ALASKA EXCURSIONS.

During the excursion season of 1892 many thousand tourists visited Alaska. All were delighted—charmed; and all make the same report and tell the same story of the matchless grandeur of the trip, of the midnight sun, of the placid waters, of the aurora borealis, of the majestic mountains, of the inland seas, of the mighty glaciers, of the thundering iceberg plunging into the sea and floating off in its glory of inimitable splendor, of the wealth of fish, timber, and minerals, of the queer customs of the natives, of novelty and startling incidents that may well make the trip the object of a lifetime. There is nothing like it.

The Alaska Excursions having become *the* excursion of the continent, the Company, in order to meet the popular demand, have for the excursion season of 1893 placed excursion steamers on the route that for speed, elegance, and comfort are unexcelled by any vessels afloat. (See advertisement, Pacific Coast Steamship Company.)

This steamer (the Queen—3,000 tons) is 340 feet long, and has accommodations for 250 first-class passengers. She is supplied with all modern improvements and appliances, including the electric light in every stateroom, etc. The staterooms are unusually large and handsome. She makes two trips per month. Starting from Tacoma—connection made at Townsend with San Francisco steamers—she calls at Wrangel, Juneau, Glacier Bay, Sitka, and other points of interest.

The Company is also running during this season two other steamers —the fine iron propeller steamers Mexico and City of Topeka; both of these vessels are splendidly adapted to the Alaska trade, and have large and fine passenger accommodations. They call at a large number of places in Alaska, and take about twenty-two days to make the voyage from Port Townsend and return. For this reason many tourists prefer to take passage on one of these vessels rather than on the excursion steamer, which makes the trip in about twelve days, and therefore has to run at a high rate of speed and call at fewer places.

For further information in regard to tickets, call at the

TICKET OFFICE, 4 NEW MONTGOMERY STREET,

D. B. JACKSON, General Passenger and Ticket Agent,

GOODALL, PERKINS & CO., General Agents, 10 Market Street, San Francisco.

APPLETONS'

GUIDE-BOOK TO ALASKA

AND

THE NORTHWEST COAST

INCLUDING
THE SHORES OF WASHINGTON, BRITISH COLUMBIA,
SOUTHEASTERN ALASKA, THE ALEUTIAN AND
THE SEAL ISLANDS, THE BERING AND THE ARCTIC COASTS

BY

ELIZA RUHAMAH SCIDMORE

AUTHOR OF "ALASKA: ITS SOUTHERN COAST AND THE SITKAN ARCHIPELAGO," "JINRIKISHA DAYS IN JAPAN," AND "WESTWARD TO THE FAR EAST."

WITH MAPS AND MANY ILLUSTRATIONS

NEW YORK
D. APPLETON AND COMPANY
1893

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Or to D. McNICOLL, General Passenger Agent, MONTREAL.

PACIFIC COAST STEAMSHIP CO.

Steamers of this Company sail from BROADWAY WHARF, SAN FRANCISCO, for Ports in

MEXICO, CALIFORNIA, OREGON, WASHINGTON STATE, IDAHO TERRITORY, BRITISH COLUMBIA, and ALASKA,

AS FOLLOWS:

MEXICAN ROUTE.

Steamer NEWBERN sails from Broadway Wharf No. 1, for Ensenada (landing at the wharf, San José del Cabo, Mazatlan, La Paz, and Guaymas, Mexico), at 10 A. M. on the 1st of each month. Mail closes at 9 A. M. on the morning of sailing. No freight received later than noon on the day previous to sailing. Bills of Lading must be accompanied by Custom-House and Consular clearances. Freight for San José del Cabo must be prepaid.

CALIFORNIA SOUTHERN COAST ROUTE.

The Steamers CORONA and SANTA ROSA sail for Port Harford, San Luis Obispo, Santa Barbara, Redondo, San Pedro, Los Angeles, and San Diego, every fourth and fifth day at 11 A. M.

The Steamers LOS ANGELES and EUREKA sail for Santa Cruz, Monterey, San Simeon, Cayucos, Port Harford, San Luis Obispo, Gaviota, Santa Barbara, Ventura, Hueneme, San Pedro, Los Angeles, Newport, and Santa Ana, every fourth and fifth day at 8 A. M.

ALASKA ROUTE.

Steamships sail from Broadway Wharf No. 1, at 9 A. M., April and May, 15, 30; June and July 4, 14, 19, 29; August 3, 13, 18, 28, and every two weeks thereafter, due at Victoria A. M. and Port Townsend P. M. three days thereafter. Make a summer excursion to Alaska; it is the finest and cheapest in the world. Transfer to Alaska steamer at Port Townsend.

VICTORIA AND PUGET SOUND ROUTE,

connecting with Canadian and Northern Pacific Railroad Companies. Steamships WALLA WALLA, CITY OF PUEBLA, and UMATILLA, carrying Her Britannic Majesty's mails, will leave Broadway Wharf No. 1, San Francisco, every five days at 9 A. M., for Victoria, Port Townsend, Seattle, and Tacoma, connecting at Port Townsend, Washington, with steamers for Alaska as above, and with steamboats, etc., for Skagit River, and Cassiar Mines, Nanaimo, New Westminster, Yale, and all other important points.

PORTLAND, OREGON, ROUTE.

Steamships of the Union Pacific system (Pacific Division) and P. C. S. S. Co. will sail from Spear Street Wharf, San Francisco, at 10 A. M., for Astoria and Portland, Oregon, every four days. Leave Portland, Oregon, at 10 P. M., for Astoria and San Francisco every four days.

EUREKA AND HUMBOLDT BAY ROUTE.

Steamer POMONA sails from Broadway Wharf No. 1, San Francisco, every Wednesday, at 9 A. M., for Eureka, Arcata, and Hookton (Humboldt Bay). Returning, leaves Eureka Saturdays at high tide. Due in San Francisco Sunday, in forenoon.

RATES OF FARE,

which include meals and sleeping accommodations, are lower by this than by any other route. Through tickets sold to all the principal places on the coast. Stages and railroads make close connections with steamers for all the principal places in the interior.

Ticket Office, 4 NEW MONTGOMERY STREET.

D. B. JACKSON, General Passenger and Ticket Agent,

GOODALL, PERKINS & CO., Gen. Agents, 10 Market St., San Francisco.

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INTRODUCTION.

The Northwest Coast is the general term applied by last century explorers and diplomats to all that part of the continent of North America lying between the Columbia River and Yakutat Bay, or between its landmarks, Mts. Rainier and St. Elias. The State of Washington, the province of British Columbia, and the southeastern or Sitkan district of Alaska occupy each a third of this coast. The bulk of the Territory of Alaska lies beyond Mt. St. Elias. Its coast offers little of interest or attraction beyond the Aliaska Peninsula, and the interior is sparsely inhabited.

Southeastern Alaska is the only portion of the vast Territory now accessible to tourists and pleasure travellers, and the Alaska mail and excursion steamer routes include a tour through the archipelago fringing the Northwest Coast and sheltering an inside passage over a thousand miles in length.

The Coast Range presents a bold front to the o ean from the Columbia river northward, and the Columbian and Alexander Archipelagoes are half-submerged peaks and ranges—the veritable "Sea of Mountains." Glaciers gem all these Cordilleran slopes, and the tide-water glaciers at the head of Alaskan inlets are paralleled only in the strait of Magellan, in Iceland, Greenland, and polar regions. The scenery is sublime beyond description, and there is almost a monotony of such magnificence n the cruise along the Northwest Coast. The mountains are covered with the densest forests, all undisturbed game preserves, the waters teem with hundreds of varieties of fish, and the northern moors are the homes of great flocks of aquatic birds. The native people are the most interesting study of ethnologists, and totemism in a living and advanced stage may be studied on the spot. Settlements are few and far between, mining and fish-packing the chief industries.

The climate of the Northwest Coast is far milder than that of the Northeast Coast of the continent. The **Kuro Siwo**, the Japan or Gulf Stream of the Pacific, flowing northward from the Southern Ocean, follows the line of the Aleutian Islands, makes a great loop in the

Gulf of Alaska, and flows southward along the coast. It greatly modifies the climate, bends the isothermal lines northward, and makes climate and temperature depend upon distance from the warm Kuro Siwo rather than on distance from the equator. The high mountain ranges condense the soft, warm vapours accompanying the Japan Stream, and the annual precipitation is greater than on any other part of the continent. The rainfall averages from 80 to 140 in. along the coast, but the least mountain barrier, as with the Olympics on the Washington coast, reduces the precipitation to one half on the lee side.

Steamship lines conveying United States and Royal mails give frequent communication throughout the year with all the Northwest Coast and are availed of by pleasure travellers. They offer unknown delights of ocean travel, and from deck chairs tourists view near at hand the tide-water glaciers and the highest mountains of the continent, pursuing the placid channels of water-floored cañons for a fortnight with scarce a ripple encountered. As a yachting region it offers more than the Hebrides or the Norwegian coast.

RAIL AND STEAMER ROUTES TO THE NORTHWEST.

(*See Route Map, in pocket, last cover.*)

Puget Sound is the usual point of departure for Alaska, and is reached from the East by five great transcontinental railway lines: by the *Southern Pacific*, from Ogden or San Francisco *via* Sacramento and Mt. Shasta to Portland, and thence to Tacoma and Seattle; by the *Union Pacific*, from Omaha and Ogden direct to Portland, Tacoma, and Seattle; by the *Northern Pacific*, from St. Paul *via* the Yellowstone Park to Tacoma and Seattle; by the *Great Northern*, from Duluth, Winnipeg, or St. Paul to Everett on Puget Sound and Seattle; and by the *Canadian Pacific*, from Montreal *via* the Great Lakes, Winnipeg, and the Canadian National Park to Vancouver and thence to Victoria or Seattle. The excursion companies in Eastern cities usually choose different routes in going and returning, giving their patrons opportunity to visit in this way both the Yellowstone and the Canadian National Parks.

Alaska tourists reach Victoria and Puget Sound ports by sea by the steamers of the *Pacific Coast Steamship Company* (Goodall, Perkins & Co.), from San Francisco. This same company dispatches semi-monthly mail steamers from Tacoma to Sitka the year round. The Alaska mail steamers have accommodations for about 60 passen-

gers, take from 14 to 18 days for the voyage of 2,800 to 3,000 miles from Tacoma to Sitka and return, calling at Victoria, Nanaimo, Mary Island, Loring, Fort Wrangell, Juneau, Killisnoo, and at many canneries and out-of-the-way places to receive and deliver freight during the summer weeks. A day is given to the Muir Glacier in Glacier Bay in the tourist season. The excursion steamer *Queen*, of the P. C. S. S. Co., makes semi-monthly trips during June, July, and August each year. It is scheduled to make the tour from Tacoma and return in 12 days. It has accommodations for 250 passengers, carries almost no freight, is not bound by a mail contract, and arranges its course and movements to reach the places of interest at most convenient hours. It visits the Taku as well as the Muir Glacier. These steamers of U. S. register make no other stops in British Columbia after coaling at Nanaimo. Fare, $100 for the round trip from Tacoma.

The *Canadian Pacific Navigation Company*, of Victoria, dispatches semi-monthly mail steamers from Victoria to Fort Simpson and way ports the year round. When inducements are offered they visit the Queen Charlotte Islands, but do not cross the Alaska line. The C. P. N. Co. arrange for one or more excursions from Victoria to Sitka and return each summer, a steamer accommodatine from 130 to 150 passengers, visiting the larger Indian villages and settlements of the British Columbia coast, its principal fiords, and the chief points of interest in Alaska. Passengers cannot land in Alaska from ships of British register save at ports where U. S. customs officers are stationed. Fare, $95 for the round trip from either Victoria or Vancouver to Sitka and return.

The steamer accommodations by either line are first class in every respect—the excursion steamers, catering to an expensive class of pleasure travel, offering most luxuries and comforts. As all the voyage is in smooth, landlocked waters, save the short interval of Queen Charlotte Sound, sea-sickness is not to be anticipated by any one. In the nightless days of the northern summers little is lost by darkness.

Private steamers may be chartered at San Francisco, Tacoma, Seattle, or Victoria at rates varying from $200 to $500 per day. There are few pilots, however, able to take steamers the length of the coast, and sailing yachts are helpless in the narrow, draughty channels, swept by strong tidal currents, or on the open coast with its rocks, ledges, and inshore currents. Launches with sleeping accommodations

for 4 or 10 may be chartered for hunting and exploring cruises at Juneau, at the Treadwell mine on Douglas Island, and sometimes at Loring, Chilkat, and Killisnoo, at prices ranging from $20 to $40 per day, according to size and fuel used. Launches chartered for long cruises can meet the mail steamers at Mary Island or Fort Wrangel if desired. Those intending to camp or cruise in launches should take the greater part of their provisions and outfit from the Sound. All commodities are naturally dearer in the Alaska settlements. A few vegetables, with unlimited fish and game, may be had at any settlement; fresh beef at Juneau only. Indian canoes are rented from $2 per day upward, each oarsman paid by the day in addition.

Tourists make the usual preparation for an ocean voyage, carrying their own deck chairs, heavy wraps, and rugs. The warmest wraps are needed on cloudy and rainy days, and while the steamers lie off the tide-water glaciers. Every provision should be made for the frequent rains, although on many trips not a single rainy day is recorded. Rubber shoes, boots, and leggings, waterproof coats and cloaks, add much to the certain comfort and enjoyment of the voyage. Alpenstocks for the glacier may be rented from the porters. Spiked shoes, ice axes, and ropes are not needed.

United States money is current everywhere, and the Indians greatly prefer silver coin to gold or notes in any dealings with whites. All baggage of travellers is subject to a customs examination on crossing the boundary between Washington and British Columbia. The frequent communication with China causes extra vigilance by health officers at Victoria and Port Townsend for small-pox cases, and the traveller may be saved untold annoyance and delays if provided with a vaccination certificate before embarking. While cholera is present in Chinese ports every summer, its germs have never survived the long ocean voyage in the quarter century of steam communication between our Pacific coast and Asiatic ports.

The plan of this book follows as nearly as possible THE CANADIAN GUIDE BOOKS, Parts I and II. Names of places and objects of importance are printed in large-faced type or in *Italics*; the names of railway and steamship lines are printed in full once, and abbreviated by initial letters whenever repeated: Hudson's Bay Co. becomes H. B. Co., and the points of the compass are indicated by the initials N. for north, S. for south, etc.

THE GUIDE BOOK TO ALASKA.

THE PUGET SOUND COUNTRY.

THE first section of the Northwest Coast, including western Washington, is so fully described in Appletons' General Guide, that but few other references are needed for the Alaska tourist, who begins and ends his voyagings here.

Tacoma, the county seat of Pierce County, population 36,006 by census of 1890, is situated on a bluff 180 ft. high, overlooking Puyallup or Commencement Bay, as named by Commander Wilkes in 1841, who there commenced his surveys of the Sound. The first house was built in 1852. The general passenger station of the N. P. R. R. is on the edge of the bluff at the intersection of Pacific Ave. All baggage checked to "Tacoma" is left at this station, unless checked to "Tacoma Wharf," the branch station a mile below at the water's edge. Sound, Alaska, and ocean steamers depart from this wharf. Electric cars connect the two stations, and there is an excellent cab and omnibus system with a moderate tariff posted in each vehicle. *The Tacoma*, on the edge of the bluff and *The Tourist*, the million dollar hotel of the Tacoma Land Co. are the leading hotels—rates $3 per day and upward. Smaller hotels on the European plan, and lodging houses, are numerous, and restaurants are found on Pacific Ave. and on the numbered streets leading from it. The large hotels take on the character of watering-place resorts in the summer season, and the arrival and anticipated departure of Alaska steamers fill them to overflowing.

The steamers of the P. C. S. S. Co. leave Tacoma every five days for San Francisco and fortnightly for Alaska. The Puget Sound and Hawaiian Traffic Company dispatch a monthly steamer to Honolulu. The Northern Pacific Company dispatch a steamer monthly for Hong-Kong and Yokohoma. There is a daily steamer to Victoria, touching at the principal cities on the Sound, and almost hourly communication by boat and

train with Seattle 30 miles distant. Many excursions invite the Alaska tourist who has a few days at command. The great hop ranches around Puyallup may be visited by carriage, by trains of the N. P. R., and by the Lake Park Motor Co.'s trains. Puyallup Valley is one of the garden spots of the State, and in September the river banks are lined with the canoes and tents of the Indian hop-pickers, who come from the Columbia plains and even the Alaska islands. It is one of the points of departure for mountain-climbers who essay the ascent of the great peak of Mt. Rainier, now surrounded by a Government forest reserve.

The Pacific Forest Reserve and Mt. Rainier.

This park of 967,680 acres was created by proclamation of President Harrison, February 20, 1893. Forty-two townships of Pierce, Lewis, Yakima, and Kittetas Counties were withdrawn from entry to

1. Liberty Cap, 14,362. 2. Dome, 14,359. 3. South Peak. 4. Longmire Spgs. 5. Paradise Valley. 6. Gibraltar. 7. Eagle Cliff. * Crater.

protect the head waters of the Puyallup, Carbon, White, Natchez, Tieton, Nisqually, and Cowlitz Rivers which flow from the glaciers radiating from the summit of Mt. Rainier like the spokes of a wheel. The

park measures 36 miles from E. to W. and 42 miles from N. to S. There are trails and waggon roads to the points of interest on the W. and S. side.

Mt. Rainier (14,444 ft.) is the highest peak in the Cascade Range, chief in a group of volcanoes, and rises abruptly from the low forest lands covering the 55 miles between its base and Puget Sound. Vancouver saw it from Marrowstone Point, opposite Port Townsend, May 10, 1792, and named it for his friend Rear-Admiral Rainier, one of the Lords of the Admiralty. It was smoking splendidly when Fremont left the Columbia in 1842, the Pathfinder alluding to it as Regnier, and, with many, believing that it had been named for Lieutenant Regnier, of Marchand's expedition (1791).

The Puyallup Indians call the peak *Tah-ko-bah*, the Nisquallys *Tah-ho-mah*, the Duwamish *Ta-ko-bet*, all meaning the snowy or snow mountain. For years the local and landsman's name was Tacoma, navigators using the chart name of Rainier. The rivalry between the cities of Seattle and Tacoma made the mountain's name a subject of bitter strife, the N. P. Co. printing it as Tacoma in all maps and publications. In 1890 the U. S. Board of Geographic Names decided that Rainier must stand on all Government charts, maps, and publications, Vancouver's charts having been accepted and used as authority for a century.

The peak is a symmetrical pyramid, as viewed from Seattle; a double peak from Tacoma; and from Olympia or Yelm Prairie on the line of the N. P., south of Tacoma, it shows its three peaks in outline like Mt. Fairweather and Mt. St. Elias.

The first attempt to climb the great peak was made by Dr. William Frazer Tolmie, surgeon of the H. B. Co.'s Fort Nisqually, in 1833, and resulted in his reaching Tolmie Peak by way of Crater Lake on the N. W. slope. Lieutenant A. V. Kautz reached the South Peak in 1857; Messrs. P. B. Van Trump and Hazard Stevens reached the Dome or Crater Peak in August, 1870; and Messrs. A. D. Wilson and S. F. Emmons, U. S. Geological Survey, in October, 1870. At the close of 1892, 38 climbers were known to have reached the summit, all ascending by the Gibraltar Trail on the S. side, save Warner Fobes and two companions who climbed the ridge on the N. E. side by the White River Glacier, in 1884, and George Bayley and P. B. Van Trump on the W. side in 1892. One woman, Miss Fay Fuller, reached the summit August 10, 1890.

Eight days is the least time in which an experienced climber can make the round trip from either Seattle or Tacoma to the summit of Mt. Rainier and return. P. B. Van Trump, the veteran guide, lives at

Yelm Prairie; George Driver, guide, may be communicated with through *The Tacoma*, Tacoma; and Mr. E. C. Ingraham, the Seattle publisher, will advise any intending climbers who may appeal to him there. Eatonville (P. O.) is the point of real departure, and may be reached by daily stages or hacks from Puyallup, Roy, or Yelm Prairie stations on the N. P. R., either route involving a ride of 25 or 30 miles. The next stage is 18 miles to Kernahan's Palisade Farm in Succotash (Su-ho-tas, "black raspberry") Valley. A third start is made before sunrise, in order to ford the Rainier Fork of the Nisqually (6 miles beyond) before the melting ice and snow raise the glacial torrent.

Longmire's hot soda springs hotel is headquarters for campers and climbers, and offers plain shelter and comforts. A horse trail leads thence 4 miles to the foot of the Nisqually Glacier, the Nisqually River emerging from an ice cavern in its front. A switchback trail of 2 miles leads 1,200 ft. up the front of the Nisqually Bluff and ends in Paradise Valley (5,700 ft.), a park at the snow-line carpeted with wild flowers. Good climbers may leave their horses at the foot of the glacier, climb and cross the ice to Paradise Valley, which is 5 miles from the summit. It is one day's hard climb with creepers or lumbermen's "calks," over ice and snow to the foot of Gibraltar Rock (11,000 ft.), where the night is spent. An early start is made to cross the dangerous ledges on Gibraltar's face and cut steps up a steep ice cliff before the day's avalanches begin, and the twin craters with a common central rim upholding the snowy Dome or Crater Peak (14,444 ft.) may be reached before noon. Climbers usually aim to spend the night in the ice caves formed by the sulphur vent-holes in the crater. Food is warmed over steam jets, and with lights the ice caverns may be explored for hundreds of feet. The larger crater is three quarters of a mile in diameter, and both but vent-holes of a vaster cone of preglacial days. The Liberty Cap, Tacoma, or North Peak (14,000 ft.), the apparent summit seen from Tacoma, is 2 miles distant from South Peak, and the true or Crater Peak lies midway. The height, 14,444 ft., as given in Gannett's Dictionary of Altitudes, is the result of triangulations from a base-line on the Sound measured by Prof. George C. Davidson. Mr. A. D. Wilson, of the Northern Transcontinental Survey, gives 14,900 ft. as the result of over one hundred trigonometrical determinations from the E. side of the mountain.

A shorter and easier Rainier excursion may be made by the Bailey Willis trail from Wilkeson station on the N. P. R. to Observation Point

at the head of the Edmunds Glacier, named for the Hon. George F. Edmunds, of Vermont, acting Vice-President of the United States at the time of his visit, in 1883. The Point (10,000 ft.) commands as extensive a view as the summit save to S. E., and the black cliff 4,000 feet high rising immediately behind it may be distinguished from Seattle. Ladies have reached the point by horse and sled without walking. The Meadows, Crater Lake, Eagle Cliff, Lace Falls, Prospect Park, and the Bailey Willis, the Edmunds, and the Puyallup Glaciers feeding the one river, are objects of interest on that route. The view from Eagle Cliff which overhangs the Puyallup River 2,500 ft. below it, and commands a full outline of the snowy summit, is extolled as *the finest mountain view* on the Pacific coast by many Sierra and Alpine climbers. The glaciers of Mt. Rainier were first reported by Messrs. Wilson and Emmons, of the U. S. Geological Survey, in 1870, and mapped by Bailey Willis, of the Northern Transcontinental Survey, in 1883. The Cowlitz Glacier, on the S. side, is 12 miles long and from 1 to 3 miles wide, broken by several magnificent ice falls. No systematic explorations or thorough study of these glaciers have been made. All have an average motion of 12 inches a day in midsummer.

Original accounts of the earlier ascents of Mt. Rainier and descriptive articles have been published as follows: Emmons, S. F., Bulletin No. 4 of American Geological Society (N. Y.), session 1876–'77; Fobes, Warner, The West Shore Magazine, Seattle, September, 1885; Hendrickson, C. D., The American Magazine, London, November, 1887; Kautz, A. V., Overland Monthly Magazine, San Francisco, June, 1875; Muir, John, "Picturesque California," New York and San Francisco, part xviii.; Stevens, Hazard, Atlantic Monthly Magazine, Boston, November, 1876; Willis, Bailey, Columbia College (N. Y.) School of Mines Quarterly, January, 1887; Report of Tenth Census (1880), Washington.

The Alaska excursion steamers usually leave Tacoma at daylight, passengers going on board the night before. A few hours' stay are allowed at **Seattle**, which is fully described in Appletons' General Guide.

Seattle, population 42,837 by the census of 1890, the commercial rival of Tacoma, was named for the old Duwamish chief, and fronts on Elliot, originally Duwamish Bay. The stations from which the Northern Pacific, the Union Pacific, the Great Northern, the Columbia & Puget Sound, the Seattle & Northern, and the Seattle, Lake Shore & Eastern Ry. trains depart, are on the water front in close proximity

to Yesler's and Commercial Wharf, where Sound and ocean steamers land. Cabs and omnibuses have moderate tariff of charges. The *Rainier* and the *Denny*, rates $3 a day and upward, are the leading hotels. The ship's delay usually allows time for a ride by cable or electric cars to the heights around the harbour or to Lake Washington or to Lake Union, 2 miles distant.

