

21.—REPORT OF INVESTIGATIONS AT NEAH BAY, WASH., RESPECTING THE HABITS OF FUR SEALS OF THAT VICINITY, AND TO ARRANGE FOR PROCURING SPECIMENS OF SKELETONS OF CETACEA.

By JAMES G. SWAN.

I left Port Townsend, Wash., on the 26th of March, 1883, for Neah Bay, at the entrance of the Strait of Fuca; and arrived there the next morning, the distance being about one hundred miles. My object was to make arrangements for procuring skeletons of marine mammals, such as whales, orca or killer, porpoises, etc., and to study as far as practicable the habits of the fur seals of Cape Flattery, in order to ascertain in what respect, if any, they differ from the fur seals of the Pribloff Islands, Alaska.

I had been informed that the Indians had towed the carcass of a large sulphur-bottom whale, *Sibbaldius sulfureus* Cope, into the mouth of a small stream, a few miles east of Neah Bay, where it had grounded at high water, and at the lowest run of tides was entirely exposed.

The Indians had removed the blubber and flesh and had left the bones, but had cut the lower jaw in pieces to extract the oil, and had injured the skull so that the skeleton is not perfect. The weather being boisterous, and the tides not running low in the daytime, I did not have opportunity to examine the bones, but was assured by the Indians that the salt water and marine animals had cleaned them so that they are perfectly white—a statement of which I took advantage by pointing out to the Indians how easily they can clean the skeleton of an orca, by towing the body into some rocky cove, where it would not be buried in sand, and leaving it for a few months in the salt water. As the Makah Indians kill the orca during the summer months, particularly in the vicinity of Flattery Rocks, I think I may be able to secure a good specimen this summer.

The sealing schooners being all in port I took the opportunity to ask questions of both white men and Indians, and have reduced their answers to writing, as nearly as practicable in the language used by each person.

March 28. Went to the trading store of William Gallick to make inquiry about the habits of fur seals. Mr. E. Gallick, trader, says: "I have been engaged in trading here for fur seal skins for about six years. It is the general impression and belief among the sealers, both white men and Indians, that the fur seals do have pups in the ocean. Some persons say they go north to the Pribloff Islands, but others think these seals come from the south and do not go into the Bering Sea at all. I have shipped fur seal skins to London where they brought a better price than those from the Pribloff Islands; the fur is longer on the Cape Flattery seals and of better color. I have no means of information where

these seals have pups, but I do know that every season, towards the close, some years in June and in other years July and August, there are plenty of young pup seals taken with their mothers. The Indians invariably kill the pups when they can, as their bleating cries alarm the older seals, who will keep out of the way of the hunters. Young seals taken alive from their mothers are a matter of every day occurrence in June and July. These young seals are strong and lively, and will swim as soon as taken from out of their mothers. I had one brought to me last summer by one of our sealing schooners. I fed it with milk from a nurse bottle, and it grew finely. I kept it in the yard, and it would swim round in a tub of water, and I used to take it to have a swim in the bay. It was very tame, but one day it bit me severely and I told an Indian to kill it."

March 29. I went to the house of Captain John, an old chief, now blind, and met there *Quistoh*, or *Kwistoh*, a chief of the Nittinat Indians on west coast of Vancouver Island, B. C., and Cedakanim, a chief of the Clioquot Indians, northwest of Barclay Sound, B. C.

Captain John says: "The fur seals have their young ones in the salt-water, but I don't know where. The hair seals (*Karschowe*) have their young ones in the caves about Cape Flattery, but the fur seal (*Kaithladoos*) somewhere on the ocean. The Indians think they have them on the kelp beds, like the sea otter."

Kwistoh says: "Many years ago, my father and some other Nittinats were blown off to sea in their canoes; they went a great way off, a great way toward the setting sun. It was warm weather, about your 4th of July, I think; they saw many fur seals; the sea was full of them, and they had their little pups with them, and the little ones made so much noise that the Indians could not kill any of the big ones. We all think the fur seal (*Kaithladoos*) has its young ones born in the water."

Cedakanim says: "We think the fur seal has its young ones in the ocean, but I don't know where. I know the old seals by the color of their whiskers, and I know the last year's pups, and I know the little pups, which come with their mothers, which are too small to be good fur. Where do these little seals come from? I don't know, but I believe, as all the Indians do, that they are born in the water or among the kelp."

