for their skins during the year 1870, upon the island of Saint Paul is hereby limited and restricted to thirty-seven thousand five hundred, (37,500.)

Second. The number of fur-seals which may be killed for their skins, during the year of 1870, upon the island of Saint George is hereby limited and restricted to twelve thousand five hundred, (12,500.)

And the rent of fifty-five thousand dollars (55,000) reserved to the Government in the lease under said act to the "Alaska Commercial Company," bearing date August 3d, 1870, is proportionately reduced for the first year of said lease, to wit, twenty-seven thousand five hundred dollars, (\$27,500,) without otherwise affecting any agreement of covenant therein made on the part of said company, August 9th, 1870.

WILLIAM A. RICHARDSON,
Acting Secretary of the Treasury.

Whereas by a certain indenture made August third, eighteen hundred and seventy, between William A. Richardson, then Acting Secretary of the Treasury, and the "Alaska Commercial Company," a corporation duly established under the laws of the State of California, it was covenanted and agreed as follows, to wit:

"And the said lessees further covenant and agree not to kill upon said island of Saint Paul more than seventy-five thousand fur-seals, and upon the island of Saint George not more than twenty-five thousand fur-seals per annum; not to kill any fur-seals upon the islands aforesaid in any other month except the months of June, July, September, and October of each year; not to kill such seals at any time by the use of fire-arms or other means tending to drive the seals from said islands; not to kill any female seal or any seals less than one year old; not to kill any seals in the waters adjacent to said islands, or on the beaches, cliffs or rocks, where they haul up from the sea to remain."

Now this indenture, made this twenty-fifth day of March, eighteen hundred and seventy-four, by and between William A. Richardson, Secretary of the Treasury, in pursuance of an act of Congress, approved March 24, 1874, and entitled "An act to amend an act to prevent the extermination of fur-bearing animals in Alaska," approved July first, eighteen hundred and seventy, and the said Alaska Commercial Company, lessees in said indenture of August third, eighteen hundred and seventy, acting by John F. Miller, its president and agent, in accordance with a resolution of said corporation duly adopted at a meeting of the board of trustees held January 31st, A. D. 1870:

Witnesseth, that the parties hereto do hereby mutually agree to rescind and annul, from and after the ratification hereof, the within-recited covenant in said indenture of August third, eighteen hundred and seventy, and in place thereof the said Alaska Commercial Company, lessees, as aforesaid, do hereby covenant and agree not to kill upon the island of Saint Paul more than ninety thousand fur-seals, and upon the island of Saint George not more than ten thousand fur-seals per annum; not to kill any fur-seals upon the island aforesaid in any other months except the months of June, July, August, (from the first to the fifteenth of said month,) September, and October of each year; not to kill such seals at any time by the use of fire-arms or other means tending to drive the seals from said islands; not to kill any female seals or any seals less than one year old; not to kill any seals in the waters adjacent to said islands, or on the beaches, cliffs, or rocks where they haul up from the sea to remain.

And the said parties hereto, by virtue of the act of Congress herein referred to, hereby agree that the covenant set forth in said indenture of August 3d, 1870, and herein recited, shall, from and after the ratification of this indenture, be revoked, rescinded, and the covenant hereby entered into shall be and remain in force as the covenant of the parties hereto in this regard from and after the ratification hereof during the remainder of said lease of August third, eighteen hundred and seventy.

In Witness whereof the said parties have hereto set their hands and seals the day and year above written.

[L. S. TREASURY.]

WILLIAM A. RICHARDSON,
Secretary of the Treasury.

[L. S. ALASKA COMMERCIAL COMPANY.]

LEWIS GERSTLE,
*Vice-President, Acting President
Alaska Commercial Company.*

We, the obligors in a certain bond, dated August 3d, 1870, given in accordance with the provisions of an act of Congress, approved July 1st, 1870, entitled "An act to prevent the extermination of fur-bearing seals in Alaska," hereby consent to the within change made in a lease given by the Secretary of the Treasury to the Alaska Commercial Company under said act, dated August 3d, 1870, and agree that the said change shall not discharge us from any liability under said bond.

Witness our hands and seals this twenty-fifth of March, eighteen hundred and seventy-four.

JOHN SANOTT,
LEWIS GERSTLE.