Port Townsend, the "Key City of the Sound," population 4,558,* is the port of entry for the Puget Sound customs district, and point of departure of U. S. mails for Alaska. San Francisco passengers usually join the Alaska steamers at this port. Excursion steamers make short stops, but mail steamers receive and discharge the larger part of their cargo here, and often lie for 24 hours. The new Custom-House and Court-House on the edge of the bluff command fine views, and electric railways crossing the peninsula to the Fuca shore afford means of passing the waiting hours. There is a large modern hotel near the wharves of the Port Townsend & Southern Ry., which is under construction, and will connect the west shore towns with the other railway systems at Olympia. *Fort Townsend*, a two-company military post at the end of the bay, may be reached by 5-mile carriage-roads, or by small steamers which ply between the town and the Irondale blast-furnaces and Port Hadlock mill beyond. Small steamers run between Port Townsend, Port Angeles, Pysht, and Neah Bay on the Fuca shore. There is a large village of Makah Indians at Neah Bay, 4 miles E. of Cape Flattery. The women are the finest basket-weavers on the coast, and their gayly coloured wares may be bought at Port Townsend and Victoria.

Everette is the terminal point of the Great Northern Ry. from St. Paul. Its rail communications permit passengers to join Alaska steamers at Anacortes or Seattle. Everette's growth has been since 1890, and among its industries are ship-yards where whaleback freight and passenger steamers are built.

Anacortes, on Fidalgo Island, population 2,000, is 108 miles from Seattle, and terminus of the Pacific division (Portland, Seattle & Anacortes Line) of the N. P. R. There is a fine modern hotel, *The Anacortes*, in a pine grove adjoining the wharf. Alaska and San

* Through neglect to enlarge the city limits and include newly settled additions before the census of 1890, Port Townsend showed little increase of population in the decade, and Jefferson County was given credit for the great increase in inhabitants.

Francisco steamers of the P. C. S. S. Co. call regularly, and the Sound boats give daily communication with Seattle and Tacoma. Alaska steamers sometimes visit **Fairhaven**, population 4,000, and **Whatcom**, population 10,000, the two enterprising towns on Bellingham Bay.

All this upper end of the Sound is dominated by **Mt. Baker** (10,810 ft.), an extinct volcano, whose many native names—Pukhomis, Puksan, and Kulshan—all mean "the fire-mountain." Galiano and Valdes called it *Mt. Carmelo*. Vancouver saw it later from the strait of Fuca or New Dungeness, at first vaguely floating above the clouds, and then the whole slope of "the lofty mountain discovered in the afternoon by the third lieutenant, and in compliment to him called by me Mt. Baker," Monday, April 30, 1792. Baker drew all of Vancouver's charts.

The mountain has been in eruption many times in this century, by Indian tradition. There was an eruption in 1852, when a great body of lava flowed down the side of the mountain, and showed as a black mass amid the snow all winter. There are no trails on its slopes, and it is much more difficult of ascent than Mt. Ranier. It was first ascended from the W. or Lummi side by Edmund T. Coleman, an English landscape artist and Alpine climber, in August, 1868.* Mr. E. S. Ingraham and a party of six left the railroad at Silver Lake Station, followed the Nooksack cañon, and made the last climb on the W. side. They found the summit, July 3, 1891, an elliptical plateau, a third of a mile in length, probably a snow-filled crater. A small crater, 1,000 ft. below, was filled with sulphur crystals and sulphurous gas, and steam blew in clouds.

The group of **Washington Islands** lying between Bellingham Bay and the strait of Fuca constitute *Island County*, with **Friday Harbour** on **San Juan Island** as the county seat. There are ranches and fruit farms on all these islands, and this maze of water-ways at the boundary line offer great inducement in the way of protection to smugglers of opium and Chinese. The smugglers own swift schooners and launches, and easily elude the one slow revenue cutter assigned to the patrol of the sound.

San Juan Island, 14 miles long and 6 or 7 miles wide, contains vast deposits of limestone. A half million barrels of lime are shipped from the ovens at *Roches Harbour* each year. It is shipped to all parts

* See Mountaineering on the Pacific, Harper's Monthly, November, 1869.

of the coast, and several vessels loaded with cargoes of lime have been fired by a leak or a dashing wave.

THE INTERNATIONAL BOUNDARY LINE.

San Juan Island nearly caused a war between Great Britain and the United States, both countries claiming ownership, as the Oregon Treaty, June 15, 1846, did not specify whether the boundary line should pass through Canal de Haro or Rosario strait. Sir James Douglass and Governor Isaac Stevens both claimed jurisdiction. The Sheriff of Whatcom County sold H. B. Co. sheep for taxes. An American citizen shot a British pig, for whose loss $100 was no equivalent to its owner; and sentiment waxed bitter. General Harney hurried troops off from Steilacoom, and established a military post on one end of the island in 1859, just as the British and American boundary commissioners had begun their work of peaceable settlement. A British war ship remained on guard; the garrison was increased; General Scott came from Washington, and offered joint occupation by both Governments until the boundary line should be decided. Until 1871 a company of United States soldiers held the southern end of the island, and an equal number of British blue jackets the northern point. There was amicable intercourse, the two garrisons entering into athletic contests with ardour; and succeeding the Treaty of Washington, 1871, the Emperor of Germany, as arbitrator, decided that de Haro was the main channel and the water boundary. The British withdrew in November, 1872, replanting gardens in order to leave San Juan exactly as they found it. It commands the straits, and its thousand-feet-high hill affords a site for the most effective battery in the world. The diplomats split finest hairs in their arguments. One strait was said to separate the continent from Vancouver, the other to separate Vancouver from the continent; and Lord John Russell said: "San Juan is a defensive position if in the hands of Great Britain; it is an aggressive position if in the hands of the United States. The United States may fairly be called upon to renounce aggression; but Great Britain can hardly be expected to abandon defence."

The Strait of Juan de Fuca, leading to the Pacific, is a magnificent highway, 83 miles in length and 12 miles in width, but broadening into a considerable sound at the eastern end. It is close walled on the United States side by the Olympic range, chief among whose snowy summits is "the *Mt. Olympus* of Meares," "the most remarkable mountain we had seen off the coast of New Albion, . . . a summit with a very elegant double fork," wrote Vancouver. Long before him Juan Perez had named it the *Sierra de Santa Rosalina*.

This is the fabled strait of Anian supposed to lead through to the Atlantic, and for which the greatest navigators of two centuries sought. Such a strait was first exploited by the Portuguese naviga-

tor Cortereal, who claimed to have sailed from the Labrador coast through a narrow strait to the Indian Ocean in the year 1500. Eighty-eight years later Maldonado said that he too had sailed through these straits of Anian to the Western Ocean. Then Admiral del Fonte hastened northward from Callao in 1640 to intercept some Boston ships that were to come through this northwest passage to interfere with Spanish interests in the Pacific. Del Fonte gave full details, and told all about the great archipelago of San Lazaria and the great river under the 53d parallel. He described the natives, gave the names of their villages, their numbers, and, sailing up a river to a lake, passed out by another river into the Atlantic, and there found a ship from "Malteshusetts." In the year 1592, Apostolos Valerianos, or Juan de Fuca, a Greek pilot in the employ of the Viceroy of New Spain, took a caravel into "a broad opening between 47° and 48°." He sailed eastward for 100 miles, and past divers islands for 20 days, where he saw men clad in the skins of beasts, and emerged into the Atlantic. Considering his duty done, he sailed back through his straits and down to Acapulco; was sent to Spain to report the marvel to the king, and some years later told his tale of discovery and royal neglect to an English consul in Italy, who tried vainly to interest Sir Walter Raleigh in the matter and have the old man taken to England. Then began that series of voyages in search of the straits of Anian, which employed all the great navigators from Frobisher and Drake to Vancouver, and filled their day with such true sea-stories as have no match now. Every adventurer and every navigator out of a job claimed to have gone through the straits, or to be willing to go at some one else's expense, and the wits and romancers made fine play with the theme.

Captain James Cook, on his third and last voyage of discovery, sought for the strait, but missed it, discovering Nootka, on the W. coast of Vancouver Island, which the Spaniards had previously found, and where they later built a fort to ward off Russian advances toward their California colonies. In 1787 Berkely found the broad strait; in 1788 Meares sailed into and named it for Juan de Fuca; in 1789 Captain Kendrick, of Boston, sailed around Vancouver Island; in 1790 Lieutenant Quimper entered Puget Sound and the Gulf of Georgia; in 1791 Caamano explored and discovered the Fraser River; and in 1792 Galiano and Valdes surveyed the Gulf of Georgia and circumnavigated the great island, overtaken and accompanied by Vancouver. The latter had been sent in accordance with the provisions of the Nootka Convention, which, in adjudging indemnity for British ships seized and sold for invading the Spanish colonies, decreed that the Spaniards should abandon their Nootka fort, and the Northwest Coast become virgin soil free to trade and settlement by all people. Vancouver was charged to investigate the alleged discovery of De Fuca's strait, and to explore the coast for a passage into the Atlantic. Spanish explorers, and Boston and British fur-traders had preceded him in many instances, but although he met them, saw their charts, and received much aid, his charts and narrative ignore their work, and, being the first published, won him a discoverer's honours throughout. His charts were the only

ones in use between Puget Sound and Dixon Entrance until the Wilkes Exploring Expedition surveys, in 1841, furnished new charts from Commencement Bay to the Gulf of Georgia, and the Richards and Pender surveys, 1858–'68, of the entire British Columbia coast were made the basis of a new set of admiralty charts. Vancouver is the authority for many charts of southeastern Alaska now in use.

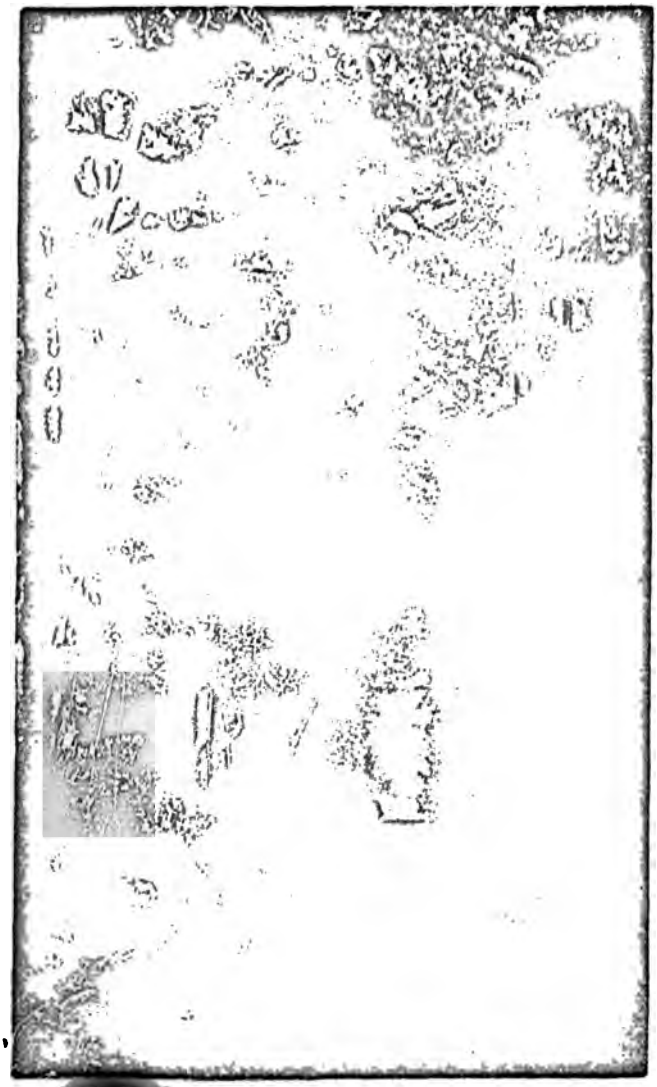
Vancouver Island.

The island of Quadra* and Vancouver, as those two agreed to call it in 1792, is the largest island on the Pacific coast of North America, 300 miles long, from 40 to 60 miles wide, and in area nearly equalling Ireland, which its climate resembles. It is mountainous throughout, the main range, a continuation of the Olympics, showing many peaks 6,000 and 8,000 ft. in height. The shores are deeply indented, many inlets penetrating to the heart of the island, which is densely wooded throughout, with occasional small prairies at the southern end. Mineral deposits have been uncovered at many places, and extensive coal fields are worked on the Georgian shore. Settlements have advanced slowly on the west coast, which is beset with many dangers to navigation, but which in time must attract fishing communities. Scottish crofter families have already been colonized for that purpose.

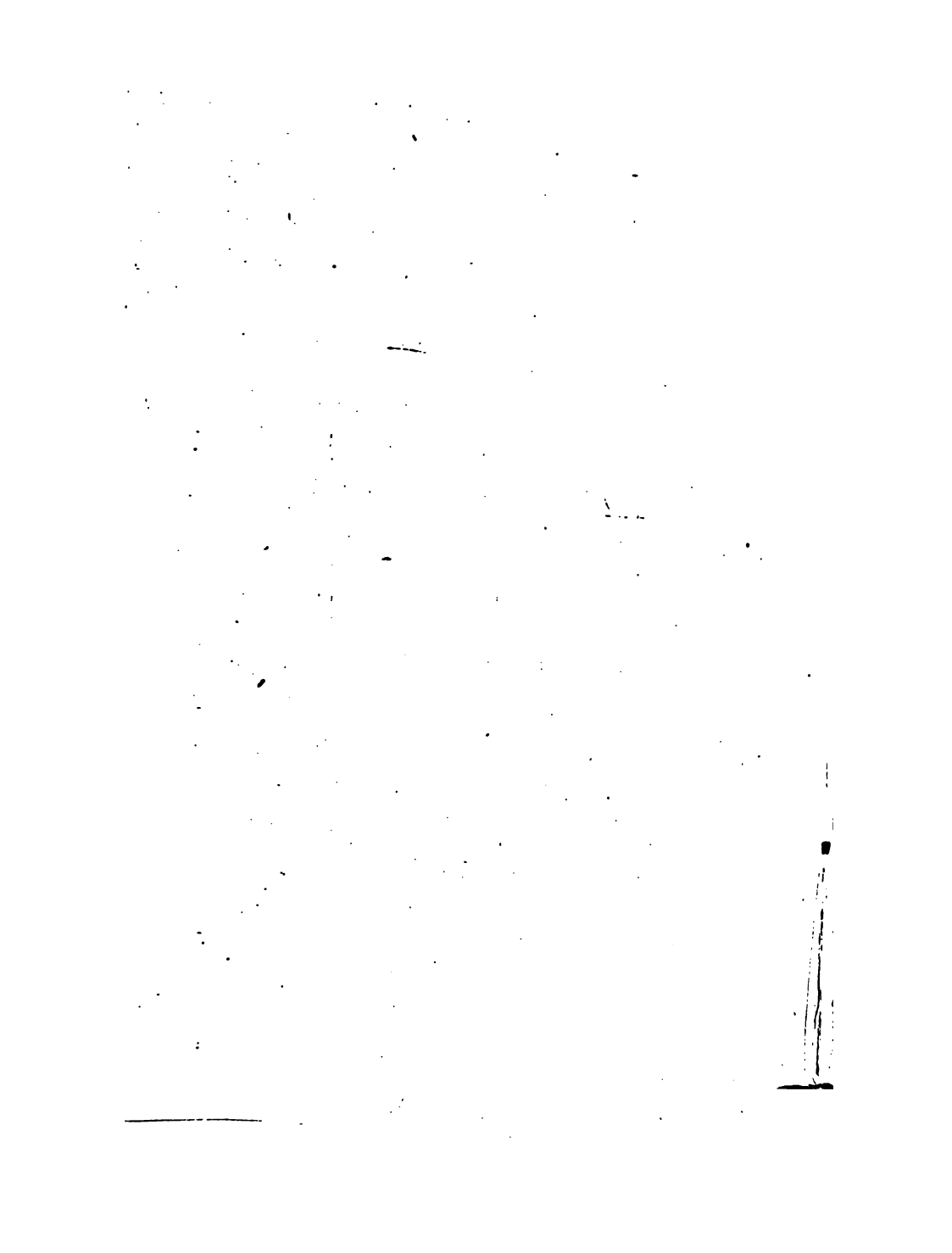
After the abandonment of Nootka, the first settlement was made by the H. B. Co. in 1844, when they built a fort at the native *Camosun*, "the place where camass grows," which became Fort Victoria. In 1849 her Majesty assigned all of Vancouver Island to the H. B. Co. forever. In 1858 it was bought back by the Crown for £57,500, just as the Fraser River gold excitement brought 30,000 people to the colony at once, and a canvas city of 15,000 inhabitants surrounded the stockade for months. Vancouver was a separate colony, and Sir James Douglass its Governor, until 1866, when it became one province with British Columbia, under the same distinguished Governor. In 1871 British Columbia joined the Dominion of Canada, with an understanding that the Dominion would build a railway to the Pacific. Delay in fulfilling that promise caused disaffection and a strong sentiment for annexation with the United States. The completion of the C. P. R. in 1885 brought a revival second only to Fraser River times, and the island cities have grown as rapidly as their younger rivals on the mainland shore. Extensive fortifications protect Esquimault, the British naval station, which commands the strait of Fuca.

Victoria, population 20,000, fully described in THE CANADIAN GUIDE-BOOK, Part II, offers much to the tourist who awaits the

* Quadra was Spanish commandant at Nootka in 1792.



...ay in Stanley Park, Vancouver.



Alaska steamer at that point. The *Driard* ($3.50 per day) and the *Dallas* ($3 per day), are the leading hotels, and *Marbocufs*, or the *Poodle-Dog Restaurant*, is famous for its *cuisine*. The P. C. S. S. Co.'s steamers land passengers at the outside wharf, and the C. P. N. Co.'s steamers land at the wharves at the inside harbour. An electric railway connects the outside wharf with the business part of the city, and its branch lines reach Esquimault and the suburbs. Cabs are cheap, and the drives about Victoria are much famed for the picturesque scenes they lead to, and their perfect road-beds. There is daily communication between Victoria, New Westminster, Port Townsend, Seattle, and Tacoma. The C. P. N. Co.'s mail steamers make semi-monthly trips to Barclay Sound, on the W. coast of the island, and to the N. coast. C. P. N. Co.'s excursion steamers depart at intervals for Alaska during the summer months, calling at Vancouver, Alert Bay, Fort Rupert, River's Inlet, China Hat, Gardiner's Inlet, Port Essington, Metlakahtla and Fort Simpson, in addition to the chief points of interest in Alaska—Fort Wrangel, Sitka and Juneau, and skirting past but not landing at the Muir and Taku Glaciers.

The P. C. S. S. Co.'s steamers regularly call at Victoria in going and returning, and their steamers plying between San Francisco and the Puget Sound ports make it a regular port of call every five days.

The C. P. R. Royal Mail Steamship Line to China and Japan call at Victoria in going and returning. The steamers of the N. P. R. Co. to China and Japan, and the Puget Sound and Hawaii Traffic Co.'s Honolulu steamers, also call at Victoria.

The Island Railway, 80 miles in length, connects Esquimault and Victoria with Nanaimo on the Gulf of Georgia. It was begun in 1884 and completed in 1888, its projectors, Robert Dunsmuir and his sons, James Bryden, Leland Stanford, C. P. Huntington, and Charles Crocker, receiving a Government subsidy of $750,000, and a grant of land ten miles in width on either side of the road-bed, with all the minerals and timber included. Passengers may, at their own expense, agreeably break the steamer trip by taking this short rail route between Victoria and Nanaimo, and enjoy the island forests and scenery.

In a single day, or during the usual waits of Alaska mail and excursion steamers at Victoria, the tourist can see the war ships and dry dock at Esquimault; the boiling-tide rapids at the Gorge, the true Esquimault, or "rush of waters"; the Colonial Museum; the Songhies Camp across the harbour; the curio shops in Johnson Street; Chinatown;

and on certain days hear the Military Band play in Beacon Hill Park. The Dominion tariff prevents the shops from offering many inducements to shoppers and amateur smugglers to the United States. Sooke, Saanich, Cowichan, further inlets and distant lakes, with their tidy British inns, snug shooting-boxes, or rough camps, offer much to sportsmen and anglers who may prolong their stay.

TIDES.

The tides of the Pacific coast differ greatly from those of the Atlantic. Lieutenant R. C. Ray, U. S. N., in the U. S. Hydrographic Office, "Coast of British Columbia," explains these Pacific tides in this reference to those of the strait of Fuca and Gulf of Georgia:

"The great and perplexing tidal irregularities may therefore be said to be embraced between the strait of Fuca, near the Race Islands, and Cape Mudge, a distance of 150 miles; and a careful investigation of the observations made at Esquimault, and among the islands of the Haro Archipelago, shows that during the summer months, May, June, and July, there occurs but one high and one low water during the twenty-four hours, high water at the full and change of the moon happening about midnight, and varying but slightly from that hour during any day of the three months; the springs range from 8 to 10 ft., the neaps from 4 to 5 ft. The tides are almost stationary for two hours on either side of high or low water, unless affected by strong winds outside.

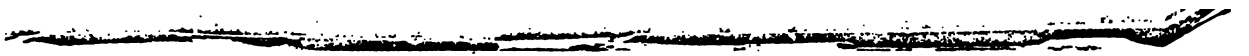
"During August, September, and October there are two high and low waters in the twenty-four hours; a superior and an inferior tide, the high water of the superior varying between 1h. and 3h. A. M., the range during these months from 3 to 5 ft., the night tide the highest.

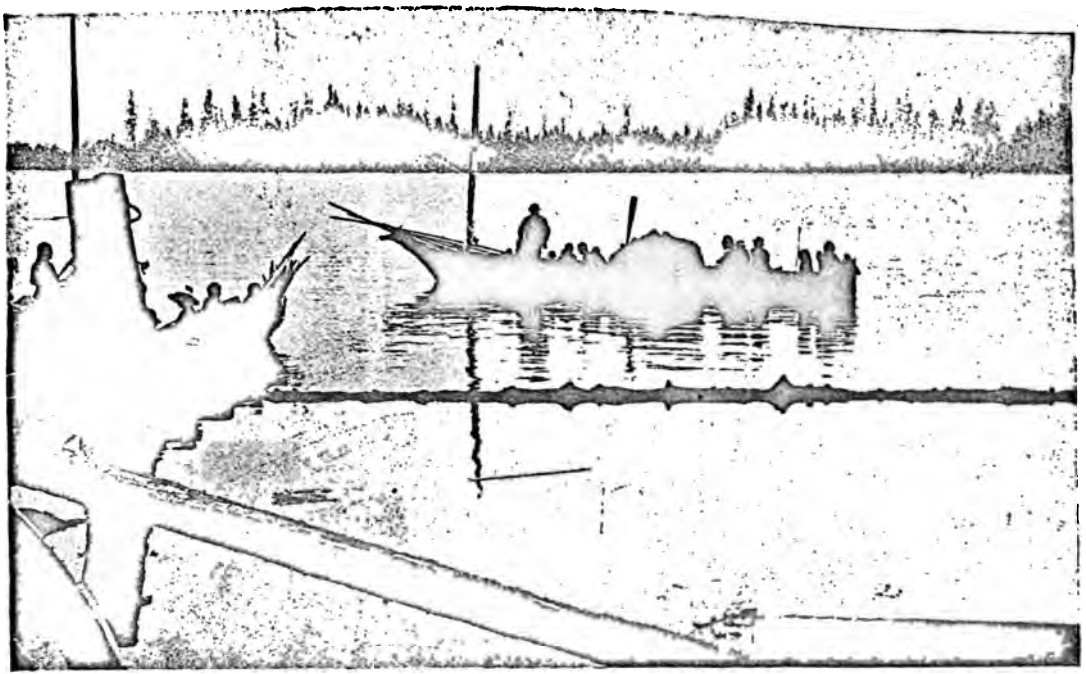
"During winter almost a reversal of these rules appears to take place: thus, in November, December, and January the twelve-hour tides again occur, but the time of high water is at or about noon instead of midnight.

"In February, March, and April there are two tides, the superior high water occurring from 1h. to 3h. P. M. Thus it may be said that in summer months the tides are low during the day, the highest tides occurring in the night, and in winter the tides are low during the night, the highest tide occurring in the day.

"The ebb stream has always been found to run southward through the Haro Archipelago, and out of Fuca Strait for two and one-half hours after it is low water by the shore, the water rising during that time; the ebb is stronger than the flood, and generally two hours' longer duration.

"The tides during those months when two high and two low waters occur in the twenty-four hours are far more irregular than when there is only one twelve-hour tide; and another anomaly exists, viz., the greatest range not infrequently occurs at the first and last quarters, instead of at the full and change of the moon."





Indians, near New Westminster.

The Inland Sea.

From Victoria to Queen Charlotte Sound.