Peter, chief of Makah Indian police, says: "The fur seals all come from the south. In the spring they are plenty, but when the hot weather comes they go off west; but they do not all go, because fur seal can be seen all the time along the coast, but they are shy, and we don't hunt them. I don't know where they have their young ones, but there are plenty of little seals here every summer."

March 30. Youaithl, or old doctor Makah, residing at Neah Bay, says: "We all think the *Kaithladoos* (fur seal) has young ones in the water. I have killed many fur seals with young ones in them, just ready to be born, but they were no good, and I generally knocked them on the head,

but I have thrown plenty overboard, and they always swim as soon as taken from their mothers, when they are ready to be born, say about June or 4th of July. The hair seals (*Karschowe*) have their young ones in the caves about Cape Flattery. The Indians go in the caves with torches and clubs, and kill the seals. We eat the meat and use the skins for buoys (*Dó-ko-kuptl*), and make oil out of the fat. The fur seal (*Kaithladoos*) don't go in the caves, they have their young ones in the water or on the kelp, like the sea otters (*Tejuck*). We think the fur seals come here from California."

March 30. *Ko-ló-whad*, or Billy Buster, says: "I have been to Alaska, on schooners, hunting sea otter. I have been to Saint Paul's Island and seen the fur seals on the land. They are different from the seals here, for they have their young ones on the land, and the fur seals of the coast have their young ones in the water. I have seen them in August off in the ocean, I think one hundred miles southwest of Cape Flattery, lots of them with their little ones playing around them, but they are very shy then, and the young ones make such a noise that canoes can't get near them. It is about the time the seals have their young that the seal fishery at the cape is stopped. I am quite sure that these fur seals act different from those on Saint Paul's. I think they come from California, and I don't believe they go to Saint Paul's Island. The Indians all say that the fur seals have young ones in the water like sea otter do."

This last Indian I have known personally many years. He speaks good English, has been several voyages on vessels for sea otters, has been to the Pribloff Islands, Bering Sea, Okhotsk, and the coast of Japan, and is a good otter hunter, as well as seal hunter, is intelligent, and well informed about the habits of marine animals.

April 2. Capt. James Dalgardno, of sealing schooner *Mary Taylor*, says: "Little seals are very plenty towards the close of the season, which varies. Some years the seals leave about the 20th of June, other seasons not till the last of July. But the fur seal is plenty about 100 miles off the cape in August. I have seen hundreds of pups cut out of their mothers apparently just ready to be born; they would scramble around on deck and make a cry like new-born lambs. I have thrown lots of them overboard, and they invariably swim as soon as they get into the water; it is all bosh about pup-seals sinking like a stone. If the seal pups at Saint Paul's Island can't swim as soon as they are born they must have different habits from the seals here, because I have seen so many of them swimming after they had been taken alive from their mothers' wombs. Every sealer, both white men and Indians, know about seal pups as well as I do, and they know that my statement is correct."

April 11. After my return to Port Townsend, one of the sailing schooners, the *Champion*, Capt. E. H. McAlmond, came up from Cape Flattery, and, in an interview in my office this day, Captain McAlmond says: "In the latter part of June, 1882, while cruising 40 or 50 miles

off Cape Flattery, about southwest, I saw a thick bed of kelp about which fur seals were playing. I noticed one in particular, a female, on this bed of kelp. Her actions indicated that she was about to give birth to a pup, as she paid no attention to us, but kept moving about as if she was making a bed. After watching her a while I sent a canoe, and the Indian killed the seal and brought it on board. On opening it the young pup was taken out alive and it traveled about the deck, raising itself on its fore flippers and making a bleating cry. It was perfectly formed and there was every evidence from the appearance of both the mother and the maturity of the pup that it would have been born on that bed of kelp in a very short time if we had not disturbed the mother. The Indians carried the pup ashore, where I saw it alive several days after. I tried to buy it, but they refused to sell. I have no doubt that if this pup had been properly fed and cared for that it would have lived to have grown up to maturity. I have had many years' experience in the sealing business at Cape Flattery, and every season at its close the young pups are plenty. I think, as the Indians do, that these pups are born in the water or on kelp beds. My opinion is that the fur seal of the cape come from Lower California, and that they do not go to the Pribloff Islands. I think their habits are different from the fur seals of Saint Paul's."