The P. C. S. S. Co.'s steamers after leaving Victoria skirt the shores of San Juan Island and enter the Gulf of Georgia by the narrow *Active Pass* between Mayne and Galiano Islands, discovered by and named for the U. S. S. survey ship *Active*, in 1858. The C. P. N. Co.'s steamers use *Plumper Pass*, named for H. B. M. S. Plumper. Both are very narrow, with steep, picturesque banks. The **Gulf of Georgia** and its connecting waters comprise an **Inland Sea** greater in extent than that famous one lying between the three great islands of Japan, and it is more richly endowed by Nature. The 100-mile stretch between Active Pass and Cape Mudge is the finest part of this Inland Sea, that is 40 and 60 miles broad off the mouth of the Fraser River. The Crown Mountains on the Vancouver shore are snow-capped all their length, and Mt. Baker is chief in the white host of Cascade peaks on the mainland shore.

The fresh water of the Fraser River may be distinguished miles away on emerging from Active or Plumper Pass, the fresh flood striping and mottling the surface with a paler green, and with its different density and temperature floating over the sea-water or cutting through it in solid bodies that everywhere show sharply defined lines of separation. Vancouver scouted the idea of there being a great river such as Caamano claimed to have found a year before and named the Rio Blanco in honour of the Prime Minister of Spain, although his ships were then anchored in the midst of these mottled waters which every tourist notes.

The *Fraser River*, whose head-waters were discovered by Sir Alexander Mackenzie in 1793, and whose course was followed from head-waters to tide-waters by Simon Fraser in 1808, is described in all its length in Appletons' Canadian Guide-Book, Part II. Full accounts of the cities of **New Westminster** and **Vancouver** are found there as well.

Passengers arriving from the East by the C. P. R. may join the Alaska excursion steamers of the C. P. N. Co. at *Vancouver*. The mail steamers of that line do not always touch at Vancouver, and passengers must join them at Victoria, save when they may have the chance to intercept them at *Nanaimo*. The Alaska mail and excursion steamers of the P. C. S. S. Co. do not touch at Vancouver, and C. P. R.

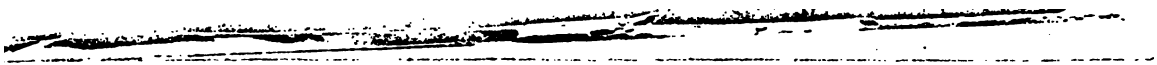
passengers join them at *Anacortes* or *Victoria* as the agent may indicate. Steamers for Victoria and Nanaimo leave Vancouver daily upon the arrival of the overland trains.

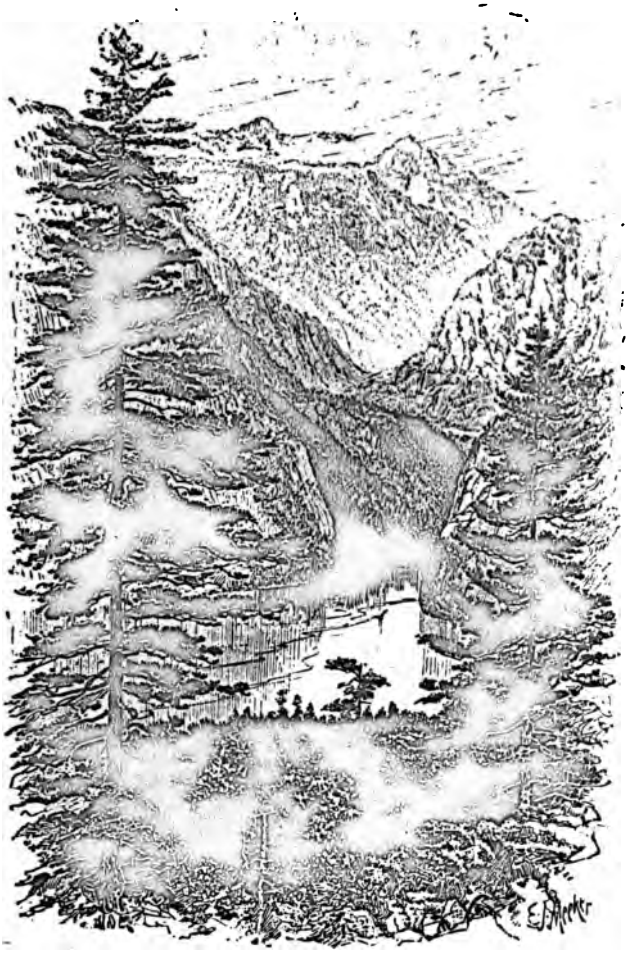
The Vicinity of Nanaimo.

Nanaimo, 40 miles across from Vancouver, population 4,000, is a busy colliery town, where Alaska steamers of the P. C. S. S. Co. remain from six to twenty-four hours while coaling. It is fully described in THE CANADIAN GUIDE BOOK, Part II. The town itself offers little of interest to the tourist save the old H. B. Co. block-house, dating from 1833.

Coal was discovered in 1850 through the Indians, who brought a canoe load of the black stones to the H. B. Co. blacksmiths at Victoria. At first the Indians were paid one blanket for 8 barrels of coal taken out. Four companies now operate the Nanaimo mines; the harbour is busy with waiting and loading ships, and the output is about 500,000 tons a year, selling at the wharf for $3 and $3.50 per ton.

The Alaska steamers as often coal at the Wellington wharves in **Departure Bay**, which is separated from Nanaimo harbour by Newcastle Island, whose coal-pits and stone quarry are abandoned. A steam ferry connects Departure Bay wharves with Nanaimo, and a 5-mile carriage road through the forest gives beautiful outlooks upon the water. The *Wellington* mines lie 5 miles from the wharves, connected by railway and carriage road. The mines were discovered by the late Richard Dunsmuir, Scotch coal expert of the H. B. Co., whose horse stumbled and uncovered the outcroppings of the best coal in the neighbourhood. The British admiral, Mr. Dunsmuir, and one other ventured £1,000 each in developing the property. At the end of two years Mr. Dunsmuir bought the admiral's share for £50,000, and at the end of five years the remaining partner's share for £150,000. The 5 Dunsmuir mines at *Wellington* and *North Wellington* clear over $50,000 each month, and the pits are surrounded by long rows of colliers' tenements. Native, Chinese, Cornish, and frontier miners have been employed, and after a serious riot, calling for troops to suppress it, the owners closed one group of mines for two years, and its village was depopulated. Wellington commands a higher price than Nanaimo coal, and is used in city gas works on the coast. Dr. George M. Dawson, who recently examined these bituminous coal measures, found that the cretaceous rocks holding these coal-beds filled a trough 130 miles in length along the east shore of Vancouver Island. Dr. Harrington's analysis of this





The Gorge of the Homathco.

true bituminous coal gave an average of 6·29 per cent of ash and 1·47 per cent of water.

Besides the carriage roads already mentioned, one is being cut to the summit of *Mt. Benson*, behind Nanaimo.

The surrounding forests are of greatest interest to botanists, and wherever the rocks are uncovered they show the grooved and rounded carvings of a glacial garden. The carriage road is often a tunnel through the dense, dark foliage of the huge Douglas firs, and the last of the rich, red-barked madroña-trees or Menzies arbutus grow among the evergreens. There is an especially fine grove of madroñas on the knoll between the coal wharves and the block-house in Nanaimo. Ferns of many varieties and of gigantic size thrive—those 6 and 9 ft. in length being easily found at the end of summer—and among the many strange wild flowers there is a blue clover. Azaleas brighten the forests in May; the sallal, thimble, salmon, and blackberries abound in August. *Achlys trifillum*, the Oregon sweet-leaf, or deer-foot, grows rankly everywhere, and Nanaimo children gather bunches of this enduringly fragrant leaf for sale on steamer days. Sportsmen find deer, bear, and elk, or wapiti, in the wilderness. Grouse and Chinese pheasants, which have spread from the first birds imported by an Oregon club, abound. The smaller streams and lakes contain trout and malma; salmon will take a spoon at the least, and cod are easily caught in the harbour. Camping outfits for a stay in the wilderness may be secured at Nanaimo, and it is possible to reach many remote inlets by the smaller vessels that often call.

The Lighthouse on the north end of *Entrance Island*, at the entrance of Nanaimo harbour is the last one on the British Columbia coast, and Nanaimo is the end of telegraph lines.

On the Vancouver shore the *Crown Mountains* rise in a splendid line of peaks. Mt. Albert Edward (6,968 ft.) is due W. of Texada Island. Alexandra Peak (6,394 ft.) is next in line northward, followed by Crown Mountain (6,100 ft.) and by Victoria Peak (7,500 ft.), the latter lying due W. of Discovery Passage.

The Upper End of the Gulf of Georgia.

The Great Fiords and the Salish Villages.

Sechelt Arm of Jervis Inlet contains a great tidal rapid whose roar is heard for miles, and which only needs to be exploited to obscure the fame of the Norwegian Malstrom and Salstrom.

Sechelt Mission in Trail Bay, across the gulf from Nanaimo, is a tidy village with a large Roman Catholic church, where excursion steamers often touch. A first representation of the Passion Play was given here in 1890, and native communicants from all parts of British Columbia assembled for the religious ceremonies, which occupied three days. These scenes from the life and crucifixion of Christ were repeated at the mission opposite Vancouver City in 1891, and at Mission Junction on the Fraser in 1892.

Phosphorescent seas of wonderful brilliancy are often witnessed in the Gulf of Georgia, and black whales may always be seen spouting singly or in schools.

Texada Island is 27 miles in length and 4 in breadth, with Mt. Shepherd (2,906 ft.) rising above its many ridges. There are large deposits of coarse magnetic iron-ore, containing only ·003 per cent of phosphorus, valuable for steel-making, and enhanced in value by the neighbouring coal-beds.

Desolation Sound and **Bute Inlet** indent the mainland, the latter the most famous fiord along the gulf. It is 40 miles in length, often less than a mile in width, and the precipitous mountain walls rise from 4,000 to 8,000 ft. in height. Soundings of 400 fathoms have been made without bottom, and the clear waters are so darkly green as to be almost black. Dense forests clothe these walls; glaciers, snow-banks, and cascades gleam among the green. Lord Dufferin and the Marquis of Lorne began the praise of Bute Inlet as the scenic gem of the coast, and its reputation increases yearly.

The *Cape Mudge* village marks the limit of the Salish tribes which inhabit the coast between it and the head of Puget Sound. The Salish are fast dying, and some have become extinct within a decade. They had a totemic organization, possessed many arts, permanent homes, seaworthy and graceful canoes, when the first whites came. Their black, shovel-nosed dug-out canoes make pictures in the still waters between wooded shores, and the Chinook canoe is said to have given the lines for the American clipper ships of the China and East Indian trade. They are a superior people, differing thus from the canoe Indians of South America, and quite as aggressive as the meat-eating tribes of the interior. Cape Mudge potlatches, or feasts, where the host divides all his property among his guests, are famous, one in 1892 representing an expenditure of $6,000 in the gifts distributed. In 1888 the neighbouring Cowichans had accumulated personal property estimated at $407,000. The British Columbia Legislature forbade potlatches, and in one year their wealth decreased to $80,000—the prohibition of potlatches quenching all their desire to accumulate. Before the

whites came the sign-language was used between the tribes. Since then the general medium of communication, with whites as well, has been the Chinook Jargon compounded by H. B. Co.'s factors from Salish, French, English, Russian, and Kanaka speech. It has a vocabulary but no grammar, and one quickly learns its simple arrangements from the printed manuals, and finds it a useful accomplishment on the coast. *Siwash*, the Chinook name for an Indian, is a corruption of the French *sauvage*. *Klahowyah*, the usual salutation, is the native equivalent for the "Clark, how are you?" as a white trader was always greeted by arriving friends.

Seymour Narrows or Yaculta Rapids—The Great Malstrom.

Discovery Passage, 23 miles in length, separates Vancouver from *Valdes Island*, and the geological formations of its banks show how recently the two islands were one. Midway in the pass are the **Seymour Narrows**, named for the British admiral, but known to the natives as *Yaculta*, the home of an evil spirit, who lived in its depths and delighted to snatch canoes and devour their occupants, and to vex and toss whales about. The Richards and Pender surveys reduced the fabled dangers to exactness. *The Narrows* are a mile and a half long and less than half a mile wide, and the ebbing tide from the *Gulf of Georgia* races through at a speed varying from 6 to 10 and 12 knots an hour. *Ripple Rock* lifts a knife-edged reef for 300 yards down the centre of the pass, with 13 ft. of water over these pinnacles, and depths of 100 fathoms around them. Ships are timed to reach the Narrows during the favourable quarter hour before or after the ten minutes of slack water, when the whirlpool boils and simmers mildly. The few who have inadvertently gone through with the racing tide have seen the whole gorge white with foam, waves rearing and breaking madly, deep holes boring down into the water, fountains boiling up like geysers, and ships reeling, shivering, and staggering in the demon's hold. Ships steaming 12 knots an hour have made but a cable's headway in two hours, and have often been swept back to await the favourable half hour in the many convenient coves near. Many vessels were wrecked before the pass was fully known.

The U. S. S. *Saranac*, a second-rate side-wheel steamer of 11 guns, was lost in Seymour Narrows June 18, 1875. It entered the pass too late, was caught in the current, and struck broadside on Ripple Rock. It swung off, was headed for the Vancouver shore, and made fast with hawsers to trees; but there was only time to lower a boat with the pa-

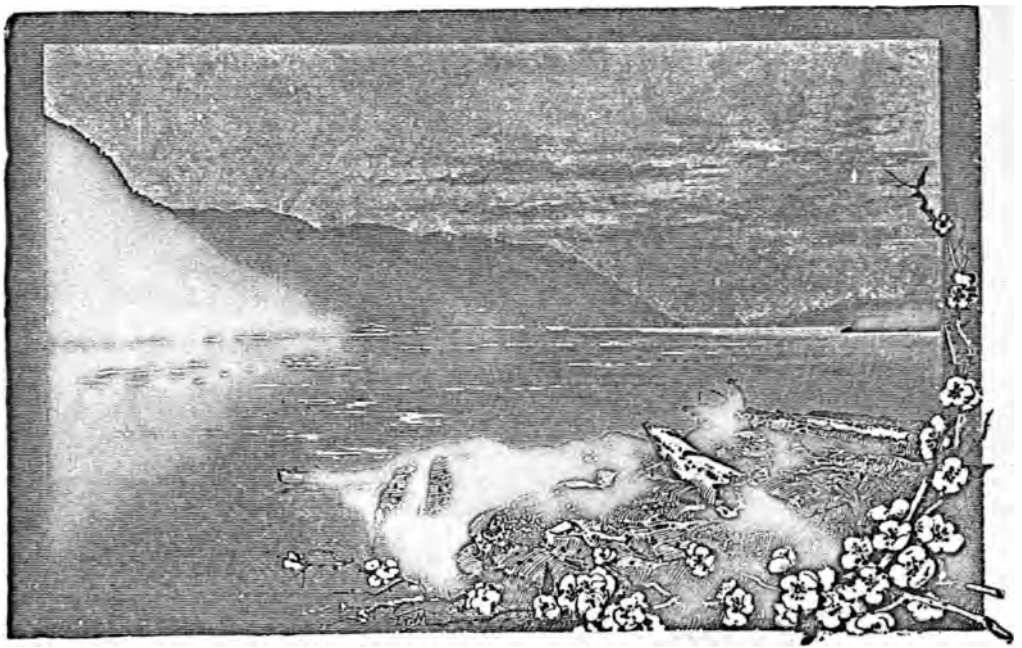
pers and a few provisions, when the *Saranac* sank 60 fathoms deep, and the crew camped on shore while a small boat went to Nanaimo for help. In 1882 the U. S. S. *Wachusett* ventured within Yaculta's realm too late, was seized by the demon, drawn down in a big eddy and hurled against the rock with such force that its false keel was entirely torn away. In 1883 the little coasting steamer *Grappler*, returning with the pack and crew from northern canneries, took fire as it entered the Narrows. The hemp rudder-ropes burned; the frantic passengers leaped overboard as the boat careened and whirled in the rapids; the captain was sucked down in an eddy with his life-preserver belted on, and few escaped. The rings of floating kelp that drift in the race-way are said to be the queues of the 70 Chinese lost with the *Grappler*. The Norwegian Malstrom, lying between the most southerly islands of the Loffoden group, attains a speed of 6 knots an hour, only when a westerly gale aids the tide: and the greater Salstrom in behind Tromso has but a little stronger current at the ebb.

The Head of Vancouver Island.

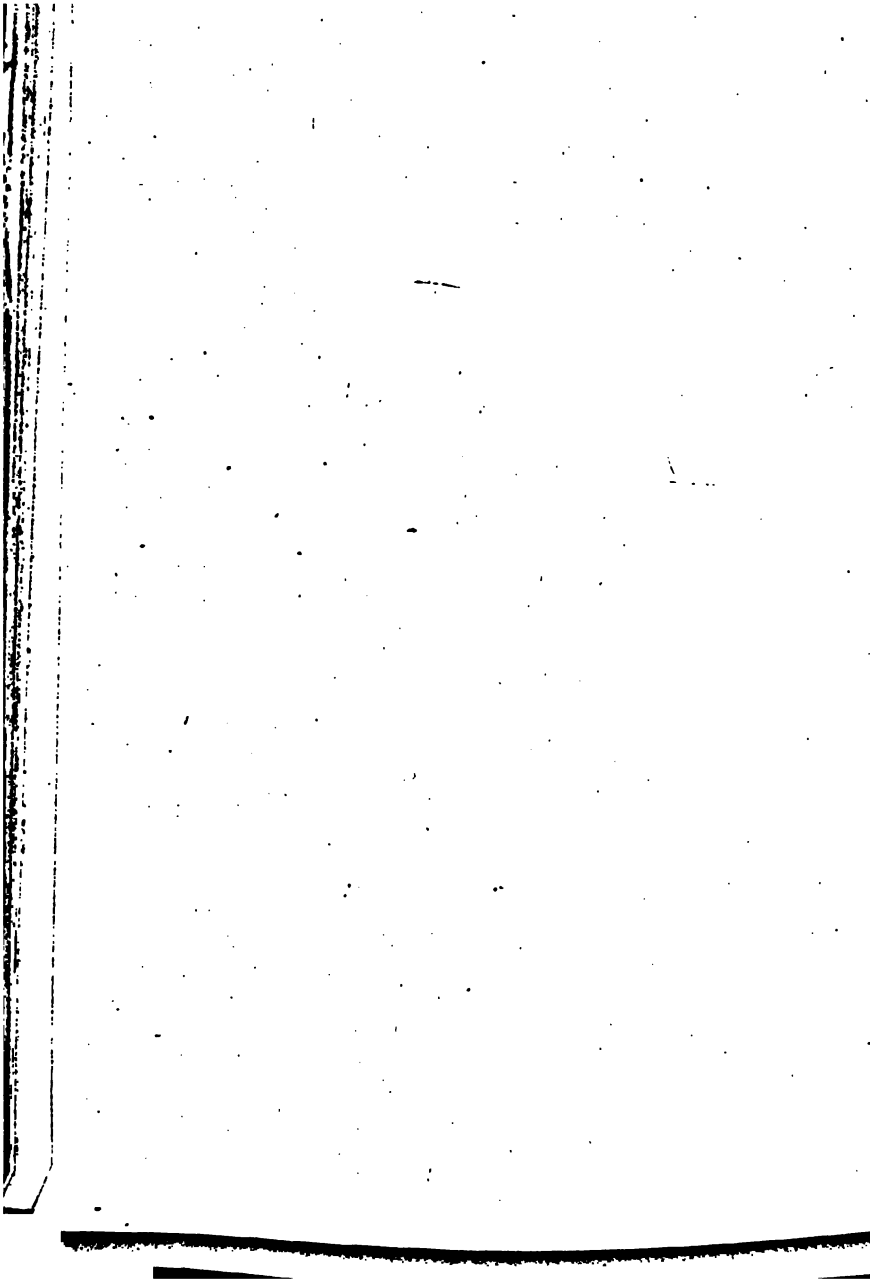
Johnstone Strait, 55 miles in length, and *Broughton Strait*, 14 miles in length, varying from 1 to 2 miles in width, continue the double panorama of forested slopes and bold mountain walls.

The Alert Bay cannery, on the S. side of Cormorant Island, has drawn a village of 150 Kwakiutl Indians from the abandoned village of Cheslakee, at the mouth of the Nimpkish River. Missionaries have not been able to do anything with these people. The most southerly totem-pole, and the only one known to have been erected on the coast within ten years, is to be seen in front of the chief's house at **Alert Bay**. The graveyard is most interesting, with painted boxes, carved poles, many flags and streamers. The eccentric fashions in head-flattening ceased with the Salish people at the line of Cape Mudge, and the Kwakiutl cranium was elongated, and drawn up into pyramidal shape. A few very aged people show the peculiar shapes of skull once in vogue, and fine specimens have been obtained from graves. The Alert Bay Indians will give the old peace and festival dances in costume, if a sufficient purse is made up by their white visitors.

Fort Rupert, an old H. B. Co. post, is in *Beaver Harbour*, 9 miles beyond *Broughton Strait*. The fort was built in 1849, and strongly defended because of the natives near it and the frequent visits of the Haidas and northern tribes. There was a heavy earthquake shock in August, 1865, and in 1867 the ranche was bombarded by H. B. M. S. *Clio* until the tribe surrendered some hidden murderers. Since then the Kwakiutls have been peaceable and their annals eventless. The young



Johnston Strait.



men desert the village every summer, to work at mills and canneries. The block-houses and gateway of the old fort remain, and also the chief's house, a famous old lodge 100 ft. long and 80 ft. wide, resting on carved corner posts. The great potlatch dish, in shape of a recumbent man, holding food for 100 people, is shown. Coal-mines were worked by the H. B. Co. before the Nanaimo veins were discovered, and the cleared fields and gardens are still productive.

Beyond the *Broughton Archipelago* there are several fine fiords, the narrow *King Come Inlet* having an 18-mile-long wall of snow-peaks; and *McKenzie Sound* vertical walls that almost shut the sunlight from the flooded gorge, that is only foreground and approach to the noble peak Vancouver, named for Sir John Philip Stephens, of the Admiralty.

At the W. end of *Galiano Island* there is a spire of rock crowning a promontory 1,200 ft. high, which Admiral Phelps, U. S. N., and Hon. J. G. Swan argue to be "the great headland or island with an exceeding high pinnacle or spired rock like a pillar thereon" which Juan de Fuca saw. They show how easily the Greek may have sailed for 20 days behind Vancouver Island, and, believing the ocean beyond Queen Charlotte Sound to be the Atlantic, retraced his course from this pinnacle in good faith.

From Queen Charlotte Sound to Milbank Sound.

At Queen Charlotte Sound there is a 40-mile gap in the island belt. Captain Gray first charted the expanse as *Pintard Sound*, for the Boston owner of his vessel. Vancouver recharted it as named by Captain Wedgeborough, of the *Experiment*, in 1786. Sometimes the swell of the outer ocean may be felt, but more often it is a stilled expanse, where mists and fogs perpetually hover and play fantastic tricks among the ragged islands and the near snow-peaks. Piloting, which is all by sight along this coast, is often by echo along this reach, and the mariner's acute senses tell, as the sound is flung back, how the shores are trending, and have even detected, by a strange quality in the echo, the presence of another ship's sails. Feeling around its rocky edges, both of Vancouver's ships struck; and in July, 1889, the U. S. S. *Suwanee* was lost on an unknown rock in *Shadwell Passage*.

The Kuro Siwo strikes full against this entrance, on its recurved course, and its warm air, condensed by *Mt. Stephens* and the white host, lies in solid banks upon the water, in and out of which one passes as through a door; or the tips of a ship's masts sparkle in the sunlight of

a high white plain, the hull invisible. Bands of fog pencil the hillside with Japanese conventional cloud effects; a gray canopy truncates the mountain pyramids; or filmy, downy tatters of clouds, mere mist trailers finer than cobweb, drift across green heights, are tangled in the forest, or gathered in still ravines. Every branch and twig sparkles with vivid greenness in this dewy air, washed clean with perpetual mists.

The Kuro Siwo gives the British Columbia coast the climate of Ireland, of Devonshire and Cornwall, and fosters a far richer vegetation on shore, all ferns, bushes, and thirsty plants growing as in a hot-house. In forests as dense as any that Stanley describes, and choked with an undergrowth through which an explorer must cut his way, water-courses, and the paths made to them by bears, are the only possible footways below the level of a thousand feet. The Menzie and Merton spruces, and the Douglas fir, stand as closely together as blades of grass, and the eye sees only leagues and leagues of tree-tops on every slope and shore, their foliage so intensely green, when near at hand, blending and toning to the richest bronze, grey and olive in the distance, and often glowing in the late afternoon as if the foliage reflected some concealed colour, or the slopes were clad in blooming heather. No forest fires darken the air beyond Vancouver's shores, and the scar of a land-slide or wind-break is clothed with green by a second season. A crevice in the rock for safe lodging, a handful of sand or gravel to cover its roots, and a young spruce will prick forth and spread its thin branches, until in time its own needles form a soil and support thick layers of moss. A whole forest thus thrives on air and rocks, the trees crowding one another in their growth, and, with no tap-root to steady them, they fall by acres before a storm wind. Their own weight often pulls the thin skin of earth from the rocks, and acres of perpendicular forest go thundering down into the bottomless channels, and Nature decorates the heights afresh. Madroños disappear, and the famous yellow or Alaska cedars (*Cupressis nutkakensis*) of the Northwest coast show in the forest from Fort Rupert northward.

Nakwakto Rapids.

The Great Malstrom or Reversible Tidal Cataract.

Belize Inlet is the strangest piece of glacial carving on the coast as it zigzags and straggles by many deep cuts to the foot of *Mt. Stephens*. It holds a *malstrom* twice the strength of Seymour Narrows, in the long, narrow gateway that gives entrance to its wonderland. There are Indian villages along those cañons, but it is only for ten minutes at a time that a canoe can pass the **Nakwakto Rapids** to reach them. In the first narrows of *Slingsby Channel*, which are but 200 yards wide, there is a maelstrom where the tide makes 9 knots an hour at the turn. The cañon continues for 5 miles and widens to 400 yards at the Nakwakto Rapids, the *Kahtsisilla* of the natives, and the most

remarkable place of its kind on the coast. The ebb tide races out at a speed of 15 and 20 knots an hour, the waves running up the face of Turret Isle, which rises 80 ft. above the water in mid-channel. There is magnificent scenery in the labyrinth of farther inlets, and at the end of one arm there is a peak 5,000 ft. high which easily acquired the name of *Perpendicular Mountain*.

The Coast of British Columbia.

The Inside Passage through the Columbian Archipelago.

Fitzhugh Sound, first in the line of channels separating the **Columbian Archipelago** from the mainland of British Columbia, trends 30 miles due N. a smooth river running between mountain banks. Just within its entrance, on the shores of *Calvert Island*, is **Oatsoalis** or **Safety Cove**, a mariner's refuge since Duncan's time (1787). Vancouver anchored and repaired ships there before returning to Nootka in 1792, and his men explored the neighbouring inlets in small boats. Mail steamers and canoes rest there when fog, storm, or darkness prevent their crossing the sound. In August, 1885, the P. C. S. S. *Ancon* broke her main cylinder on her way southward and was anchored in the cove for ten days, while Captain James Carroll made the 221-mile voyage to Nanaimo in a life-boat in four days and returned with help. The passengers made it a gala season of adventure and exploration, and regretted leaving. Mt. Buxton, 3,430 ft., is the sharp-pointed peak on the Calvert shore.

Rivers Inlet, the next indentation of the mainland coast, penetrates 20 miles inland, widening into loch-like expanses so sheltered by the precipitous ridges and ranges that it is clear and sunny within when the Sound is banked with fog. There are three canneries at the end, and the C. P. N. steamers call regularly during the summer season. The Bella Bellas' village of *Owikino* is near the larger cannery, but presents little of interest in the way of poles or graves. Two canoe-loads of Owikino seal-hunters were killed at Sorrow Island by the Kitkahtlas, a Tsimsian tribe, in January, 1892, and a bitter Indian war resulted; war canoes carried chanting braves in paint and regalia up and down the channels seeking foes, and the constables required the aid of gunboats to suppress and settle the difficulty.

Vancouver explored **Burke Canal** and its branches, Bentinck Arm and Dean Canal in 1793, his second season on the Northwest Coast. There is a large native village at the end of **Bentinck Arm**,

60 miles from the sea, where Sir Alexander Mackenzie completed the first crossing of the continent of North America in 1793. The Bilqulas, or Bella Coolas, inhabiting these fiords, are an estray branch of the Salish people, isolated in the heart of the Kwakintls country, and they received Mackenzie hospitably, and informed him that "Macubah" (Vancouver) had just been there. Dr. Dawson says that the Bilqulas' trail to the interior and the upper Fraser has existed from time immemorial, and the Tinneh tribes called it the *Grease Trail*, because of the supplies of oulachon and other oil acquired in trade with the Bilqulas. There was a H. B. Co. post at this important point, and in Cariboo times many prospectors reached the diggings over the old Indian trail from Burke Canal.

Cascade Inlet, in Dean Canal, is the Geiranger of this coast, so strangely wanting in great waterfalls. The fiord is 11 miles long and three quarters of a mile wide, with innumerable waterfalls leaping from its tremendous cliffs. Vancouver wrote that these cascades "were extremely grand, and by much the largest and most tremendous we had ever beheld, their impetuosity sending currents of air across the canal."

One of Vancouver's men, Carter, died, and others were made numb and ill for days, from eating mussels in *Poison Cove*. Special providence, far more than Duncan's or Caamano's charts, helped Vancouver to successfully navigate in this region, where a maze of water-ways, and hundreds of *cul-de-sacs* test the pilot's memory. One attractive little opening in *Hunter Island* is known as *The Trap*, and a vessel getting in cannot turn around nor make a tour of the blockading islet which is the bait to the trap, but must be pulled out backward. An English gunboat was once lost in this labyrinth region for two weeks; and when Mr. Seward visited Alaska, in 1869, his pilot also lost the way. The Bella Bellas have a bad name, and when they took one aboard to steer the ship through to *Finlayson's Channel*, a pile of silver dollars was put before the pilot as the reward for a safe passage, and pistols pointed at either ear promised other reward for any treachery.

Jacobsen's Inlet is named for the Tromso scientist, who has made large collections and long ethnological reports to the Bergen and Berlin museums, and once took seven Bella Coolas to Europe. There is a splendid waterfall 300 ft. high in this inlet.

Lama Passage, named for an old H. B. Co. ship, is a beautifully wooded way, its northern shore broken at one place by a graveyard with kennels of tombs painted with totemic designs, and many flags and streamers flying from tall poles. In an opposite cove, on Campbell Island, the remnant of the Bella Bellas are gathered in a model village, with mission, church, school, store, and cabins shining with whitewash, and so dazzling one with their immaculate array that passers-by discredit the curdling tales of the past. They were long the most treacherous, bloodthirsty, and turbulent tribe, and made the life of the H. B.

Co. agents such a dangerous imprisonment that the post of *Fort McLoughlin* was only maintained for a few years after its establishment in 1834. In 1868 the company tried it again, and the new fashions in *Bella Bella* have made life profitable and worth living.

From Milbank Sound to Dixon Entrance.

The Great Scenic Region.

There are only 8 miles of **Milbank Sound** to be crossed to regain the shelter of the great islands again, and it is so fringed with islets that a ship is often past it before its passengers have suspected any opening to the ocean. The finest scenery on the steamer's regular course through the Columbian Archipelago lies between Milbank Sound and *Dixon Entrance*, a double panorama of unbroken beauty 200 miles in length. The tourist cannot afford to lose an hour of this scenic watch. Green slopes are reflected in greener waters, every tree and twig growing double, and only bands of algæ or tide-washed rock tell where reflections part. The shores rise almost perpendicularly for 1,000 or 1,500 ft., above which snow-clad ridges rise as high again, and the channels vary from an eighth of a mile to 2 miles in width. Tall trees climb and cling to these walls like vines, and cascades slipping out from the snow-banks flash among the green and go singing to the sea. The mountain contours tell where lakes must lie in rocky amphitheatres, and overflow in these roaring ribbons.

Finlayson Channel is 24 miles in length, from 1 to 2 miles in width, with depths of 50 and 150 fathoms. Helmet Mountain on the W., and Stripe Mountain marked with the line of a great land-slide, are at the entrance of the channel. Bell Peak (1,280 ft.), on Cone Island, is commonly known as *China Hat*, from its outlines. The village of China Hat and fantastic graveyard are seen from the C. P. N. Co.'s steamers, which regularly call for mails. *Sarah Island* divides the channel's northern end. Its landmarks are two waterfalls that leap from the snow-banks and descend in full view to the sea. Tolmie Channel, W. of Sarah Island, is 15 miles in length, and from a half mile to a mile in width. The scenery increases in charm as the ships pass through *Hiehish Narrows*, a quarter of a mile in width at the head of Sarah Island, and enters

Graham Reach, 17 miles long and less than a mile in width. *McKay Reach* continues the magnificent panorama for the next 8 miles.

The mountains rise more abruptly, granite cliffs tower perpendicularly, their front glistening with glacier polish and latticed over with fine cascades; more waterfalls and land-slides are reflected in the glassy reaches; great alcoves on the heights betray the hidden lakes, and side cañons, lesser Yosemites, lead away into the wilderness of *Princess Royal Island*. In McKay Reach and Wright Sound there is no bottom at 225 fathoms.

At Wright Sound submerged peaks stand as islands; six diverging channels open, and the tourist with an Admiralty Chart is as puzzled as were Caamano and Vancouver a century ago, to know which way leads on or out to the ocean.

Gardner Canal or Inlet.

Ursula and *Devastation Channels*, behind Gribbel Island, lead to the grand canal which Vancouver named for Vice-Admiral Sir Alan Gardner, who recommended that Vancouver be given charge of the expedition to Nootka and the Northwest Coast. Whidbey explored it in that summer of 1793, and reported that it was "almost an entirely barren waste, nearly destitute of wood and verdure, and presenting to the eye one rude mass of almost naked rocks, rising into rugged mountains, more lofty than any he had before seen, whose towering summits seeming to overhang their bases gave them a tremendous appearance. The whole was covered with perpetual ice and snow that reached, in the gullies formed between the mountains, close down to the high-water mark, and many waterfalls of various dimensions were seen to descend in every direction"—a description that might as coldly describe the Sogne Fiord, the Naerodal, the Yosemite, or any other rival cañon's walls. But Mr. Whidbey went the 50 miles of its length, "where it terminated, as usual," and the explorer gave up getting into Hudson Bay by that route.

Tourists consider the **Gardner Canal**, or *Kitlup Cañon*, the culmination of the scenery of the British Columbian coast, as it cleaves its narrowing way for 50 miles between gloomy walls, to where a great mountain blocks the end, with glaciers resting on its sides, cascades foaming down to join the sea, and cannery buildings dwarfed to toys at its base.

The Old Man, a conspicuous landmark on the cañon walls, rises perpendicularly 2,000 ft. from the water, and soundings at its base-line give a depth of over 1,400 ft. The *Islander* has been laid alongside, and passengers have gathered ferns from the seamed and overhanging wall. *Irving Falls*, on the opposite wall, descend 2,000 ft. by successive leaps, and there is a fine frothy fall draining the glacier

above the Price cannery. The *Kitlupa*, who inhabit the summer salmon villages on the inlet and the oulichan village on the *Kemano* River at its head, have few legends connected with the fiord. Kitlup, in Tsimsian speech, is derived from *Kit*, "the people," and *lupa*, "sewed garments"—some vague distinction of earlier days. The cannery was established by Coates, the Scotch thread manufacturer, in 1889. C. P. N. excursion steamers first visited the fiord in August, 1891.

There is a village of Christian Indians at *Hartley Harbour* who were formerly members of Mr. Duncan's community at Metlakahtla, and who, without siding with their leader or the bishop, withdrew to their old home when the troubles began. They have a neat village with a church, school-house, and saw-mill, and the men find summer work at the canneries.

Grenville Channel, the arrowy reach cutting northwestwardly from Wright Sound for 45 miles without bend or break, was named for the Right Hon. Lord Grenville, Secretary of State, who gave Vancouver his commission for the expedition to the Northwest Coast. Until Gardner's Inlet was exploited Grenville Channel was considered first of Columbian fiords, and the deep, glass-floored, echoing green lane is still a boasted show place on the Alaska route. *Lowe Inlet* is the only break in the wall, and the cannery is niched in a fold in the rocks, through which a salmon stream cascades from a high lake. Right Hon. William *Pitt's Archipelago* is W. of Grenville Channel, and, in *Chatham Sound*, Cape Ibbetson immortalizes another of Vancouver's friends in the Admiralty office.

The Skeena River.

Skeena River, the largest stream in the province above the Fraser, is navigable by small steamers for 60 miles above its mouth, and for 200 miles by canoes. Its name—*Skee*, "terror, calamity, trouble," and *Eena*, "a stream"—was given it because of poisonous shellfish, which killed many canoe-loads of the first people who came around from *Nass River*.

It is the greatest salmon stream of the Northwest Coast, and canneries dot its shores for 20 miles. Vancouver was first to enter it, and named *Port Essington* for a naval friend; and the H. B. Co.'s post was built there in 1835, adjoining the native village of Spuksut. It is the most important settlement on the river, with a hotel, church, school, cannery, mill, and fish-refrigerating works, where salmon are frozen, hermetically sealed, and shipped to England. It was considered as a

possible terminus for the C. P. R., being 450 miles nearer to Asiatic ports than the towns at the mouth of the Fraser, and its distance from the United States boundary and immunity in case of war were also in its favour. Land acquired a great value with the prospect, and is still held at $100 and $300 an acre, as the owners believe that a branch of the present trunk line must soon come northward.

The canneries at Port Essington, Claxton, Cascade, Aberdeen, Inverness, Standard, and Mumford Landing produce over 80,000 cases of salmon each season. They are properly restricted by Government regulations, and officers are stationed on the river during the season to enforce them. Each fishing-boat pays a tax of $20 a season. The size of the nets is prescribed by law, and a weekly close season from Saturday to Monday allow a fraction of the salmon to reach the spawning-grounds. Over 100 fishing-boats may be seen at once when the seines are being set or drawn, and more than $50,000 was paid in wages on the Skeena during the salmon season of 1892. The work is performed by Indians, Chinese, Japanese, Greeks, and Scandinavians, and many remain during the winter to work in the saw-mills. Lumber sells at fifty cents per thousand in this section.

The Kwakiutls' empire ceases at the Skeena mouth, and the *Tsimsians*, the greatest of the coast tribes, occupy the coast to the Alaska line. The Tsimsians have always held a monopoly of the inland trade, maintained a grease trail with the interior, and kept the Tinneh in admirable subjection. The few of these mountaineers occasionally seen on the river explain why Fort Stager and Fort Hazelton, on the upper Skeena, remain the only H. B. Co.'s stockaded posts.

There have been gold fevers and great diggings on the upper Skeena for 30 years. The Omineca excitement at the head-waters of Peace River in 1871 emptied Skeena camps, but in 1883–'84 there was a boom on Lorne Creek, and fishermen dropped their nets, and loggers left for the mines.

C. P. N. mail and excursion steamers do not go beyond Port Essington; but while freight is being handled, tourists have often opportunity to take launches or canoes to the Hot Springs 3 miles across, or to the waterfall, 12 miles above. The Western Union Telegraph Co. built its lines to Telegraph Creek, 60 miles above the mouth of the Skeena River, in 1865, but the wires through the dense forest country were soon wrecked.

The Tsimsian Peninsula.

Metlakahtla—"the open channel," or "the channel open at either end"—is a half-ruined Tsimsian village, which for 27 years was the home of Mr. Duncan's colony of Christianized Tsimsians—an actual Arcadia, a living Utopia and model commune that proved much that political economists doubt.

William Duncan was sent from England in 1857 as a lay worker for the Church Mission Society, in response to Admiral Prevost's account of the terrible condition of native life on this coast. Sir James Douglass and all the H. B. Co.'s agents tried to dissuade him from going to Fort Simpson, where there was the greatest number of the worst savages in the region. Within three years Mr. Duncan had learned the language, and so attached 50 of the Tsimsians to him that they went with him to this site of an abandoned Tsimsian settlement. They cleared, drained, and cultivated the land, built a village of tidy two-story cottages, a church, school-house, saw-mill, salmon cannery, and co-operative store. They had their own trading schooner, their brass band and fire brigade, and a village council of elders ordered municipal affairs. They learned to do carpentering, house-building, cabinet-making, shoemaking, coopering, tanning, and rope-making. The women were taught to weave shawls, blankets, and cloth from mountain goat wool, to sew and cook. It was a model industrial settlement, and there was evolved a community life more ideal than anything Plato or Bellamy has imagined. Every visitor, from Lord Dufferin to the roughest seafaring frontiersman, could but praise this "work that stands absolutely without parallel in the history of missions." For 20 years the peace and prosperity of the 800 Metlakahtlans were unbroken. In 1881 Bishop Ridley objected to the form of the simple religious services Mr. Duncan held, and the omission of the communion service; and the Society was disappointed at the few converts and baptisms reported. After continued criticism and interference, Mr. Duncan resigned his mission. The bishop established himself in residence and failed to win the respect or confidence of the people. He quarrelled with the head men, he struck them with his fists, he carried a rifle, and called for a man-of-war to protect him. The people petitioned him to go away, and begged Mr. Duncan to return. Church and state upheld the bishop; the community property was called church property. Mr. Duncan returned, and suggested emigration to the United States side. When ready to leave, the Canadian authorities prevented the pilgrims taking anything but their personal property with them, and their houses, mills, and works were left intact as church property for the 120 of 800 who remained with the bishop. The empty dwellings fell to decay, the clearing partly relapsed to underbrush, the large church was partitioned off to hold the handful of worshippers, and when a few years later the bishop departed, the ruin was complete. The nearly deserted village remains as a monument of misdirected religious zeal, of civil injustice and oppression, the shame and reproach of church and state.

The Japanese employed in the Skeena River fisheries have built a little village of their own near Metlakahtla, and reproduced a corner of Japan. They have their own schooner and cannery, and have begun the manufacture of fancy woodenware for the tourist trade. They affiliate readily with the better class of natives, and, besides the resemblance in features and many customs, their use of the same carpenters' and carvers' tools amazes the white residents.

Fort Simpson, the most important H. B. Co. post on the coast, is 16 miles beyond *Metlakahtla*. Rocks and ledges oblige ships to make a great detour to reach the wharf. In 1831 the H. B. Co. built a first Fort Simpson, 40 miles up the *Nass River*, but as the Tsimsians firmly held their monopoly of trade with the interior, the profitless isolation only endured for three years, and the post was moved to this bit of Tongass ground on the N. shore of the Tsimsian peninsula. It retained the name given it in honour of Lieutenant Simpson, R. N., who was in charge of the company's ship-building, and who died at the first fort on the Nass.

The Tsimsians had originally twelve villages on the Skeena for salmon-fishing, twelve on the Nass for the oulachan-fishing, and twelve permanent winter villages on the coast near to halibut grounds. The beaches about Fort Simpson had been common camping grounds for all tribes for more than a century, and the Tsimsians, the greatest traders and grease merchants of the coast, did a large business at their spring fair, when the oulachan silvered sound and inlets for miles, and the waters were alive with canoes from every quarter. After the fort was built the May fairs were larger; 14,000 savages were often encamped around the stockade; the beach was black with canoes, and perpetual revel and bedlam went on. The fort was often attacked; attempts were made to burn it, and when Sir George Simpson enforced prohibition in trade in 1842, the savages withheld their furs for the Boston ships, which continued to give rum. The fur-trade has now fallen to the merest fraction, the stockade and block-houses have been torn down, and the warehouses, where bear, otter, beaver, fox, mink, and marten skins used to dangle by the tens of thousands, are all but empty. The H. B. Co. fortress is only a general country store. The day of beads, red calico, and toy looking-glasses has gone by, and clocks, fancy lamps, sewing-machines, orguinettes, silk goods, chemical fire-engines, and marble tombstones are objects of Tsimsian pride.

The *Indian Village* on the island wholly changed its appearance within the decade of 1880–'90. The old lodges were replaced by cottages, and the totem-poles nearly all destroyed, only a half dozen remaining from the forest that used to encircle the beach. The tribe paid $750 for the granite monument over the grave of their old chief, on which is chiselled: "In Memory of Abraham Lincoln, Chief of the

Kilshee Tribe. Died at Port Simpson, July 21, 1890, aged 85 years. He said: 'Let me die in peace. Peace I leave with you.'"

Methodist missionaries succeeded Mr. Duncan at Fort Simpson, and the Rev. Mr. Crosby and his aids have almost parallelled the Metlakahtla miracle, and the church, school, hospital, and museum are the points of great interest. The Salvation Army has a band among these Tsimsians. The village is governed by a municipal council of elders. They have their fire company and brass band, and during the small-pox epidemic at Victoria in 1892 all submitted to vaccination, and closed the bridge to the village whenever a Victoria steamer was in port.

All the Dixon Entrance region is bathed in perpetual mists and rains, and the moist greenhouse atmosphere of summer forces a rank vegetation. The finest raspberries in the world are said to grow in the old H. B. Co. gardens—inch-long globes of crimson dew that melt at a touch—rose-red bubbles that have never felt dry air, a withering sun, or a dust particle.

Fort Simpson is confident of becoming the terminus of the next great transcontintental railroad line, the farthest city of the Canadian Northwest. Suburban tracts and wild timber lands are held at a premium, and sites for round-house and car-shops have been discussed. The railway will follow the S. shore of *Work Canal*, which cuts southward to within a mile of the *Skeena* River. Mt. McNeil, on its N. shore, is a snowy, conical peak 4,300 ft. in height. The fiord, but 800 yards broad, widens into a lake-like expanse at the end, and the scenery along its walls is highly praised.

Nass River, Observatory Inlet and Portland Canal.

Nass River heads 100 miles inland, and its shores are historic ground to all the coast tribes, the scenes of half the myths and legends, the cradle of the native race. There are several canneries and mills along its banks, and an Indian mission. The site of the original Fort Simpson is almost opposite *Echo Cove*, the most picturesque cannery site on the coast. The scenery up to that point is wonderfully fine, and the cañons and gorges beyond offer every temptation to those contemplating any canoe trips. The salmon-fisheries of the Nass are regulated in the same way as those on the Skeena.

The coming of the oulichan in March and April is occasion for the great fish festival of the year, and the tribes gather from all quarters to reap the Nass harvest. The Haidas bring their canoes to exchange for oulichan-oil; the Tinneh come down from the mountains with pelts and horns; and every Tsimsian man, woman, and least child help gather the living silver from the water. The oulichan (*Thaleichthys pacificus*), or candle-fish, is most nearly like the Atlantic capelin, has a delicate flavour when freshly caught, and contains more oil than any other known fish. It melts like a lump of butter in the

frying-pan, and when dried, threaded with a spruce wick, and stuck in a bottle, burns like a candle. A bunch of them touched to the fire furnish a sufficient torch. They exist in greatest numbers, and schools of them coming in from the sea fill the river and inlets from bank to bank. The natives rake, shovel, dip, and seine them by canoe-loads, and either dry them and string them through the eyes, or press the oil and store it for winter use, as age cannot impair its qualities. A little oulichan has been smoked and salted for export, and ranks as a rival to herring as a whetter to dull appetites.

Portland Canal separates Alaska from British Columbia for the 60 miles that it cuts into the heart of the Coast Range. Captain Gray was first to discover these waters, and after running into *Portland Canal* and *Observatory Inlet* was sure he had found *Del Fonte's River*. The Spanish commandant at Nootka gave Captain Gray's charts to Vancouver, and full reports of his voyage. The Englishman established an astronomical observatory here under Puget and himself, went with a yawl and two small boats on a reconnoissance that included the shores of *Portland Canal*, and the circumnavigation of *Revillagigedo Island*. He covered 700 geographical miles in twenty-three days.

Portland Canal is walled by mountains 3,000 and 4,000 ft. high at the entrance, while those at the end of the fiord tower to twice that height. At the time of the Alaska purchase the surveyors named the heights on one side for distinguished Americans of that day, and Peabody, Rousseau, Halleck, Adams, Seward, Johnson (Reverdy), and Lincoln's name grace peaks and ranges that, guarding the still channel below, combine and compose themselves into as noble landscapes as can be seen in any of the broader fiords. Much careful surveying and exploration has been done in its reaches since the Alaska and British Columbia boundary line has become a subject of discussion.

The Queen Charlotte Islands.

The Queen Charlotte Island group lies off the island belt of the immediate mainland coast, placed much as the Loffoden Islands are with respect to Norway, and, like them, bordered with extensive cod banks. The islands are a half-submerged mountain range, the direct continuation of the Olympics and the Vancouver Island chain. The compact archipelago measures 180 miles from N. to S., and 60 miles across at the greatest width of Graham Island. The *Kuro Siwo* in its recurved course falls full upon the Queen Charlotte shores and gives

the islands a milder, moister, and more even climate than Port Simpson or the Skeena River settlements enjoy. The west coast is a region of almost perpetual rain, the peaks rising sheer 2,000 and 4,000 ft. from the ocean's edge, catching and condensing all the clouds and vapours borne with the warm ocean current. The eastern shores are less rugged, and, sheltered by the mountain barrier, enjoy a sunnier and drier climate. Cattle have been successfully raised for fifty years, and potatoes grown for a hundred years.

All the islands are densely forested, and each a vast dead fall of timber. Log jams arch and dam every stream, and the wilderness is almost untouched.