The following extracts are from letters to me from Alexander C. Anderson, esq., inspector of fisheries, British Columbia :

"I note what you say about fur seals. It is very desirable that the discrepancy between the statement of Mr. Elliott, and the accounts of local observers should be reconciled. Mr. Elliott is very dogmatic in his statements, and certainly treats your remarks with scant courtesy. I hope you will renew the subject and discuss it at large from our local point of view. The true solution will, probably, be as you suggest—that our seals are of the southern variety and quite different in habits from the northern species. Mr. Elliott, however, argues under the assumption that our seals are only a detachment from the northern herds, and dovetailing all his observations to correspond.

"VICTORIA, BRITISH COLUMBIA, *June 24, 1882.*"

"I have not yet procured the information I desired about the fur seals, but will attend to it as soon as opportunity serves, and will let you know the result. I think everything will appear to sustain your opinion.

"VICTORIA, B. C., *August 24, 1882.*"

"I have spoken with Captain Warren and Captain Spring, both largely engaged in the seal trade, concerning the pupping of seals. The former of the two appeared to be reticent, and I do not think has been a close observer, so far as the natural history of the seal is concerned. He could tell little or nothing to settle the pup question. Captain

Spring, a very intelligent man, assures me that he has seen the young taken from the womb frequently in a very advanced state, and that on one occasion he witnessed the taking of a live young one from the womb of a mother seal killed, evidently, within a few hours of parturition. This pup survived about 24 hours, being kept on board in a tub of water wherein it appeared to swim quite naturally. He is convinced that under natural process this pup would have been born within 24 hours of the time when the mother was killed, and is quite incredulous as to the assertion that if born at sea it must sink, as has been asserted.

"VICTORIA, B. C., September 15, 1882."

Port Townsend, April, 22, 1883. Capt. Charles Willoughby, an old sealer and fisherman, and recently United States Indian agent at Neah Bay, says: "The fur-seal pups are very common at Neah Bay every season. Last summer, July, 1882, 'Young Sial,' a Makah Indian, killed a female seal and brought it ashore in his canoe. He opened it in the canoe and took out a live pup which, I think, from its appearance, would have been born in a very few hours. It was very lively, and 'Sial' tied a string to one of its flippers and threw it overboard, where it swam round in a playful manner. Sial took the end of the string ashore, where his boy Luke, one of the school-boys, held it. I saw Luke with four of these fur seal pups with strings tied to them, playing just outside the surf. The assertion that they will sink is all nonsense; every Indian and every white man who has lived at Cape Flattery knows that fur-seal pups will swim as soon as they are born. I have seen fur seals hauled out on the Farallones where they had pups. I put one of those pups into the surf, but it did not live; the water was all foam and it did not have a good chance. I think the fur seals about Cape Flattery come from Lower California; their habits are different from the seals of the Pribloff Islands, and they have better fur. I was Indian agent at Neah Bay over four years, and I have had ample opportunity of observation, and it is a common sight every season to see boys have fur-seal pups, with strings tied to them, swimming in the bay just outside the breakers or in the brook at the agency."

This statement of Captain Willoughby about Indian boys tying strings to fur-seal pups and letting them swim in the brook and bay I can corroborate, having, during a period of sixteen years, observed the same thing myself frequently every sealing season.

April 22. Mr. Henry Landes, formerly trader at Neah Bay and dealer in furs in connection with the Alaska Commercial Company, and now president of the First National Bank in Port Townsend says: "I have traded in furs many years, particularly seal and sea otter skins. I know the fur-seal skins of the Pribloff Islands, and the fur-seal skins from Cape Flattery; the Cape Flattery seal has the handsomest and longest fur, and used to bring the highest price in the London market, but the Indians of late (1883) have pulled and stretched the skins and

allowed so many to get what we call pinky that their value has decreased. The seal from Saint Paul's and Saint George's Islands being selected young males, are more uniform in color and match better when made into robes, but the fur is not as good as the Cape Flattery seal. I have never been interested to learn where the fur seals of the cape have their pups; but I do know that they are very common and plenty every season, but are of little or no commercial value. I think the fur seals of the cape come from Lower California, and I think they do not go to the Pribloff Islands. There is certainly a difference in the habits of the seals at each place which I should like to have explained."