Although Juan Perez discovered these islands in 1774, Dr. George M. Dawson has shown how very possible it is that this is *Del Fonte's Archipelago of San Lazario*, where the men wore the skins of beasts and travelled in great canoes hewn from a single log; where there were river-ways vexed by rapids no greater than the tide rips and currents that race through the inlets to-day; and Mynhasset and the name of Del Fonte's other village are as near to Massett and its rivals as Spanish recorders could come in 1640. After Perez, La Pérouse sighted the islands; and then Captain Gray, of Boston, visited them and named them for his ship, the *Washington Islands*. Next, in 1787, Captain Dixon, who was exploring for a London fur company, touched these shores, obtained a large number of sea otter skins which were then the common dress of the people, and named the group the *Queen Charlotte Islands*, in honour of his ship. Captain Dixon gives a full description of the shores and their people in his Voyage Around the World, and sums up the natives as dirty, thievish, impudent, and murderous cannibals. In 1791 Marchand came to the Northwest Coast, surveyed and explored along the W. coast, and in his Voyages says that the people were "good husbands, good fathers, . . hospitable, mild, intelligent, and industrious people, endowed with great good sense, to whom the useful arts are not unknown; who join to these even the agreeable ones, and who may be said to have already made considerable advancement towards civilization." He recognized Aztec words and terminations in their speech, and resemblances to Aztec work in their monuments and picture writings. For the next twenty years the islands were much resorted to by fur-traders, but when the sea otter became extinct they were passed by for a half century. The traders had given the people potatoes, and from fur fishermen they turned to truck farmers, and took canoe-loads of potatoes to each Fort Simpson fair. In 1851 the H. B. Co.'s agent at Fort Simpson showed the chief Edinso a piece of gold-bearing quartz, and asked him to look for such stones on his island. An old squaw showed where a great vein cropped out on the face of a bluff on Graham Island, and in the next year the company established a post at Uttewas village, on *Massett Inlet*, and their employés worked the ledge at Gold

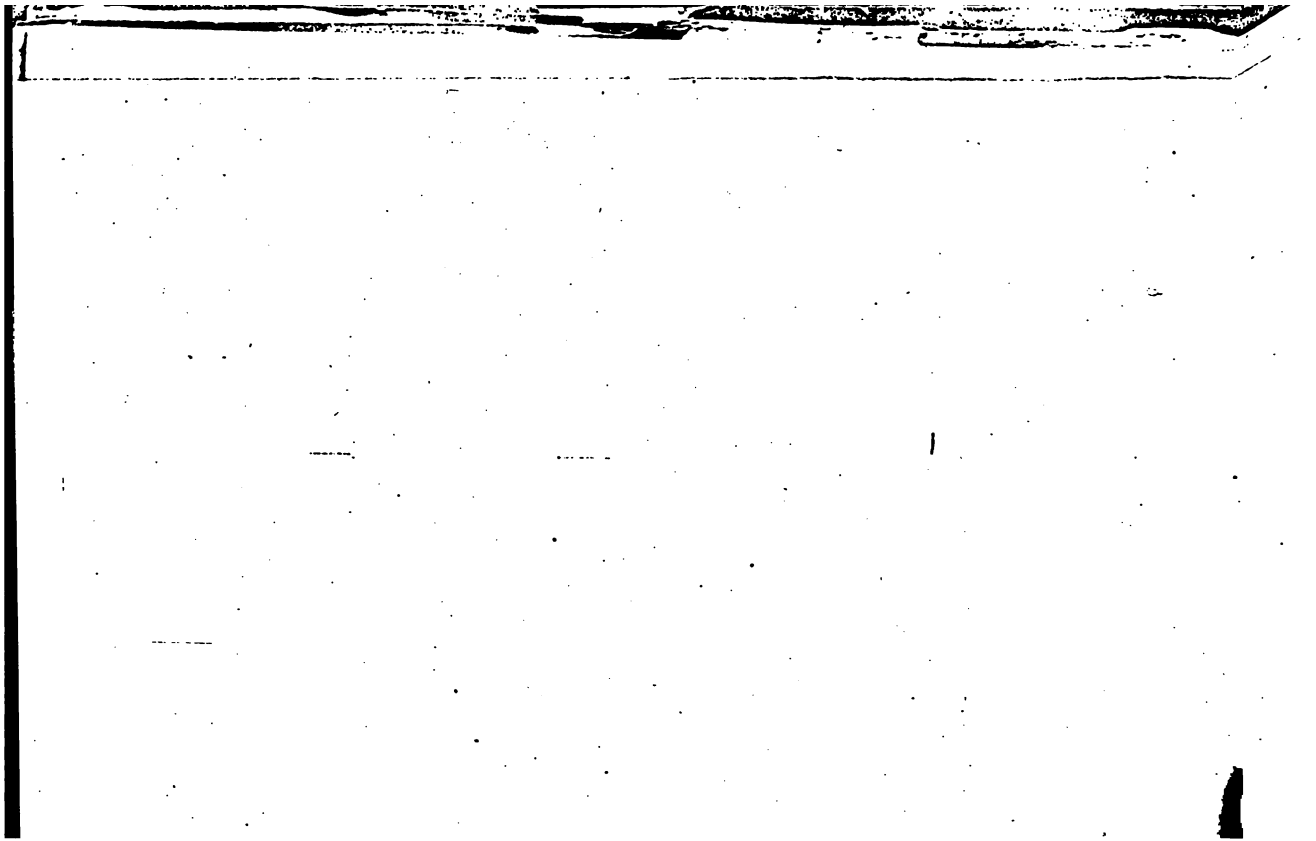
Harbour until it dipped down into the sea. Some miners, who chartered a schooner and sailed for the new gold region, were wrecked on the coast and held as slaves until ransomed.

Massett is reached by the C. P. N. Co.'s steamers on their irregular cruises from Victoria, and by small trading steamers from Fort Simpson. Its old lodges are being abandoned, its famous totem-poles are tottering to decay, and the spirit of progress is fast eliminating every element of picturesqueness. *Massett Inlet* is the Clyde of the coast and canoe-making is always in progress.

The Haida canoe has a curved bottom, flaring sides, a high rounded stern, and a long, projecting prow. It is the lightest, most buoyant, graceful and cranky craft on the coast. The old war canoes were 50 and 60 ft. long, elaborately painted and carved, and often carried 100 warriors. The Haida family or travelling canoe, which one sees all up and down the coast, is a slender, graceful, gondola-like affair 20 or 30 ft. in length and 4 or 6 ft. wide. The hunting or otter canoes are cockle-shells 6 or 10 ft. in length, in which Haida experts go far to sea. All these crafts are hewn from the single log of red cedar, and are given their flare and graceful curves by being filled with water and hot stones until the steamed wood can be braced out to the desired width. Travelling canoes range in price from $75 to $150 at Port Simpson, and hunting canoes $30 to $50; but the canoe market has its fluctuations like any other, and there are often seasons of great bargains. The canoe requires constant care while out of the water. It must be protected from the sun's heat and always kept wet, and the draped canoes along a village beach are the most picturesque adjuncts of native life.

There are large oil-works at **Skidegate**, where the livers of the dog-fish, which swarm in incredible numbers in winter and spring, yield an oil much valued by tanners. A soft, black slate is found on the banks of a creek at the head of *Skidegate Inlet*, and the Haidas carve from it miniature totem-poles, boxes, plaques, and pipes, often inlaying them with haliotis shell. The slate is soft and easily cut with a knife when first quarried, but quickly hardens, and will crack if exposed to the sun or heat before it has seasoned.

There is a colony of Norwegian fishermen on the W. coast who catch and cure halibut and the famous black cod (*Anoplopoma fimbria*), a valuable food-fish which has a different name in each section of the Pacific coast. As Spanish mackerel it is little valued at San Francisco. It attains perfection farther N., and along the strait of Fuca ranks first with epicures as "*beshow*," the popular Makah name adopted by the Fish Commission. The Haidas call it the *skil*, and catch it with wooden hooks attached to trawl-lines. The hook is steamed to the



A Haida Totem-Pole.

shape of the letter U and set with an incurved barb. When not in use the ends of the hook are bound fast with thongs. When baited the ends are held apart by a little stick, and, as the *skil* nibbles the bait, it pushes out the chip and the hook closes upon him like a trap. The chip ascending tallies one *skil* caught; but as dog-fish and shark waft upon the trawl, the fishermen often pulls up only the hundred heads.

THE HAIDAS.

A church mission was established at Massett in 1876. Dr. Harrison came to it in 1878, and has studied the language, made a vocabulary of 10,000 Haida words, translated hymns and songs, and rescued much of their folk-lore and tradition. The Haidas are fast dwindling. Mr. John Work recorded 6,593 inhabitants to the 31 villages visited in 1841. In 1878 there were but three permanent winter villages occupied—Massett, Skidegate, and Gold Harbour—and the Haidas numbered less than 2,000. Only 700 Haidas were enumerated in 1891.

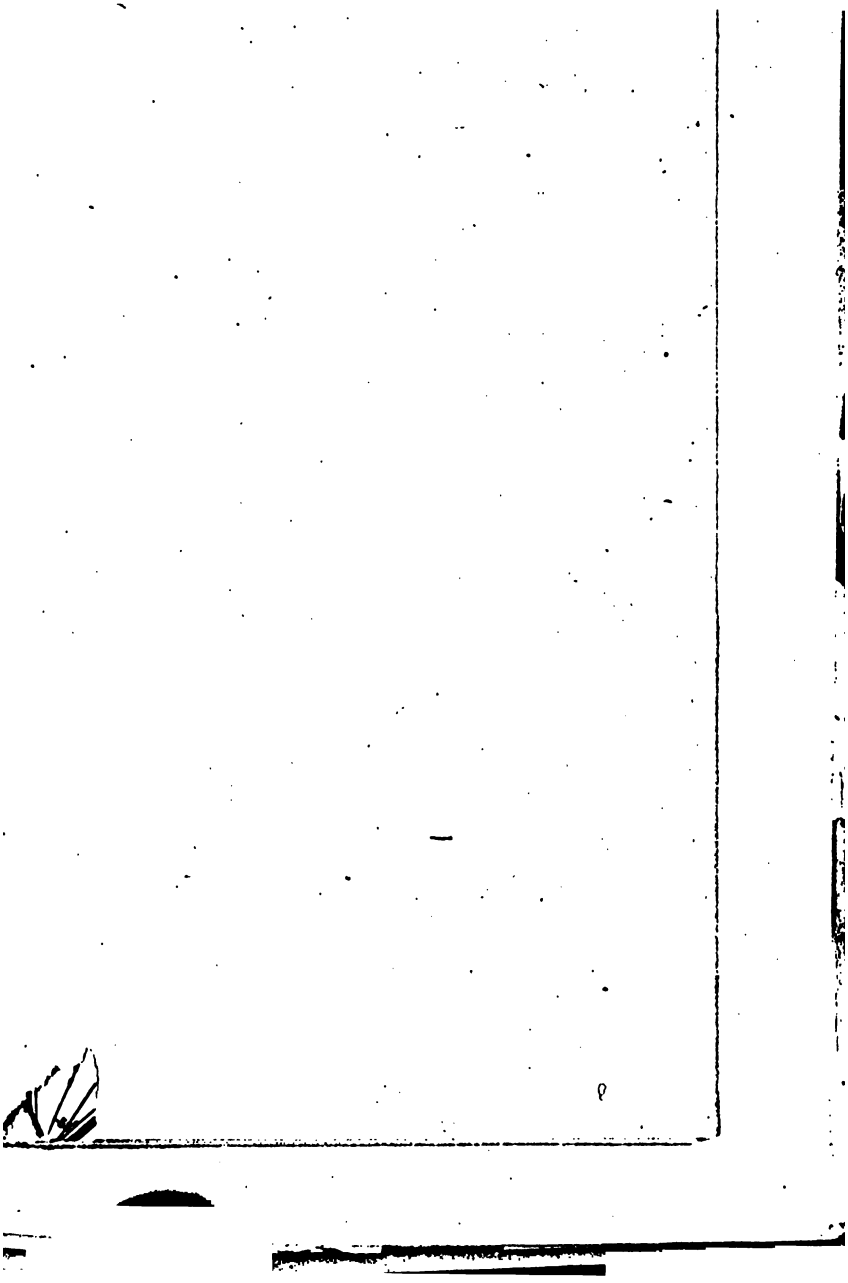
The Haidas are the fine flower of the native races of the coast. They are taller, fairer, with oval faces and more regular features than any of the Columbian coast tribes, and are nearer to the Tlingit than to any other people. They are aliens to the Tlingits, and differ from all their neighbours physically and mentally, in speech and customs, and many similarities are more often the result of Haida influences. The Tlingits call them *Dē-Kinyo*,* "people of the sea"; and these Pacific Northmen rivalled the earlier Vikings in their journeys to distant shores. The Vancouver and Puget Sound country were their Britain and their Normandy, and coppery Erics and Harolds swept the coasts, attacking native villages, Hudson Bay Company posts, and white settlements. They once seized a schooner in Seattle harbour and murdered all on board, and Haida was a name of terror.

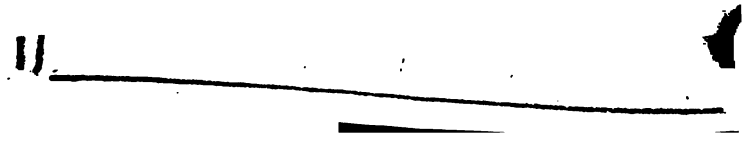
Their origin is the puzzle of ethnologists. They have the tradition of a deluge and a sole surviving raven, from whom sprang *Qu-a-eda*, "the people," as they call themselves, and from which came the Tsimsian word *Haida*. One tradition makes *Forrester's Island*, farther out in the ocean, the cradle of their race. Those who incline to Marchand's theory of an Aztec origin identify them as the descendants of those whom Cortes drove out of Mexico, and who vanished in boats to the N. Their legend of the thunder-bird is the same as the Aztecs and Zuñis. They have images and relics similar to silver images and objects found in Guatemalan ruins. They have modern Apache words in their speech, many of the same dances, masks, legends, and picture-writings as the Zuñis. Their resemblance to the Japanese is quite as marked, and as the Kuro Siwo touches so directly on the Queen

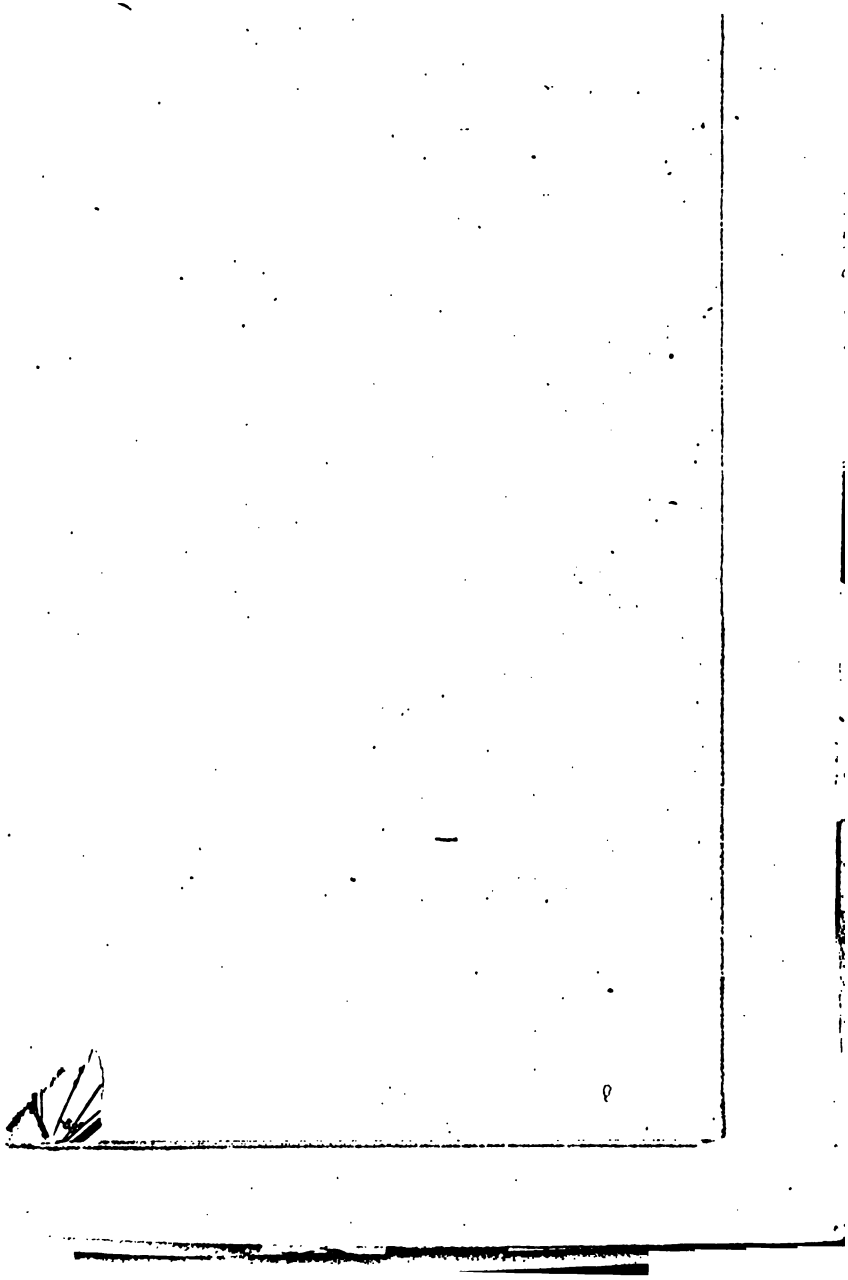
* Franz Boas, Report of 1889 to the British Association for the Advancement of Science.

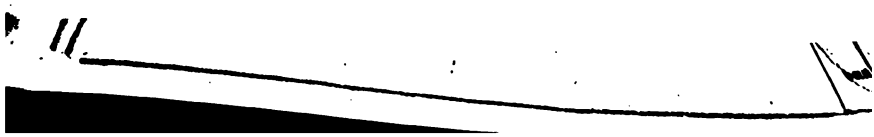
Charlotte shores, more junks may have been stranded here than elsewhere, during those centuries when the Japanese built sea-going junks and travelled afar. They have Japanese words in their speech, they sit at all their work, they cut towards them in using tools that are the same as Japanese use to day. Like their æsthetic cousins over the sea, they are imitative and adaptive rather than originative, and they improve, elaborate, and refine upon all they borrow. In many of their customs, in their bark weaving and their carved columns, they are akin to New Zealand and South Sea people. Whether they copied the totem-pole from those before the houses in the mysterious city sunk in the sea, from the New Zealand *tiki*, or from the Kwakiutls' simple heraldic pole, they have carried it to its finest development. Forests of these columns stand in their old villages, their only records and monuments of any past, brief pictographic chapters in Haida history, genealogy, and folk-lore—a rude and monstrous heraldry, an elaborate symbolism, a system of colossal hieroglyphs. The pure heraldic columns, the *kechens* or door-posts, formed part of the old houses themselves, and the inmates entered by an oval hole hewn at the base of the column. The *chat*, or mortuary column, was a smooth pole surmounted with the great totem of the dead man, and as often with a box or a hollowed space containing the ashes. There are forty splendid poles at *Massett* or *Uttewas* village, as many more in the villages around the inlet; fifty-three poles at Skidegate; the finest collection of all at *Lankeek* on Tanoo Island, and many at *Cumshewa* and *Skedans*.

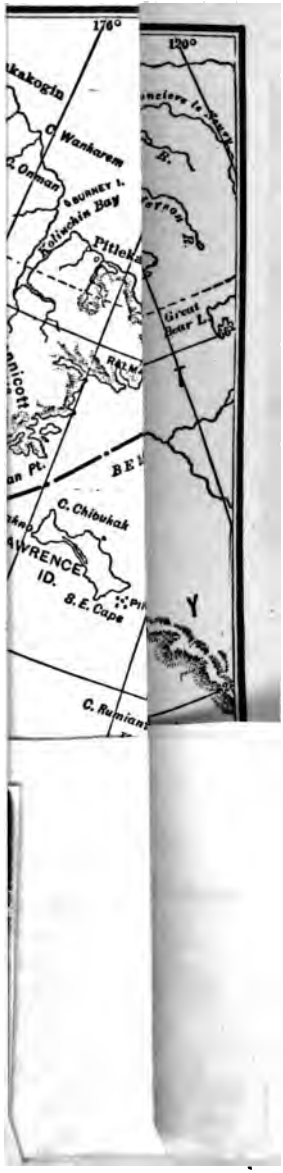
In 1878 Dr. George M. Dawson made a geological survey of the islands, examining the bituminous coal-veins on Graham Island, and the authracite deposit near Skidegate. His "Monograph on the Queen Charlotte Islands" was embodied in the Annual Report of the Director of the Canadian Geological Survey for 1879, and is a text-book for the islands and their people. An interesting paper on "The Haidas," by Dr. Dawson, was published in Harper's Monthly, August, 1882. In 1883 Hon. J. G. Swan, of Port Townsend, spent several months canoeing around the W. coast and visiting the villages to study Haida tattoo, masks, carvings, and heraldic paintings for the Smithsonian Institution, which had published his earlier studies in that line as No. 267 of Smithsonian Contributions to Knowledge, January, 1874. In 1884 Mr. Newton H. Chittenden made an exploration of the islands for the Government of British Columbia, and his pamphlet, "Hyda Land and People," contains a most interesting *résumé* of his work.







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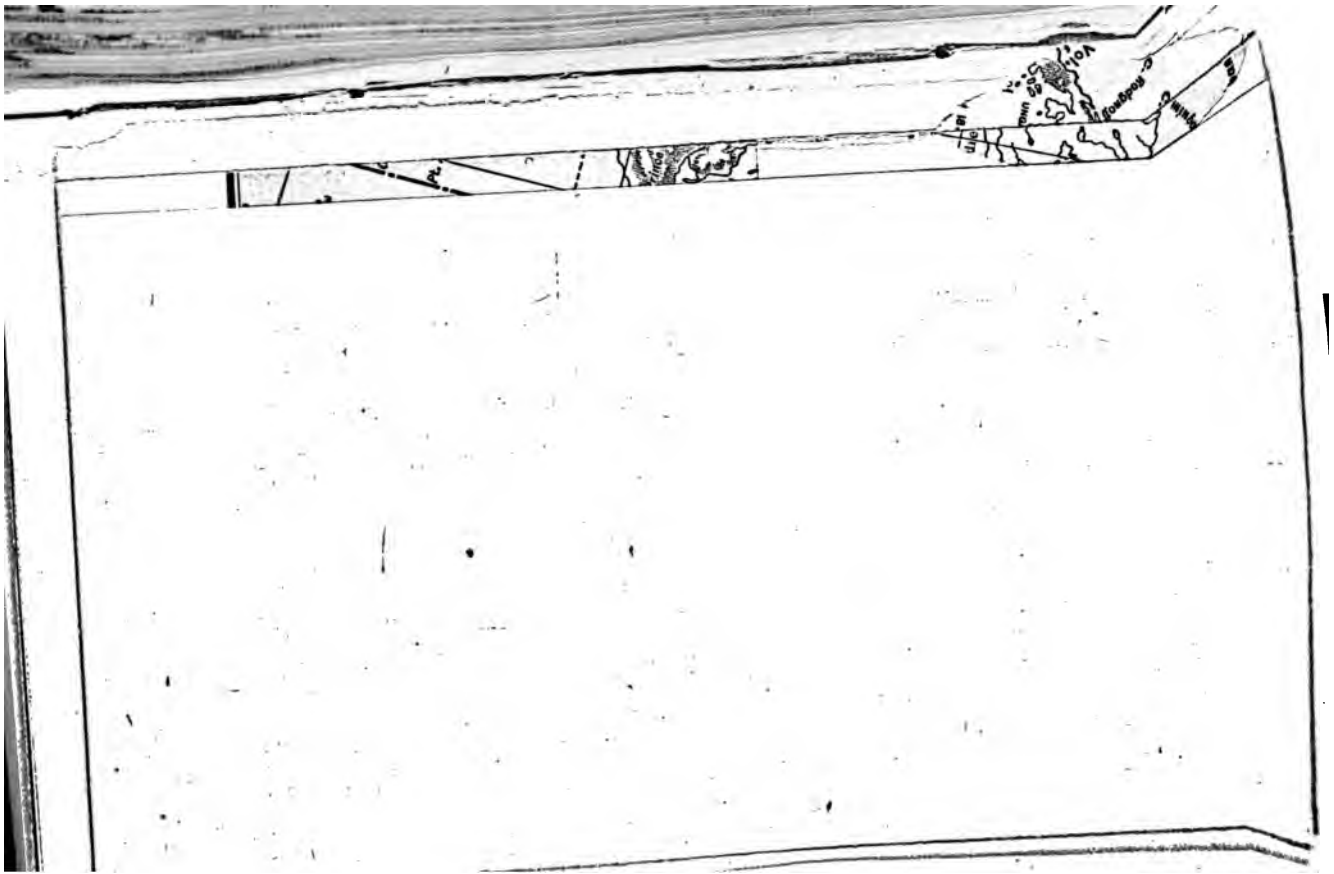


ALASKA.

(*See General Map of Alaska.*)

Alaska itself is nine times the size of the New England States, twice the size of Texas, and three times as large as California. It stretches for more than 1,000 miles from north to south, and the Aleutian Islands trailing over into the Eastern hemisphere make the half-way point of the United States a little W. of San Francisco. The island of Attu is over 2,000 miles W. of Sitka, and the distance from Cape Fox to Point Barrow is as great as from the north of Maine to the end of Florida. Alaska contains 580,107 square miles, with a coast-line of 18,211 miles, greater than the coast-line of all the rest of the United States. The 1,100 islands of the *Alexander Archipelago* have an estimated area of 31,205 square miles, and the *Aleutian Islands* comprise 6,391 square miles. The Cordilleran mountain system is merged in one great range at the Alaskan line, and a host of lofty peaks surround Mt. St. Elias, the highest mountain on the continent, and sentinel of the third highest range in the world. Curving down to southwestward a line of volcanoes joins those of the Kurile Islands and of Japan, and completes the Pacific's "ring of fire." Low ranges and leagues of tundra stretch to the Arctic. The southeastern Alaska, which tourists know, is but the handle of a dipper, and residents "to westward"—i. e., Unalaska and beyond—hardly consider a visit to the Sitkan region as going to Alaska.

The United States bought this vast country from Russia in 1867 for less than half a cent an acre. Dr. Dall's figures* show that Alaska was a paying investment, returning a clear net profit of 8 per cent upon the first cost for the first five years. The two tiny Seal Islands paid 4 per cent on the original $7,200,000, and in their first lease returned a sum equal to the purchase money to the Treasury. The gold-mines have since added an equal sum to the wealth of the world, and the salmon industry yielded $7,500,000 in six years, 1884 to 1890. It is the most sparsely inhabited part of the United States, averaging one inhabitant to each 19 square miles. Its lands have never been made subject to entry, save mineral claims; it has no representation at Washington; Congress refuses to provide a suitable or efficient form of government; there is no military post within its

* See Harper's Magazine, January, 1872.

borders, and no telegraphic communication; but by the spirit of the people it gains slowly, and the last frontier is moving northward.

The population of Alaska is classified as follows in the eleventh census (1890):

Whites	4,303
Mixed (Russian and native)	1,819
Indians	23,274
Mongolians	2,287
All others	112
Total	31,795

The Indians are again divided as follows:

Eskimo	12,784
Thlinket	4,739
Athabaskan	3,441
Aleut	908
Tsimpsean	951
Hyda	391
Total	23,274

CLIMATE OF SOUTHEASTERN ALASKA.

"BERLIN, September 5.—We have seen of Germany enough to show that its climate is neither so genial, nor its soil so fertile, nor its resources of forests and mines so rich as those of southern Alaska."—WILLIAM H. SEWARD, Travels Around the World, Part VI., chap. v., page 708.

In climate and all physical features southeastern Alaska is a repetition of southern Norway, enjoying, however, a far richer forestation. In latitude, configuration, temperature, rainfall, and ocean currents it is identical. During the thirty-six years that the Russians kept meteorological records at Sitka the mercury went below 0° F. but four times. While St. John's, Newfoundland, is beleaguered by icebergs in summer and its harbour is frozen solid in winter, Sitka, 10° N. of it, has always an open roadstead, and only the ends of the longer fiords are ever closed by ice. Sitka Castle, lying 17′, or 3 miles, N. of Balmoral Castle in Scotland, has a higher average winter temperature than the Highland home. Sitka's mean temperature for the year is 43·3 against Bergen's 44·6. The snow rarely lies on the ground for any time at sea-level, mist and rains soon reducing it to slush, as in Kentucky or the District of Columbia, the isothermal equals of this region. The snow-line on the mountains is at 2,500 and 3,000 ft. Skating is a rare pleasure for Sitkans, and the Russian bishop told Mr. Seward how delighted he was to come and live in "such a nice, mild climate."

The winter of 1879–'80 was the most severe known in the century; 3 ft. of snow remained on the level for three months, and the mercury fell to —70°, as in Dakota or Montana.

The mean temperature of the air and of the surface sea-water and the precipitation for each month of the year at Sitka are thus given by the United States Coast and Geodetic Survey in its Alaska "Coast Pilots" of 1883 and 1891:

	Temperature of the air.	Temperature of surface sea-water.	Precipitation.
January	31·4	39·0	7·35
February	32·9	39·0	6·45
March	35·7	39·5	5·29
April	40·8	42·0	5·17
May	47·0	46·5	4·13
June	52·4	48·0	3·02
July	55·5	49·0	4·19
August	53·9	50·0	6·06
September	51·5	51·5	9·06
October	44·9	48·9	11·83
November	38·1	44·4	8·65
December	33·3	41·7	8·39
Year	43·3	45·0	81·69

The old residents insist that the climate is changing; that the summers are warmer and drier than formerly; and that, allowing for the different hours at which Baron Wrangell and his successors took the temperature, the records show three degrees increase of average temperature since 1835. The rapid retreat of all the tide-water glaciers during even 20 years is offered as another proof, and there was only one of the old-style, perpetually rainy summers in the decade 1880–'90.

The greater Gulf Stream of the Pacific and the loftier mountain ranges give southeastern Alaska a greater rainfall than southern Norway. Bergen's annual 72·25 inches and the Nordfiord's extreme 78 inches are exceeded by Sitka's annual 81 inches, and Fort Tongass's 118·30 inches—all exceeded, however, by Cape Flattery's 140·9 inches in 1885–'86. There have been wet seasons in Alaska of 285 and 340 rainy days. This heavy precipitation gives the mountains their shining crowns, feeds the glaciers, forces the luxuriant vegetation, brings every leaf and twig to its fullest perfection, and keeps the foliage so fresh and dewy that at times the green sparkles and almost dazzles one with its intensity. With all the down-pour or drizzle of days, there is nothing like that soul-piercing, marrow-penetrating dampness, that awful chill of the ocean that creeps into Atlantic cities far to southward. Guns do not rust; cigars and tobacco do not mould or mildew. Clothes dry under a shed on the rainiest days, even under awnings on shipboard; and the tourist finds that his gloves and shoes show no reluctance in being pulled on on wet mornings.

There is a blessed immunity from thunder-storms, and the rare displays of thunder and lightning in the midst of winter hail and snow-storms frighten the Indians greatly. There are fine auroral displays in the long winter nights; but no one remembers seeing any such electric exhibitions as enlivened the early years of the century, when Langs-

dorff mentions the air being so charged with electricity that bluish green balls of fire—St. Elmo lights—danced on the bayonet tips of the muskets and the metal heads of the flagstaffs on the palisade. In this century one great earthquake at Sitka split off the front of Verstovoi, another razed the citadel, and slight tremblings have been felt at times, notably during great storms. Two great cyclonic storms have occurred since the transfer of the country. One occurred just after that ceremony when Sitka harbour was crowded with ships. All dragged anchors, two were wrecked, and the man-of-war bearing the U. S. Commissioners home nearly foundered off Cape Ommaney.

The next great hurricane came October 26, 1880, 13 years to the day after the transfer cyclone. It was accompanied by heavy earthquake shocks. Captain Beardslee reported 14 revolving gales which passed up the coast during his command at Sitka, estray typhoons that belonged on the other side of the ocean.

With Norway, Scotland, and Ireland to prove the contrary, it is often asserted that grain and vegetables cannot be grown in Alaska. Baranof cleared 15 kitchen gardens in 1805 and ripened barley and potatoes, and common vegetables, as has been done every year since. Fine grasses spring naturally on any clearing; wild timothy and coarser grasses grow 3 and 4 ft. high, and clover thrives unheeded. Vancouver found the natives cultivating potatoes and a kind of tobacco, and each family had its little plantations in sheltered nooks where they sowed their tubers like grain, and gathered them the next winter or spring. There were gardens on either side of the stockades at Sitka which provided fresh vegetables, and hot-house frames secured the Russians many delicacies.

In United States days residents have successfully raised radishes, lettuce, carrots, onions, cauliflower, cabbage, peas, turnips, beets, parsnips, and celery; and single potatoes have weighed 1 pound 5 ounces. Vegetables are raised every year at Yukon missions and trading-posts. Hay has been cured in southeastern Alaska every summer since 1805, and by adopting Norwegian methods larger crops could be better cured.

In Norway wheat is cultivated as far N. as 64°; rye up to the line of 69°; barley and oats as far N. as 70°; apples, plums, and cherries to 64° and 65°; and wild raspberries, strawberries, currants, and gooseberries up to the North Cape, 71° 10′. The length of the summer days compensates for the lower temperature, and there is usually a fortnight or more of really hot weather in the Sitkan region each summer—a fortnight of hot days 18 hours long, in 1891, with the mercury passing 80° every noon, and reaching 93° on board the U. S. S. *Pinta*. Norwegians long ago discovered that seeds and plants from southern Europe had to be acclimated for two or three years before yielding a good crop. Even maple-trees undergo a change when transplanted from southern to northern Norway, the nightless days forcing the leaves to an enormous size, while the tree itself is low and stunted, and all common wild flowers attain unusual size and colour in the northlands.

THE NATIVE RACE OF SOUTHEASTERN ALASKA.—THE TLINGITS.

The 11 tribes of Tlingits inhabiting the coast and islands of southeastern Alaska were roughly estimated by the Russians as numbering from 25,000 to 30,000. General Halleck's estimate of 1869 gave 12,000 or 15,000. The census of 1880 enumerated 6,487 Tlingits; that of 1890 but 4,457. Epidemics of small-pox, black measles, and grippe, with the vices of civilization, have thus depleted their ranks.

The word *Tlingit* is their name for "man," "people." The Russians called them *Koloschians*, from the Aleut name Kalushka (little trough), for the labiette worn in the lower lip. There are as many separate traditions of a supernatural origin, a deluge, and a sole surviving couple as there are tribes of Tlingits. There is no legend to point distinctly to trans-Pacific origin, but many tell of a migration from the S. E., the Nass River country.

Their propitiation of evil spirits, their shamanism, their belief in the transmigration of souls, their worshipful regard for the spirits and ashes of their ancestors, are essentially Asiatic. Some of their myths, their carvings and constructions, and many words, are Aino; their methods, tools, and postures at work are Japanese. Their totem-poles are kin to the New Zealand *tiki* and the Easter Island images; and there are many resemblances to Maori and South Sea people. Their sun-worship, their Nature-worship, with offerings to mountains, winds, and glaciers, are nearly Aztec, and the same Thunder Bird reigns from the Isthmus of Panama to the end of Tlingit land. They have the same dances and masks as the Zuñis, the same totems as the Hurons, Delawares, and Omahas. They are nearest to the Haidas, but have much in common with Tsimsians and Kwakiutls, and are greatly superior to the Salish. They are totally different stock from the interior or Tinneh tribes, of whom all Tlingits speak contemptuously as *Stik* Indians.

Totemism is the base of their social organization, the totem or tribal mark distinguishing the dwelling and every belonging of these people. Only animal totems occur, and they live under the protection of and are inspired by these guardian animals, who are often believed to have been the ancestors of the race. The crow or raven, representing woman, the creative principle, and the wolf, the aggressive or fighting creature, are the great totems of the coast, and each are subdivided into clans. Men do not marry women of their own totem. The totemic is stronger than family or tribal bonds. Men often elect individual totems, usually the animal seen or dreamed of during their lonely fasts in the woods preceding their majority and their initiation into the rites and great ceremonies of the clan. These elective totems, added to the clan and family totems, account for the storied images on the totem-poles. The totem-pole has no religious significance, and is not an object of idolatrous worship. Its heraldic designs and quarterings are displayed in the same way and for the same reason that a European parades his crest and scutcheon. The Tlingits understand the

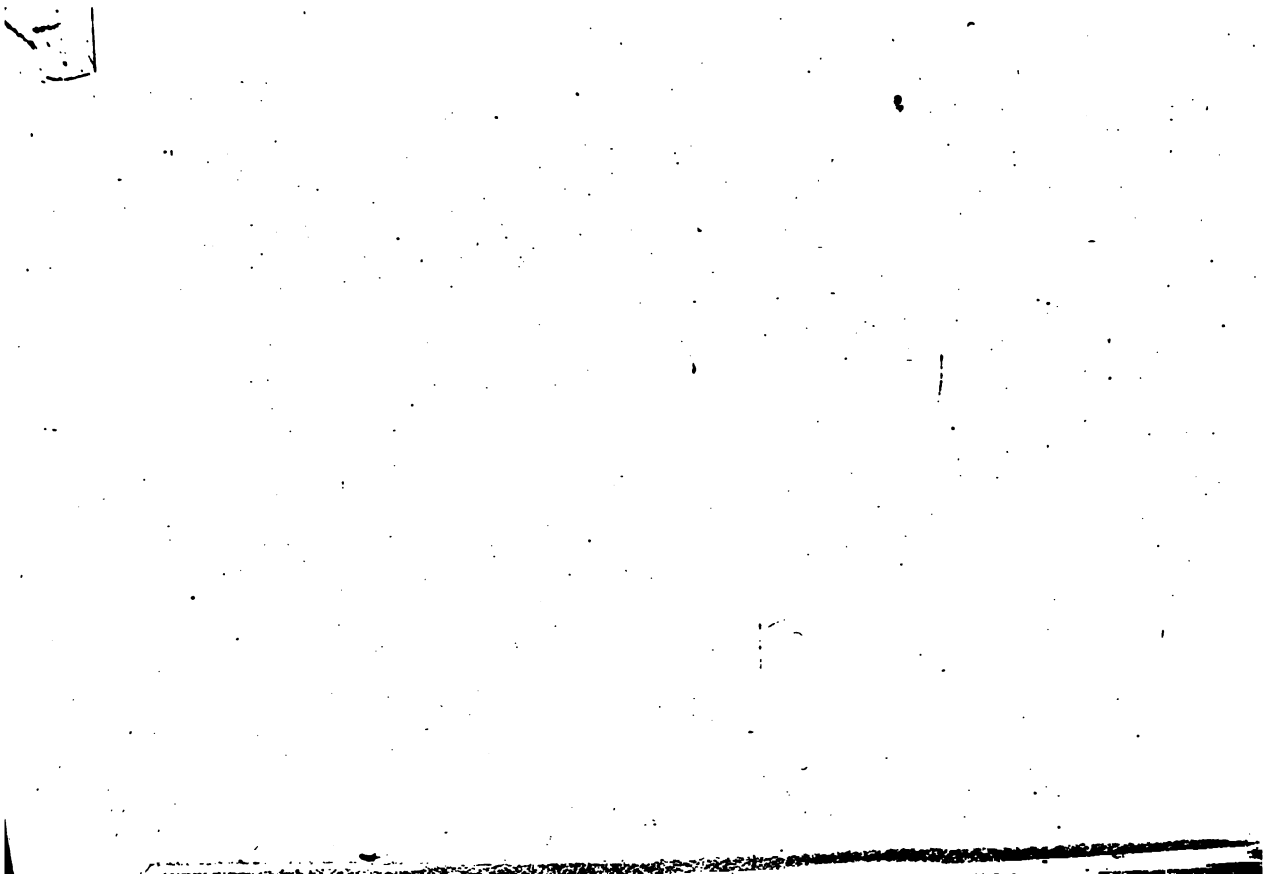
spread eagle to be the "Boston man's" totem, and the lion and the unicorn the two totems of the "King George men." Their bears, whales, frogs, and wolves are no more difficult to recognize in their rigidly conventionalized carvings than the griffins, dragons, and *fleur-de-lis* of European heraldry.

Frazer's small volume, Totemism, Edinburgh, 1877, is a text-book, and those interested in pursuing the subject in its wide range will find it discussed in the following works: E. Clodd, Myths and Dreams; Encyclopædia Britannica (Frazer), Totemism and Sacrifice; Sir John Lubbock, Origin of Civilization; Andrew Lang, Custom and Myth; A. P. Niblack, The Coast Indians of Southern Alaska and Northern British Columbia; Sayce's Introduction to the Study of Early Languages; W. Robertson Smith, Kinship and Marriage in Early Arabia; E. B. Tylor, Anthropology, Early History of Mankind.

Tlingit speech has been studied and vocabularies made by Dixon, Marchand, Lisiansky, Wrangell, Veniaminoff, Furuhelm, Emmons, and Boas, with many notes of their idioms and constructions, translations and notations of their songs. The common speech is much corrupted by Russian, English, and Chinook. Lieutenant Emmons has found evidences of an older language, a classic to all Tlingits. Mr. Charles Walcott noted "the Japanese idioms, constructions, honorific, separative, and agglutinative particles." Like the Japanese, the Tlingits cannot pronounce *l*; like the Chinese and the ancient Mexicans, they cannot pronounce *r*. Dr. Boas finds the labials all absent from Tlingit, which has no grammatical sex and no forms for plural. Captain Cook first noticed the many terminations like the Aztec *tzl*, more marked in Haida; and Dr. Dawson employs in Haida words the Greek χ to express a stronger palatal than English affords. Tlingit is the harshest of all coast tongues. Horatio Hale has noted that all these harsher languages cease at the Columbia, where the coast climate changes so markedly. The Northwest Coast is the rainiest part of the world with a climate of perpetual April or October, and these people spend their lives in canoes. "Their pronunciation is that of a people whose vocal organs have for generations been affected by continuous coughs and catarrhs, thickening the mucous membrane and obstructing the air-passages."* It has been compared to the Del Fuegian speech of which Darwin has said: "The language of these people, according to our notions, scarcely deserves to be called articulate. Captain Cook has compared it to a man clearing his throat, but certainly no European ever cleared his throat with so many hoarse, guttural, and clicking sounds." Any one attempting to record Tlingit words by phonetic signs is baulked by sounds impossible of imitation, aspirates and gutturals past conveyance by our signs. Charles Warren Stoddard has called Tlingit "a confusion of gutturals with a plenitude of saliva—a moist language with a gurgle that approaches a gargle, ... and the unaccustomed ear scarcely recovers from the shock of it."

* Proceedings of the British Association for the Advancement of Science, 1890.

Tlingit Woman.



In common with all Northwest Coast people, the Tlingits have inherited a magnificent development of the shoulders, chest, and arms from generations of canoe-paddling ancestors, but the rest of the body is stunted and deformed, and all are bow-legged and pigeon-toed, shuffling, shambling, and moving as awkwardly as aquatic birds on land. Their mental superiority to the Tinneh of the interior and the plains tribes of the United States may be the result of their exclusive fish diet. It was never Tlingit fashion to flatten or elongate the skull, their mutilations comprising tattooing, and the wearing of labrettes, nose and ear ornaments. The Labrette was formerly the woman's badge of age, rank, and condition, but is only seen on older women now. Young girls are still, as formerly, "brought out" and introduced socially as any *débutante* among Caucasians. The *débutante's* lower lip was formerly pierced and an inch-long copper or silver pin worn, until replaced by a small bone or wooden stud after marriage, which gradually increased until dowagers wore a huge block or plug—"a wooden bowl without handles," La Pérouse says—that measured two or three inches across. Captain Cook's men called him to see the Aleut who, having removed the labrette, was supposed to have two mouths. Captain O'Dowd told Langsdorff of a chief's wife in Chatham Strait who could conceal her whole face by a dexterous turn of the lip holding an enormous labrette.

TLINGIT CUSTOMS.

In earlier days painting and tattooing were universal. They paint now only for great dances and potlatches, but continue to black their faces as a summer protection from tan and insects. This coating of soot and seal oil has been mistakenly called a badge of mourning. Governor Swineford forbade face-blackening, and punished offenders, while Rangeley and Adirondack fishermen were permitted to use tar oil and fly ointment; and climbers of Mt. Rainier blacked their faces upon reaching the snow-line.

There are often fine exceptions to the regulation flat, heavy-jawed, and high-cheeked faces; and women often show strong, eagle-visages of more regular mould. These family arbiters and tyrants are hardest of bargainers, and contemptuous of man's interference. Marriages are arranged by the elders for the best advantage of the clan and family, and while woman is supreme, all wealth and power descending through her, polygamy is practised. Upon a man's death his widows pass to the next heir in his mother's family. Younger brothers and nephews, inheriting such widows, may purchase freedom by blankets.

The Tlingits have their political societies, with honours as often bestowed upon humble worth. All of the totem contribute to the potlatches of their chief, working and saving for years to make an extravagant display and division of wealth. The potlatch is usually given at the full of the moon, and the host's clan and totem do not accept any gifts. The seating and serving of the guests are as precisely ordered as at a court function, and bloodshed follows any oversights. Hospitalities are returned in kind, and the social ledgers of the totems regularly balanced.

In early times they were incessant dancers; songs, chants, and dramatic representations accompanied all welcomes, partings, feasts, fights, funerals, and visits. Trading was not a mere mercenary transaction when a line of canoes advanced, circled, and manœuvred around a ship; painted men in ceremonial dress, powdered with the eagle-down of peace, chanted in chorus, and the chiefs delivered recitatives and obligatos. Boston traders gave them rum, and a deserter of a whaler's crew and a discharged United States soldier have credit for teaching them to distil *knockinoo*, or native drink. They have many games of chance, the favourite being a crude *fan tan* played with 52 cylindrical sticks with different marks. The sticks are either drawn and matched, or players guess the position, number, or odd and even of the sticks the dealer hides under a mass of cedar shreds. Pools and individual stakes are made and sticks cashed by the winners by a regular tariff. The dealer chants, and the players join in; and when all a Tlingit's wives, canoes, slaves, blankets, and *tows* are hanging in the balance, the whole lodge swells the frantic chorus. Playing-cards are much used, and in summer one may find poker parties playing all day on the beach and utilizing the midnight light. Their first tokens of wealth were the *tows*—curved copper shields ornamented with totemic cuttings, said to have come originally from the Chilkats, and said to be imitations of the copper plates nailed to conspicuous trees by the first Russian discoverers. A *tow* was worth $800 to $1,000 by the blanket scale—a "two and a half point" H. B. Co. blanket counting for $1.50—and often sold for ten slaves. Hiaqua shells were retired from circulation when a Yankee had imitations made of porcelain; and the Russians for a long time gave a leather money. Coin only came to them after the transfer. Silver is highly valued, and stored in bulk or beaten into ornaments.

The whites have had to yield to Tlingit ideas of justice and totemic laws: an eye for an eye, a tooth for a tooth, or a material equivalent, are strictly demanded. A blanket indemnity will solace any wound to pride, honour, or affection, and their logic follows every loss and injury to first causes. The Tlingit who shot at a decoy duck made the decoy owner pay for the cartridges; the otter hunter, rescued from a broken and sinking canoe, demanded the value of the canoe when set ashore; the relatives even of a burglar made the owner of the stolen rifle pay for the burglar killed by its accidental discharge. White doctors pay for any dead patients whom they have treated; and when Baronovich accidentally shot his own child, he himself had to pay the Whale totem, or his wife's clan, so many hundred blankets, or be killed himself to balance the account.

In illness the Tlingit sent for his *shaman* or medicine-man, who, continuing his fasts alone in the forest throughout life, continued to receive inspiration from his guardian and familiar animal spirits. In frantic parades and dances about a village, a shaman bit live dogs and ate the heads and tongues of frogs, which contained a potent medicine. He performed his miraculous cures under the spell of his special totemic spirit, and an emetic of dried frogs and sea-water gave him a

vision to perceive the soul leaving a man's body, ability to catch and replace it, and cast out the evil spirits which had possessed the patient. When the chant, dance, and hocus-pocus failed to cure, the shaman denounced some one for charming or bewitching his patient, and demanded his torture or death. Usually the infirm or the aged poor, slaves or personal enemies, were denounced and subjected to fiendish tortures. Captain E. C. Merriman, U. S. N., broke the power of shamanism in the archipelago by repeated rescues of those charged with witchcraft, by fine and punishment of tribe and shamans, and finally by taking the shamans on board his ship, shaving off and burning their long sacred hair and sending them out bald-headed, to be met with roars of Tlingit laughter. There have been few cases of witchcraft since.

While all other Tlingits were cremated, so as to make sure of a warm and comfortable future, they believed that the shaman's body would not burn, and such were buried in sitting posture in little pavilions in remote and picturesque spots surrounded by the blankets, tows, masks, wands, rattles, and paraphernalia of his trade. Shamans' graves have yielded richest treasures for ethnological museums. Other Tlingits were cremated with elaborate ceremonies, the wailing, pyre-building, etc., always conducted by people of another totem, and the ashes and bones stowed away in a carved grave-box or canoe, or niched in mortuary columns. Personal possessions and food for use in the spirit-land were buried with the dead, and often a slave was despatched so as to attend his master beyond. The missionaries have effectually broken up the practice of cremation, on the grounds of heathenism, and inhumation is now practised. The Tlingits believe that after death the spirits take possession of the bodies of animals, revisit their homes, and teach the mysteries of life to fasting youths in the forest. Earthquakes are caused by ghosts, and the aurora borealis is the ghost-dance of dead warriors who live in the plains of the sky, from which the earth was cut loose and fell to the sea.