Port Townsend, April 25, 1883. Mr. Marsilliot, the second engineer of the United States revenue steamer Wolcott, in an interview in my office this evening, says: "In 1881 the fur seals were very plenty in Puget Sound, and were taken as far inland as Hood's Canal. Sometime during the summer, I think about the middle of June, while the cutter was at anchor in Port Townsend Bay, one of the quartermasters, Mr. Quinn who is now master of the sealing schooner Teazer, saw a little fur-seal pup swimming alongside the vessel. He caught it and brought it on board where we kept it several weeks. It was about the size of a full-grown kitten when Quinn caught it. We fed it with milk, both fresh and canned, and it became a great pet with the men, who used to let it go overboard every day to swim, and it came back regularly to the gang-way ladder to be taken on board. On one occasion the cutter was absent a day, and when we returned to our anchorage the little pup came back and was taken on board again. It was very tame. At last, one day, when the seal was having a swim, the cutter was ordered off, and we were absent a week, on our return the seal was gone and we saw no more of it. The mother had probably been killed at the time the pup came alongside the vessel at first, as there were several fur seals shot in the bay and from the wharves. I have been to the Pribloff Islands and have had some observation of the habits of the fur seals there. I think the fur seals here and at the cape have different habits from the northern seals. I think these seals belong to the herds seen about the Gulf of Tehuantepec and along the Mexican coast. The fact of the pups swimming as soon as born—and even those that have been taken alive from their mothers before they were born, swimming readily—is too well substantiated to admit of doubt. The fact, which Mr. Elliott states so positively, that the pups of the fur seals of the Pribloff Islands will sink like a stone, is an evidence to my mind that these seals differ from those in Bering Sea."

The foregoing statements show the prevailing opinion of both white and Indian sealers, and white persons who have lived at Neah Bay and have had opportunity of frequent observation, that the fur seal of Cape Flattery come from Southern California, and have pups on the ocean and on the kelp beds, a statement which is supported by the testimony of white men and Indians, that they have seen the young fur-

seal pups taken from the womb of the mother, and swimming as soon as put in the water.

I could get plenty of other reliable persons to testify to the fact of the seal pups being plenty in June and July at Cape Flattery, and that they can swim as soon as born. Enough, however, has been given to substantiate that fact, but what remains to be shown is where these fur-seal pups are born. The very short time I was at Neah Bay was not sufficient to ascertain from personal knowledge or observation. I should have remained there through the season, or till the first of July, and have made frequent excursions on the sealing schooners in order to enable me to examine fully the question.

The supposition of Mr. Elliott, that all the fur seals of the North Pacific go to the Pribloff Islands, is of the same kind of popular assumption that all wild geese go north to breed in the Polar sea; and yet Colonel Goss, the great ornithologist of Kansas, found the nests and eggs of the wild geese in Wyoming Territory, and Mr. Elliott may ascertain, if he will, that all the fur seals in the Pacific Ocean north of the Equator do not visit the Pribloff Islands.

I do not consider this report other than as a preliminary brief, to be followed up and further investigated as occasion may offer. The only point I consider definitely settled is that the pups of the fur seal at Cape Flattery swim as soon as born, or even when taken alive from the womb of the mother seal; and in that respect they essentially differ in their habits from the fur seals of Alaska. This question regarding the natural history of the fur seals of Southern California is one of interest, and I hope it may be fully and thoroughly discussed.

PORT TOWNSEND, WASH., April 29, 1883.

32.—REPRODUCTION OF CALIFORNIA SALMON IN THE AQUARIUM OF TROCADERO.*

By Messrs. RAVERET-WATTEL and BARTET.

On the 25th of October, 1878, the aquarium of Trocadéro received from the National Society of Acclimation 1,000 eggs of the California salmon (*Oncorhynchus quinnat*), being a portion of a consignment made by Prof. Spencer F. Baird, Commissioner of Fisheries of the United States. These eggs, which were already at an advanced stage of development, hatched very soon. The fry were very vigorous, and their growth was quite rapid, at least from the period (January 1, 1879) at which the aquarium was transferred to the municipal administration and intrusted to the care of a superintendent of roads and plantations

* *Sur la reproduction du saumon de Californie, à l'aquarium du Trocadéro; par MM. Raveret-Wattel et Bartet.* In *Comptes rendus hebdomadaires des Séances de l'Académie des Sciences*. Tome XCVI, No. 12 (19 Mars, 1883). Paris, 1883, pp. 796-797.—Translated by MARSHALL McDONALD.