They have their lucky and unlucky numbers, their signs and marks for the propitiation of evil. They saw outlines in the constellations, and had their names and legends for these otter-skins and bailers in the sky.

Their folk-lore, myths, and traditions reveal a poetry and richness of imagination not to be expected from these stolid people.

The *Crow*, in whom lives Yehl, the great spirit and creator, first dwelt on Nass River, where, having created himself and the world, he turned two blades of grass into the parent race. The Tlingits increased and became a great people, and spread far and wide. Suddenly darkness came, and all life stopped. A Tlingit stole the sun and hid it in a box on Japonski Island, but the Crow found it, and, flying off with it, set it so high in the sky that none could steal it again. Again the Tlingits increased and spread abroad, but after many generations there came a great flood, and all perished save two Tlingits who were long tossed about on a raft, until the crow appeared and carried this pair to Mt. Edgecumbe, where they lived until the waters fell. It is related in some versions that another raft of people was borne

away to the southwestward by the flood and that they are the parents of the other races of the earth. Then, again, it is said that the two survivors of the flood were supernatural creatures, one of whom descended through the crater of Mt. Edgecumbe and there stays to hold the earth up out of the water, while the other lives as the great Thunder Bird Hahtla, who dwells in the crater, the flapping of whose wings is the thunder and whose glances are lightning. Hahtla is personated by the osprey, who rides the storms and seizes the salmon from the waters, and his inverted face glares from ceremonial blankets and carved boxes. The visit to heaven and the stealing or killing of the sun is common to all the Northwestern people, and Dr. Frax Boas gives several variations of it current among the Kwakiutl and other British Columbian tribes.

THE INTERNATIONAL BOUNDARY LINE.

"*Fifty-four Forty.*"

Bodegay Quadra named the great strait *Perez Inlet* in 1775, but Vancouver preferred that it should be Captain **Dixon's Entrance**, as named for and by that commander of the *Queen Charlotte* in 1787. It has also been known as *Granitza Sound* and *Kygane Strait*. It very evenly divides the Northwest Coast, and with its prolongations runs a natural water boundary far inland.

At this entrance, 600 miles N. of Boundary Bay and the forty-ninth parallel, one re-enters the United States, the once northern boundary of the Oregon Territory becoming the southern boundary of Alaska. Succeeding the Nootka Convention of 1790, the Northwest Coast became virgin soil open to free settlement and trade by any people, and three nations claimed it. The Russians asserted ownership down to the Columbia, and then withdrew to 51°, or to the north end of Vancouver Island. The British claimed the coast from the Columbia River to 55°, and the United States claimed all W. of the Rocky Mts. between 42° and 54° 40'. In 1818 the United States and Great Britain agreed to a joint occupancy of the region, and in 1819 the United States bought Florida from Spain, and with it acquired all of Spanish rights and claims on the coast N. of 42°. By the number of its trading posts and vessels regularly visiting the coast, the United States was virtually in possession of the region, but British fur-traders were pushing westward from the interior.

The Emperor of Russia, by his ukase of 1821, forbidding all foreign vessels from approaching within 100 Italian miles of his possessions in the North Pacific, purposely brought about the conventions of 1824–'25 to adjust the rival claims to North American territory and to regulate trade. By the treaty of 1824 with the United States, and that of 1825 with Great Britain, Russia agreed to 54° 40' as the southern limit of her possessions, and allowed the vessels of the other two nations to freely trade for a period of ten years. The useless and uninhabited interior was parcelled out in even thirds—Russia taking the north-

western or Yukon region, England the Mackenzie region and all between Hudson Bay and the Rocky Mts., while the Oregon territory, all W. of the Rockies and N. of 42°, was claimed for the United States. In 1828 the joint occupation of the Northwest Coast by the United States and Great Britain was indefinitely extended. In 1837–'38 societies for emigrating to Oregon were formed in the United States, and in 1843 that great waggon train with a thousand people crossed from the Missouri River to the Columbia, and the country demanded the immediate settlement of the northwestern boundary. President Tyler, in his annual message to Congress in 1843, declared that "United States rights appertain to all between 42° and 54° 40′". Slave interests were then negotiating for Texas, and, to gain it without interference, Calhoun was discussing a settlement with the British minister with the forty-ninth parallel as the Oregon boundary, which the latter rejected, as his predecessor had in 1807 when Jefferson had proposed the same line. The Whigs and Henry Clay counselled moderation and compromise, but the Democrats raised the war-cry of "Fifty-four Forty, or Fight!" and elected Polk as the champion of that cause. In his inaugural message President Polk said, "Our title to the country of Oregon is clear and unquestionable," and in his first message he declared for "all of Oregon or none." Yet through party spite and bickerings, the hatred of Lewis Cass, who led the "Fifty-four Forty" party in Congress, President Polk and the Southern Democrats retreated from their position, and on June 15, 1846, Secretary Buchanan concluded the famous Oregon Treaty with Minister Pakenham on the same terms—the line of the forty-ninth parallel—as offered by Calhoun two years before and by Jefferson forty years before.

Thomas H. Benton gives his own views and defence of this retreat from the first position of his party in regard to the *Oregon Question* in his Thirty Years in the United States Senate. The clearest summing up of the situation is given by Mr. Blaine in his Twenty Years in Congress, vol. i., chap. iii.; and later (chap. xiii.) he says: "Meanwhile, . . . we lost that vast tract on the north known as British Columbia, the possession of which after the acquisition of Alaska would have given to the United States the continuous frontage on the Pacific Ocean, from the southern line of California to Bering Strait."

By the treaties of 1824–'25 the limits of Russian possessions are thus defined, and the same articles were repeated in the Treaty of Washington of 1867:

"Commencing from the southernmost point of the island called Prince of Wales Island, which point lies in the parallel of 54 degrees 40 minutes north latitude, and between the 131st and the 133d degree of west longitude (meridian of Greenwich), the said line shall ascend to the north along the channel called Portland Channel, as far as the point of the continent where it strikes the 56th degree of north latitude; from this last-mentioned point the line of demarcation shall follow the summit of the mountains situated parallel to the coast as far as the point of intersection of the 141st degree of west longitude (of the same meridian); and finally, from the said point of intersection,

the said meridian line of the 141st degree, in its prolongation as far as the Frozen Ocean.

"IV. With reference to the line of demarcation laid down in the preceding article it is understood—

"1. That the island called Prince of Wales Island shall belong wholly to Russia" (now, by this cession, to the United States).

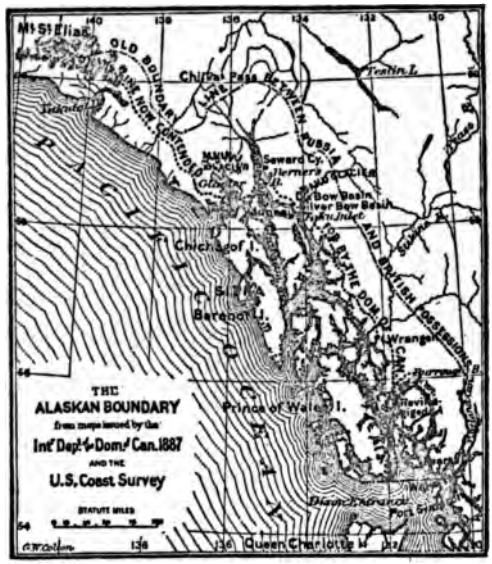
"2. That whenever the summit of the mountains which extend in a direction parallel to the coast from the 56th degree of north latitude to the point of intersection of the 141st degree of west longitude shall prove to be at the distance of more than ten marine leagues from the ocean, the limit between the British possessions and the line of coast which is to belong to Russia as above mentioned (that is to say, the limit to the possessions ceded by this convention) shall be formed by a line parallel to the winding of the coast, and which shall never exceed the distance of ten marine leagues therefrom."

The boundary line from Mt. St. Elias to Portland Channel has not been surveyed nor determined. For the last twenty-eight years of Russian ownership the "Thirty-mile Strip," as it was called, was leased to the Hudson Bay Company, who paid an annual rental for the territory Canada now claims as partly her own.

The recent growth of Alaska and British Columbia has made the international boundary a question of moment and interest, and "Fifty-four Forty" may again become a campaign slogan.

During the Fisheries Conference at Washington in 1887–'88 an informal discussion of the Alaska and British Columbia boundary was conducted by Dr. W. H. Dall, of the Smithsonian Institution, and Dr. G. M. Dawson of the Dominion Geological Survey, both scientists of first repute, and both personally acquainted with the regions under discussion. Dr. Dawson presented a new map showing the boundary line claimed by his Government, as drawn by Major-General R. D. Cameron, which narrows the thirty-mile strip to five miles in width in many places, and absorbs it entirely as part of British Columbia in others. This Cameron line leaps bays and inlets; gathers in all of Glacier Bay, Lynn Canal, and Taku Inlet; takes all of the Stikine River, and, instead of following "along the channel known as Portland Channel," it strikes to tide-water at the head of Burroughs's Bay and follows by Behm Canal and Clarence Strait to Dixon Entrance. By this arrangement, Revillagigedo, Wales, and Pearce Islands and the great peninsula between Behm Canal and Portland Canal, are annexed to British Columbia; also the islands of the Gravina group, on one of which Mr. Duncan's colony of Metlakahtlans have found refuge—the island which the United States used for a military post a d then for a custom-house for twenty years, and even Mary Island, where the U. S. custom-house now stands. Claiming all of the Alaska coast up to 56° by this arrangement, the late Sir John Robson, Premier of British Columbia, suggested that the United States yield up the small remaining strip of mainland between 56° and St. Elias, for certain concessions in sealing matters. All Canadian maps are now drawn according to the Cameron line; and the Canadians, who are keenly alive to the advantages of possessing this

territory, have repeatedly called the attention of the United States to a matter which has seemed to be regarded with indifference on our side of the line.* The U. S. coast and Geodetic Survey has made careful surveys of the Portland Canal, Behm Canal, and St. Elias regions, and



marked the crossing of the line of the 141st meridian on the Yukon River; and late in 1892 Prof. T. C. Mendenhall was appointed commissioner on the part of the United States, and Mr. W. F. King on the part of Canada, to consider and determine the true line.

The Southern Islands.

Vancouver divided the island belt above Dixon Entrance into the **Prince of Wales** and the **George the Third Archipelago.** The two were as often known as the **Sitkan Archipelago,** and in 1867

* See Century Magazine, July, 1891: "The Disputed Boundary between Alaska and British Columbia." Also Extra Senate Document, No. 146, Fiftieth Congress, 2d Session, Report on the Boundary Line between Alaska and British Columbia.

Professor Davidson suggested the present name of the **Alexander Archipelago**, in compliment to the Russian emperor.

The military post of **Fort Tongass** was built on an islet between *Wales Island* and the mainland, facing the *Tlekhonsiti Harbour* of Russian traders, as often called Clement or Crescent City. The buildings were on the bluff on the N. side of the island, 10 miles distant from *Fort Simpson*. The garrison was soon withdrawn, and a customs officer remained until 1889. The rainfall of 118·30 in. a year, and the splendid cedar-trees 8 ft. in diameter, made it famous.

The Tongass, Tumgass, Tamgas, or Tunghash tribe of Tlingits were only the remnant of a great people numbering 500 altogether in 1869, and diminished to 225 in 1890. A swampy trail leads a half mile across the island from the fort to their chief village, where 24 massive totem-poles guard the semicircle of ruined lodges.

A tablet on one house reads:

"TO THE MEMORY OF EBBETTS,
HEAD CHIEF OF THE TONGASS,
WHO DIED IN 1880, AGED 100 YEARS."

Two fine totem-poles also record the honours of this Neakoot, who assumed the name of John Jacob Astor's Captain Ebbetts, as a compliment to that trader.

There are beautiful views around the island, and a canoe can thread myriad forest-walled lanes, in one of which there is a ledge of slate glittering with superb garnet crystals.

Vancouver named the small sharp point of the mainland for the Right Hon. Charles James Fox, and the bay beyond for Quadra, the Spanish commandant at Nootka. Salmon canneries were established at both places during the salmon boom of 1883–'84, but the *Cape Fox* cannery was moved to *Kichikan*, in Tongass Narrows, and the *Boca de Quadra* was deserted after a few seasons.

Mary Island Customs District.

The first flag and light seen on the Alaska coast are at the U. S. custom house on **Mary Island**, a green dot named for the daughter of Admiral Winslow, who cruised past it with her father in the U. S. S. *Saranac* in 1872. This Government station was built in 1891, and one may see the white buildings from afar, or hear the siren wailing when mists or darkness brood upon these reef and rock strewn waters. Ships may enter and clear at Mary Island, and the deputy and a row-boat are expected to exert a sufficient moral force to prevent the Juneau whisky fleet from taking on contraband cargo anywhere across the British

line and scattering to northward by myriad channels. A few years ago there were 21 mossy old totem-poles, many ruined houses and picturesque graves over on *Cat Island*, where a large community used to dwell; but many of the venerable columns have been cut, stolen, burned, and wantonly defaced.

The Gravina Islands were first seen and named by Caamano. *Annette*, the largest island of the group, is 17 miles in length and over 4 in width, and was named for Mrs. William H. Dall in 1880. It is mountainous throughout, and *Mt. Tamgas*, 3,684 ft. in height, retains its snow-cap throughout the year, and is easily distinguished from any side.

Point Davison was christened by Vancouver in honour of Alexander Davison, owner of the fleet's storeship, and the Englishmen camped for a night at that place. *Nicholls Pass*, separating Annette and Gravina Islands, was named for Captain H. E. Nicholls, U. S. N., who first surveyed its dangerous ledges. He also named *Port Chester*, where he found the ruined houses and decaying poles of a Tongass community, whom the Chilkats had massacred sixty years before.

New Metlakahtla.

When Mr. Duncan's people sought a new home on the Alaska side, the site of this deserted village offered all that the native mind deemed essential—a good beach for canoes, sloping land for cultivation, a good salmon stream near by, water-power for a saw-mill, and nearness to the mail steamer's route. It is almost the only good canoe beach in the region; but the wind-swept pass, filled with reefs and tidal currents, is the dread of steamers, and there is but a cramped anchorage a half mile off shore. In bad weather, and whenever it is possible, the mail steamers leave their consignments at *Kichikan*, the distributing station in *Tongass Narrows*, 12 miles distant, and tourists rarely see the actual marvel of New Metlakahtla.

Mr. Duncan visited Eastern cities of the United States in 1886–'87, and speedily enlisted friends to aid the Metlakahtlans. Rev. Henry Ward Beecher and Dr. Phillips Brooks were especial champions of his cause, but all creeds and people assisted. Mr. Duncan was assured at Washington that his people would be protected in the ownership of any lands they might select, whenever, by the extension of the general land-laws to Alaska, that Territory was open to settlement; and the act of Congress, March 3, 1891, provided:

"(SECTION 15.) That, until otherwise provided by law, the body of lands known as Annette Islands, situated in Alexander Archipelago in

southeastern Alaska, on the N. side of Dixon's Entrance, be, and the same is hereby, set apart as a reservation for the use of the Metlakahtla Indians, and those people known as Metlakahtlans, who have recently emigrated from British Columbia to Alaska, and such other Alaskan natives as may join them, to be held and used by them in common, under such rules and regulations, and subject to such restrictions, as may be prescribed from time to time by the Secretary of the Interior."

Four hundred Metlakahtlans crossed to Alaska in the spring of 1887. Dedicatory services were held on the arrival of Mr. Duncan, August 7, 1887; the United States flag was raised and saluted by the tolling of the new church-bell, and a psalm chanted by the people. The old totem-poles were destroyed, save two given to the Sitka Museum, and, apportioning the town-lots according to their own rules of individual rank and precedence, the Metlakahtlans began building their present attractive village. The saw-mill was burned in 1889, but within six weeks it was rebuilt, and the new machinery was cutting 6,000 ft. of lumber a day. A second fire destroyed the mill in March, 1892, but it was again rebuilt; and in January, 1893, the mill and half the settlement were burned.

The salmon cannery ships from 6,000 to 8,000 cases each year, and all the industries of the old Metlakahtla have been revived. They print their own newspaper; and the photographer, the silversmiths, the carvers, and bark-weavers do a large business on the occasional tourist days. The church and the octagonal school-house, the boys' and the girls' boarding-home, Mr. Duncan's residence, the cannery, the saw-mill, and the store, are the points of interest, and on steamer days the band plays on a platform built on the tall cedar stump. The Government day-school relieves Mr. Duncan of much of his old work, and Dr. Bluett having volunteered his services to the people, they have suitable medical attendance.

The original Tsimsians, with the Haidas and Tlingits who have joined them, have all subscribed to and faithfully lived up to this code:

METLAKAHTLA, ALASKA.

DECLARATION OF RESIDENTS.

We, the people of Metlakahtla, Alaska, in order to secure to ourselves and our posterity the blessings of a Christian home, do severally subscribe to the following rules for the regulation of our conduct and town affairs:

1. To reverence the Sabbath, and to refrain from all unnecessary secular work on that day; to attend divine worship; to take the Bible for our rule of faith; to regard all true Christians as our brethren; and to be truthful, honest, and industrious.

2. To be faithful and loyal to the Government and laws of the United States.

3. To render our votes when called upon for the election of the Town Council, and to promptly obey the by laws and orders imposed by the said Council.

4. To attend to the education of our children and keep them at school as regularly as possible.

5. To totally abstain from all intoxicants and gambling, and never attend heathen festivities or countenance heathen customs in surrounding villages.

6. To strictly carry out all sanitary regulations necessary for the health of the town.

7. To identify ourselves with the progress of the settlement, and to utilize the land we hold.

8. Never to alienate, give away, or sell our land, or building-lots, or any portion thereof, to any person or persons who have not subscribed to these rules.

The Na-a Country.

Revillagigedo Island, first seen by Gray and Caamano, was named by Vancouver in honour of the Conde de Revillagigedo, Viceroy of New Spain, who sent out the expeditions of Quadra, Caamano, Galiano, and Valdes. Its Indian name *Na-a*, "The country of the distant lakes," arose from the chain of pools which are linked throughout its northern half. Measuring 50 miles from N. to S. and 25 miles across its greatest breadth, it is almost divided by the long inlet named for Captain James C. Carroll, which, opening from *Tongass Narrows*, cuts to within a couple of miles of *Behm Canal*, which almost encircles the island with its graceful loop. The island is mountainous throughout, and its deeply indented shores hold some beautiful scenery. The only settlements have been on the west shores.

The cannery at *Kichikan*, or Fish Creek, in Tongass Narrows, has not been rebuilt since the fire which destroyed it in 1885. In August this small stream is packed with humpbacked salmon, and by following the trail from the beach for 200 yards the tourist may see one of the oft-described pools crowded from bank to bank with salmon, and watch the leaping of this saltatory species. The fall is some 15 ft. above the level of the pool at low tide, and the mass of salmon coming in with the flood wait until the waters rise their regular 12 ft. and shorten the jump. Impatient fish are always making the dash at the face of the fall, regardless of the tide, during the weeks when the humpbacks are running. Kichikan is a centre of a rich salmon country, and all the waters sparkle with leaping fish during their successive "runs." *Point Higgins* was named by Vancouver for the Señor Vallenar de Hig-

gins, the President of Chile, and *Clover Pass* was discovered and surveyed by Lieutenant Richardson Clover, U. S. N., while in command of the coast-survey steamer *Patterson*.

At **Loring**, at the entrance of *Naha Bay*, there is a large salmon cannery which has absorbed in the one establishment several smaller canneries and fisheries, and packs the catch of half a dozen streams of the neighbourhood. There is a post-office and trading-store in connection with it, and a village of Tongass Indians have settled beside this permanent settlement. The wreck of the *Ancon* remains a conspicuous object on the rocky shore, where it was blown by a *williwaw* or "woolly" as it was letting go from the wharf at high tide on August 25, 1889. The passengers walked down the gang-plank as the ship settled, and, with all the ship's furnishings removed to the cannery loft, living there for five days until the next steamer returned them to Port Townsend.

THE PACIFIC SALMON.

There are five varieties of the Pacific salmon (*Oncorhynchus*, the hook-jawed). The Pacific salmon and the Pacific trout differ so from the Atlantic species that it is a fine question whether there are any true salmon or trout on that coast, and whether any game laws can be legally enforced under such names.

Oncorhynchus chouicha, or king salmon, is the *quinnat* of the Columbia, the Chinook and Taku farther N., but everywhere recognized as the *tyee* (chief). Averaging from 60 to 80 pounds in the Stikine, it increases to 100 pounds in the Yukon. Its flesh is pale, and coming in pairs and not in great schools, it is not the whole pack of any one cannery.

Oncorhynchus nerka, the red salmon, is the blue-back of Oregon, the sockeye of the Fraser, and the canner's favourite because of the toughness and the deep tint of its flesh. It averages 6 and 10 pounds in weight, and visits the coast in incredible numbers.

Oncorhynchus kisutch, the silver salmon, is the most beautiful of its kind and the most spirited. It always chooses clear water, and leaps falls with agility. Its flesh is pale, and is unfit for canning within a few hours after landing.

Oncorhynchus gorbuscha, the humpback, is most abundant of the species, and averages from 5 to 10 pounds. The pale flesh cooks soft in cans and is not desired for packing, although of fine flavour. The humpback is even more plentiful than the red salmon, and can outjump any other species. Their leaps have not been recorded, like that Drammen River salmon in Norway that jumped 16 ft. up the face of a fall, but Lieutenant Niblack photographed one in the act of springing eight feet.

The first run of *tyees* comes in the early spring. In June the red salmon come in by Dixon Entrance, closely followed by the silver salm-

on. In August the humpbacks appear, and in September there is a last run of *tyees* to the up-stream and mountain lake spawning-grounds. The young salmon seeks the sea with the high water in spring, and returns at the end of two years to its birthplace.

The malma or Dolly Varden trout follow the salmon in from the sea to devour their eggs, and the crudest tackle baited with salmon roe will catch 1 and 5 pound fish of the most beautiful colouring.

There is also the cut-throat trout, with the vivid red mark below the gills, and the large steel head, Gairdner or rainbow trout, so often classed as a salmon, and packed as speckled salmon at many canneries. Prof. David S. Jordan, the first authority on Pacific coast fish, says that any one who can count can tell the difference between a salmon and a trout. A Pacific salmon has from 13 to 16 rays in the anal or last lower fin, while a trout has but 9 or 10 rays. The original Atlantic salmon has but 10 or 11 rays in the anal fin.

Fine distinctions as to parrs, charrs, smolts, and grilses are not weighed in Alaska. The canners desire only an abundance of firm, red-fleshed fish.

The rivalry of Alaska canneries greatly injured the business on the Columbia. The 37 canneries in Alaska, representing an investment of more than $4,000,000, employ between 5,000 and 6,000 people and 100 steam-vessels. The pack of 1891, amounting to 789,000 cases of 48 one-pound tins each, so overstocked the market that a combination was formed, 29 canneries were closed, and the pack of 1892 reduced to 400,000 cases. Only 2 of the 17 canneries in southeastern Alaska were operated that year, those at Loring and Chilkat. In 1893 the pack was limited to 650,000 cases.

SALMON CANNERIES.

At Loring the best opportunity is afforded for watching the canning of salmon, which is in progress from June to September by a large force of Chinese contract workmen. The seining and outdoor work are done by white men, a few Indians being sometimes employed under them. While industrious to a degree, the Tlingit cannot be depended upon; and the native is too apt to strike, to start upon a prolonged potlatch, or go berrying or fishing on his own account, in the height of the salmon run. In the skilful manipulation of the cans and machines within doors, neither he nor the white man can approach the automatic exactness and dexterity of the Chinese, who, being paid by the piece, take no account of a day's working hours, and keep the machinery moving as long as there are fish in the cannery. The fish are thrown from the arriving scows to a latticed floor, or loaded directly into the trucks and rolled into the cannery. The cleaner seizes a fish and in two seconds trims and cleans it—beheading, detailing, and rending it with so many strokes of his long, thin knife. It is washed, scraped, cut in sections the length of a can, packed, soldered, steamed, tested, vented, steamed again, resoldered, lacquered, labelled, and boxed. The tin is taken up in sheets, and an ingenious machine

punches, rolls, and fits the covers to the cans, which roll down an inclined gutter of melted solder which closes the edges. The experts can tell, by a tap of the finger, if each can is air-tight. If not hermetically closed, the contents rapidly change, burst the cans in transit "below," or explode unpleasantly in distant markets. The Alaska canners are not held to any restrictions as in British Columbia, not taxed or hindered in any way. They may take any piece of ground they see fit in tracts of 160 acres, and receive a patent after paying $1.25 an acre and the cost of survey. There is no tax upon cannery boats, no limit to the size of net-meshes, no close season, and the salmon inspector, who is supposed to prevent the placing of weirs and traps in the streams, has no vessel at his command with which to enforce the laws. The canneries drain the country of their natural wealth; make no permanent settlements, nor any improvements; spend almost nothing of their profits in the Territory; and are a fruitful source of trouble and corruption among the native people.

The Revillagigedo Lakes and Behm Canal.

The famed beauty of Naha Bay is not apparent from Loring. There is a fine waterfall a quarter of a mile above the cannery, reached by a trail through the woods. Two miles above Loring the bay narrows and terminates in a *cul-de-sac*, where 10,000 salmon have been drawn ashore from a single cast of the seine. A sharp point of land separates this cove from the first in the chain of four lakes, and the connecting stream is less than 100 ft. in length. This *Lake Adorable* is more properly a lagoon, as it is 12 ft. below high-tide mark, and the cascading stream empties and fills the lake by turn, and the seine is cast at either end of these rapids.

Lake Adorable, as it was named in 1885, is 4 miles long and 2 miles across, with magnificent mossy forests closely surrounding it. It glitters with leaping salmon all summer long, as they cross it to run the gauntlet of the cascading streams that join lake to lake far into the heart of the island. Large salmon have several times taken trout-flies from these shores and wrecked light rods. Greedy malma follow with the salmon, and may always be caught. Both black and cinnamon bears are found on the island. They are first seen in spring, when they come out to feed upon the skunk-cabbage (*Lysichton Kamchatkensis*), which with its huge tropical leaves is like a banana-tree half buried. Four black bears have been seen at once pawing salmon ashore from the sedges along Lake Adorable, and in the dense salmon berry thickets and along the shores of the farther lakes they are less often frightened away by man. The old smoke-house on the stream

connecting the first and second lakes has several times been used as a sportsman's camp, and touches upon the most complete wilderness, while near to a base of supplies. There is a small red deer on the island, but the skin-hunters threaten its early extermination in the region, as 25,000 skins were shipped from Loring in 1890. Wolves are numerous; geese, swans, mallard, teal, and a so-called canvas-back duck flock by the farther lakes; and eagles always tempt shots when a sportsman has once seen the exquisitely fine and downy robes made from their breasts.

Escape Point, at the northern entrance of Naha Bay, celebrates Vancouver's escape from the Indians who attacked his party in *Traitors' Cove*, 3 miles beyond. Canoes had followed the white men from the bend of Behm Canal, and "the old vixen," with the large labrette in her lip, who steered and commanded the largest canoe, was bent on hostilities from the start. While the three boats were separated, the vixen came alongside Vancouver's yawl, snatched the lead-line and made fast with it. Her crew donned wolf masks, jumped aboard and seized the muskets; five canoes closed in, their crews shouting and dancing. The commanding virago was plainly exhorting them to an attack, when Vancouver gave the order to fire with the weapons they had drawn from the arms-chest. Those in the small canoes rolled out and swam ashore. Those in the big war canoe cut the line, and all sprang to one side, careening the canoe so that its side shielded them as they paddled away. Two of Vancouver's men were wounded, and before they could proceed the swimmers climbed the sheer bluff and hurled rocks down upon the boats.

Yess Bay, on the mainland shore opposite Traitors' Cove, is a mere ship-way through the forest, navigable by large steamers for 2 miles to a point where the cannery is situated, and accessible only to canoes beyond that point. The narrow passage is exceedingly picturesque, and the brawling stream by the cannery leads to a lake of great beauty, where 60 pounds of trout have been lured by the commonest fly in two hours. The Coast Survey named the place *McDonald Bay*, but the local name having become well established in commerce beforehand, it is only alluded to as *Yess Bay*.

Burroughs's Bay, at the mouth of the Unuk River, is a deep bowl in the mountains where Vancouver fished in August, 1793, and called his prizes "hunchbacked salmon." "They had little of the colour and nothing of the flavour of salmon, and they were very insipid and indiffer-

ent food," he wrote. The shores were covered with dead salmon then, as they are now at the height of the run, when the retreating tides strand acres of fish on the river bars. A cannery was established at Burroughs's Bay in 1885, and while it was in operation the mail steamers regularly made the tour of Behm Canal *. There is placer gold in the bars of the *Unuk River*, a turbid, glacier-fed stream, which heads 100 miles inland. It is navigable for 70 miles by canoe, but hunters of the bear, mountain goat, and mountain sheep, which abound in this region, are warned by the surveyors of dangerous rapids and whirlpools.

The mainland shores are very abrupt all along **Behm Canal**, the way is narrow, and Commander Newell, U. S. N., who was among the first to carry a large steamer around Revillagigedo, declares the view northward from *Point Sykes* the finest in southern Alaska. The landmark in that stretch is the **New Eddystone** Rock, which rises like a ruined vine-clad tower 250 ft. from the water, with a circumference of less than 50 yards at the base. There are a few crevices in its side to maintain the green wreaths and plumes that permanently decorate it, and it could be easily scaled. Vancouver named it after breakfasting on its sandy base; and in 1879 the Coast Survey named the *Rudyard Bay* and the other points near it for engineers and others connected with the building of the famous Eddystone Light on the coast of England.

Prince of Wales Island.

Prince of Wales, the largest island of the Alexander Archipelago, is second in size to Vancouver Island, extending 200 miles from N. to S., with a breadth of 20 and 60 miles. It is a miniature continent, with an island belt on the ocean coast sheltering a continuous *Inside Passage*, navigable by canoes and launches. It is mountainous throughout; cedar groves dot its shores; fine salmon streams lead to scores of mountain lakes, and in climate it has been called the Lancashire of the coast. Because of its wealth of cedar and salmon, Congress was once asked to declare the island a government reservation of ship timber for the use of the navy-yards on the Pacific coast, and to

* Named for Major Behm, commandant at the Russian port in Kamchatka, where Cook's ships wintered under Captain King. George Vancouver was midshipman on this third and last voyage of the great navigator, James Cook.

lease the salmon-fisheries. The very mention of Alaska has always been sufficient to convulse the Congress at Washington; and although the proposed reservation was larger than the State of New Jersey, and would have brought in a considerable revenue, the humorous legislators did nothing.

The yellow cedar (*Cupressis nutkakensis*), which ranges from the Queen Charlotte Islands to Yakutat, is the most valuable timber on the Pacific coast. The tree reaches a diameter of 5 and 8 ft. and a height of 150 ft., growing in patches and small groves, and easily distinguished from the rigid, symmetrical spruces by its darker foliage, its ragged and uneven limbs with their plumy, willowy, tasselled tips. It has a pale-yellow colour and a close fine grain, exhaling a slight resinous odour when first cut. The Chinese valued it highly, and the Russians carried on a large trade in cedar logs. At Canton it was made into chests that passed as camphor-wood, and when carved and scented was palmed off as sandal-wood. It is as much the aversion of moths as are the other fragrant cedars. It is the one ship timber of the Pacific coast, the only wood which repels the teredo, and ships' timbers have been found to be sound and good after lying under water for thirty years. The few vessels built of yellow cedar have the best standing, since hulls of Oregon pine can only be insured as A. No. 1 for three years, and the average Puget Sound pile is eaten through in the same time. One million dollars a year is said to be spent in driving and replacing piles in Puget Sound wharves, while the yellow cedar of Alaska is untouched, and the law forbids its exportation. Small lots of yellow cedar have been sold at Portland for $75 per thousand feet; local cabinet-makers have made much use of it, and Hon. William H. Seward secured enough cedar during his visit to Alaska to finish the great hall of his Auburn residence. The natives use this wood for canoe and house building, for totem-poles and all carved work. The inner bark furnishes them with a tough fibre which replaces ropes or thongs, and, finely shredded, is woven into mats, sails, blankets, baskets, and hats. They destroy countless trees by this girdling, and ghosts of dead cedars show all along shore.

All the S. and W. coast of Prince of Wales Island is historic ground. At Cape Chacon, or the traders' Musatchie Nose, Juan Perez landed in 1774, and finding a native with a Russian gun in his possession, marked the line of 54° 40′ as the limit of Russian rule, and by the same token the northern boundary of Spanish possessions.

The *Haneagas* originally claimed all the ocean shores, but one hundred and fifty or two hundred years ago they were driven northward by the Haidas from North Island of the Queen Charlotte group, a band of pirates and freebootors who successfully defied the neighbouring tribes, and terrorized the mainland coast. At last the other Haidas, combined with the Nass and Tsimsian warriors, attacked North Island, routed the

renegades, and destroyed their villages. The survivors put to sea, landed on the opposite shore of the entrance, and in time pushed their villages up to Tlevak Strait and around to Thorne Bay, on the E. side of the island. They drove the French flag from this coast early in the century by killing the native otter-hunters whom a French trader had leased from the Russian chief manager at Sitka. After indemnifying the Sitkans for their 23 dead relatives at $200 each, the Frenchman had 63 otter-skins worth $5 each to take to Canton. His experience deterred his countrymen from competing in the profitable fur-trade of the Northwest Coast.

These Tleviakans, Kaigahnees, or Prince of Wales Haidas, have their largest village at **Howkan**, in Cordova Bay, behind Dall Island. The Boston fur-traders used to anchor near the village in the harbour which Captain Etholin surveyed in 1833, and named *American Bay*. Howkan is a Stikine word meaning "fallen stone," and the original *Aowkan* lies on the beach, whether myth or meteorite none know.

The village is rarely visited by mail steamers, receiving its mail and consignments by small steamer from *Mary Island* or *Fort Wrangell*. A Presbyterian mission was established at Howkan in 1881. In 1883, when the writer first visited the village, it was a place of totemic delight. Tall totem-poles guarded houses, and skeleton ruins of houses, crowded to the water's edge, ranged back through the underbrush, and lined a farther beach where graves and ruins were entangled in a young jungle. Mosses and lichens half covered the faces of the crows and eagles, grasses and ferns flourished in every crevice of the carvings, and bushes and even young spruce-trees, 10 ft. high, grew on the tops of totem-poles. Skolka, the head chief, had a magnificent column by his doorway, with two children with storied hats above his ancestral eagle and the image of a bearded white man beneath the bird. He read a sad chapter of his family history from this picture record. A woman of the eagle clan went to gather salmon-eggs one day, and while she cut fresh branches to lay in the water, and filled her baskets, her two children played. When she was ready to return she called the children, but they ran and hid. She called again and again, but they answered her from the woods with the voices of crows, and for many moons the crows mocked her cries. It was believed that the white traders had stolen them. The lost ones never returned, and the story of the kidnapped children has frightened generations of little eagles. The same twins and trader ornament a pole in Kasa-an Bay, and exhort those small Kaigahnees of the eagle brand to civil speech and obedience. Skolka's next-door neighbour in days of yore was an old chief, whose young and pretty wife found a big frog while searching in her liege's locks one day. The nine days' wonder was recorded in the next totem-pole erected, and there one may still see the old chief, the frog, and the moon-faced bride to prove the tale.

The Kaigahnees, like every tribe, have a legend of a great flood and

a single canoe coming to rest with two survivors on the top of a mountain. In 1883 one ancient claimed to have the bark rope that held the anchor of the big canoe when it rested on the high mountain behind Howkan—a talisman of great power. They have a tale twin to ours of Lot's wife, but their Sodom and Gomorrah were on Forrester Island, and a brother and sister fleeing from a pestilence were both turned to stone, because the woman looked back while crossing a river. Their petrified bodies still stand in that river, and their petrified lodge may be seen on its bank.

When Wiggins's storms were promised to all North America in March, 1882, a white man at Kasa-an Bay read and explained the prophecies to the Kaigahnees. The warning ran rapidly from village to village, and at Howkan all began moving their things to the high ground, and were carrying up water and provisions for one whole afternoon. They believed that the promised tidal wave was coming, and, at the time set for the storm, began to say, "Victoria all gone!" There was a heavy storm outside that March night, and the agent of the trading company, returning from the Klinquan fishery in a whale-boat, was drowned by a wave upsetting the boat as he let go the tiller to furl the sail.

It was at Port Bazan, across Dall Island, that a Kaigahnee found the remains of Paymaster Walker, who was lost with the steamer *George S. Wright*, in February, 1873. The loss of the *Wright* was one of the tragedies of the sea, and is still a current topic in Alaska. The steamer left Sitka on its return trip to Portland with several army officers and their families and residents on board. It was last seen at Cordova Bay, on the south end of Prince of Wales Island, and, in the face of warnings, the captain put out to sea in a heavy storm, as he was hurrying to Portland for his wedding. It is supposed that the ship foundered, or struck a rock on the Queen Charlotte shore. The most terrible anxiety prevailed as week after week went by with no tidings of the *Wright*, and the feeling was intensified when the rumour was started that it had been wrecked near a village of Kuergefath Indians, and that the survivors had been tortured and put to death. Two years after the disappearance of the *Wright* the body of Major Walker was found in Port Bazan, recognizable only by fragments of his uniform that had been held to him by a life-preserver. Other remains and bits of wreckage were found in the island recesses, and the mystery of the *Wright* was cleared.

In the Howkan and the Kaigahnee region everything has been named and charted three and four times. *Cape Muzon* itself was named *Cape Muñoz* by the Spaniards, and Vancouver copied the name incorrectly. Dixon had named it Cape Pitt before him, and Tebenkoff called it Cape Kaigahnee afterward. The original village of *Kaigahnee* was near this cape, but since its abandonment that name is as often applied to Howkan. *Kaigan* is the Japanese word for strand or seashore, and its use in this connection gives great comfort to those who contend for the Asiatic origin of these people. The missionaries named the place *Jackson*, and the Post-Office Department sent blanks and cancelling stamps marked *Haida Mission*. Captain Nichols resisted all appeals to enter *Jackson* on

the Coast Survey charts, and the Board of Geographic Names made *Howkan* the legal and official appellation. This is only one of many similar incidents in the naming of the region.

The Howkan Mission has a saw-mill beyond American Bay, and the *Klawak* cannery and mill are niched in the far end of Bucarelli Bay, that picturesque, cedar-lined reach where Bodega and Maurelle took possession in the name of Spain in 1775. Mail and excursion steamers never visit this shore, and the Klawak cannery runs its own schooners to San Francisco, and steam launches to Howkan, or Fort Wrangel, for mails. A mission and a Government school care for the Hanegas, who inhabit this W. coast, a tribe quite as untamable for a century as the Kaigahnees. There is an inside passage from Dixon Entrance to Sumner Strait, and a large cannery and saw-mill at **Shakan**, or Chican, off the N. end of Prince of Wales. That saw-mill was doing a large business in cedar shingles with San Francisco in 1889, when the zealous timber agent descended, a cargo was confiscated, a large fine levied, and the mill was silenced.

Vancouver sighted the "very remarkable barren, peaked mountain" on the N. end of Prince of Wales, which he named for his friend Captain Calder, of the navy; but other navigators briefly describe Mt. Calder as a volcano, and tell of its eruption towards the close of the last century. The northern and eastern shores of the island down to *Thorne Bay* are claimed by the Stikines, and their first village is in *Red Bay*, the *Krasnaia* of the Russian traders. The dreaded *Eye-opener*, or *Shoo-Fly Rock*, is off its entrance, and by a sharp turn a ship runs into a small opening that narrows until it can barely pass. Beyond this gateway the bay rounds out into a placid reach, with magnificent trees crowding to the water's edge. There was a small saltery there in 1884, and another at Salmon Creek, E. of Red Bay.

Kasa-an Bay, on the E. coast of Prince of Wales Island, penetrates some 17 miles in a westerly direction, and several fine salmon streams empty into its arms and inlets. Skowl's old village, the original Kasa-an, is on *Skowl Arm*, which opens southwardly near the entrance.

At the time of Skowl's death his village held 17 great lodges, and the threescore totem-poles constituted the finest collection of their kind in Alaska. This chief of the eagle clan was an autocrat of the old school, ruled his people with a rod of iron, held them to the old faiths and customs, and gave missionaries no welcome. A totem-pole in his village showed the image of a priest, an angel, and a book, and was intended as a derisive reminder of the efforts made to convert him

There is an interesting old graveyard on the N. shore, half-way up Kasaan Bay, near the Baronovich copper-mine, which was much exploited twenty years ago.

The *Baronovich Fishery* is in a cove of *Karta Bay*, at the extreme end of the opening, and was established at the time of the transfer by a Russian trader who married Skowl's daughter. It was a headquarters of smuggling operations during the first years of United States ownership of Alaska, and Baronovich was one of the first of pelagic sealers or rookery raiders, returning with 9,000 fur-seal skins from a mysterious cruise in a small schooner in the summer of 1868. In 1885 the customs officers found over $40,000 worth of prepared opium at this fishery, packed in barrels and ready for shipment below as salt salmon. Since that event the fishery has been abandoned, and the catch of *Kasa-an*, *Tolstoi*, *Thorne*, and *Salmon* Bays on the E. coast of Prince of Wales Island, are towed in scows to the *Loring* cannery.

Cholmondeley Sound, which extends inland for 16 miles, was named by Vancouver, and *Dora Bay*, its scenic boast, with *Mt. Eudora*, 3,500 ft. high at its end, were named for Mrs. Richardson Clover. *Moira Sound*, another of Vancouver's discoveries, and the northern arm reaching almost to the base of Mt. Eudora, is much lauded for its scenic combination. Niblack anchorage was named for Lieutenant A. P. Niblack, U. S. N., who conducted the surveys in this region and gathered the material for his valuable work on The Coast Indians of Southern Alaska and Northern British Columbia, published as part of the Report of the U. S. National Museum, 1887–'88. It contains the fullest explanation of the arts, customs, and social organization of these interesting people.

This report, and the other U. S. Government publications referred to, cannot be purchased, but can be obtained for any United States citizen who makes proper application to a Senator or Representative in Congress from his State.

Fort Wrangell.

Vancouver's **Duke of Clarence Strait** is 107 miles in length, and at its northern end is sensibly discoloured by the fresh water of the *Stikine River*. **Fort Wrangell**, on the island of that name off the mouth of that river, was the second settlement in southeastern Alaska after Sitka, and commands a broad mountain-walled harbour that lies 80 miles in from the open ocean. This gives it warmer and drier summers and colder winters than places on the outer coast, the mercury often rising above 90° in July, and remaining above 80° for a fortnight at a time. The winter average of 28·3° leaves the harbour open, and

extreme cold is rarely known. John Muir has highly extolled its bland, soothing, "poultice-like atmosphere," and greatly praised the mountain panorama unrolled to one who climbs the hill behind the old fort.

The first settlement on *Wrangell Island* was made by order of the chief manager, Admiral-Baron Wrangell who sent the captain-lieutenant, Dionysius Feodorovich Zarembo, down from Sitka, in 1834, to erect a stockade-post, and with the aid of a corvette prevent the Hudson Bay Company from re-establishing trading-posts on the Stikine River. This *Redoubt St. Dionysius* was built on the first point of land below the wharf, and with the hostile threats of the natives Zarembo succeeded in driving off the British ship. This hindrance to the free navigation of the Stikine was a plain violation of the Treaty of 1824, and after five years of diplomatic controversy it was settled by Russia paying £20,000 indemnity and leasing all the *Thirty-mile Strip* from Dixon Entrance to Yakutat to the H. B. Co., first for a term of ten years, and then by renewed leases until the transfer of Russian America to the United States. Sir George Simpson considered all the British possessions in the interior, adjacent to the Thirty-mile Strip, as worthless, unless it were leased to them. He named the new post *Fort Stikine*, and his men led an exciting life there, their fierce neighbours attacking and besieging them, and several times cutting their foot-bridge and the flume that carried water to the fort. After the discovery of gold on the river and the influx of miners, fur-trading languished, the river posts were abandoned, and there was little loss to the company when its lease ended with the transfer of Russian America to the United States.

A new site was chosen for the United States military post of Fort Wrangell in 1807, and the large stockade was first garrisoned by two companies of the Twenty-first Infantry, that remained until 1870, when the post was abandoned, the ground and buildings sold to W. King Lear for $600. The discovery of the Cassiar mines, at the head-waters of the Stikine, and sent a tide of new life into the deserted street, and a company of the Fourth Artillery occupied the barracks from 1875 to 1877, when the Government withdrew its troops from all posts in Alaska. During the second occupation the tenants fixed the rent of the property, and paid the protesting landlord a tenth of what he might have received at that time. In 1884 the Treasury Department took possession of the buildings, on the ground that the sale of 1870 was illegal, and installed the deputy-collector in the fort. Twenty years after Mr. Lear's purchase of the property, the Sitka court decided that, as the original sale was illegal and unconstitutional, Mr. Lear was entitled to his $600 with interest, and the *cause célèbre* was ended. As the old buildings went to ruin, they lent Fort Wrangell a certain interest and picturesqueness, and the weather-beaten stockade and a leaning blockhouse were most sketchable; but all these fine studies in weather tones and lichen-growths have been destroyed, the restorer has driven picturesqueness out of the quadrangle, and the old quarters are used by the civil officers—a deputy-collector, commissioner, marshal, postmaster, and superintendent of education.

With the abandonment of the mining regions up the Stikine, Fort Wrangell's trade has fallen to almost nothing, and the saw-mill represents its chief industry. The Stikines do a large curio business in the summer season, and the traders' stores overflow with coarse carvings, baskets, and native silver-work. A few furs are brought from the Stikine country. Specimens of dark-gray mica slate, sprinkled with large almandite garnets, are brought from a ledge near Point Rothsay for sale.

There is an old river-boat on the beach, so built over and grown with weeds that only the line of the guards suggests its original estate. This *Rudder Grange* cleared $135,000 each season its stern-wheel beat the Stikine flood, and when its machinery gave out beyond all repair, it was floated ashore, and was a profitable venture as a hotel. Then it fell to the mission of a bakery, whose Chinese proprietor gathering his kind about him made it headquarters for those Celestials who patiently worked abandoned placers, and carried much Stikine gold away long after the boom had broken.

As late as 1883 a forest of totem-poles rose by the great lodges in the Stikines' village. In 1893 only a half dozen remained, and the show pair guard a bay-windowed cottage which replaces the ancestral lodge. One of these relates the legends of the builder's family, the other that of his wife. The wife's pole is surmounted by her clan-totem, the eagle. The image of a child, a beaver, a frog, an eagle, a frog, and a frog, continue to the ground. This frog is the crest of a sub-family, the insignia of a medicine-man, a pestilence, a miraculous cure, big medicine, or as the food of the eagle naturally represented with it—all according to as many interpreters. The builder's pole is covered with his own image, the two-storied hat indicating two great potlatches or degrees in greatness. Beneath is his own mother totem, the crow, and at the base of the pole the eagle, the totem of his wife, and hence of his children.

The wolf and the whale, from two famous medicine-men's grave, ornament the old parade-ground.

Shakes's Grave, on the point reached by a foot-bridge, is an object of interest. Shakes and his rival, Qualkay, were in evidence when Sir George Simpson visited Fort Stikine in 1841. Qualkay long ago succumbed and was set away in charge of his totemic guardian, but Shakes cumbered the earth for another forty years, causing and spilling much bad blood, foraging the lower coast to far Nisqually, opposing the missionaries, brewing *hoochinoo*, and quarrelling with the other village chiefs as long as the breath was in him. He was a chief of the old school, like Skowl, and when he died there was a wake and a funeral that paled all potlatch tales of old. His body was laid out in state trappings. The carved chests were piled high. There were furs and blankets galore; *tows* past envious counting; gangs of slaves, and last the precious heirloom and insignia of his line—a stuffed grizzly with copper claws and eyes, and movable jaws that assisted at great dances and ceremonies, and, being possessed by the body of a man, took part in theatrical representations that depicted the great family legends. In

deluge-time Shakes's ancestors took the bear into their canoe and saved him from drowning. When the canoe grounded on a mountain, the bear brought them food, and from an alliance with this bear were descended all his people. One bear column shows the footprints of the bear that crawled to the top of the tree whence he was rescued by Shakes's ancestors; and when Shakes was laid away in a balconied pavilion on the Point, a bear was put on guard.

Kadashan has inherited the orca-staff that rules the tribe and a fine war canoe. For a sufficient purse he and a rival *tyee* will muster crews of thirty-two and paddle a spirited race. They paddle to a chant, the fierce old war-song of the "northern Indians" that spread terror on the lower coast.

Shustacks Point was the home of another chief, who long defied the missionaries' efforts, but who was laid away in his ornamented grave soon after *Clah*, the Christian Tsimsian, acceded to the Stikines' request and opened a school in their midst. Mr. Seward and General Howard had vainly appealed to mission boards, but the letter of a private soldier describing the pathetic efforts of these people to do for themselves made most impression, and in 1877 the Presbyterian Board sent Rev. Sheldon Jackson to investigate. He found the wonderful Clah teaching in a dance-hall leased from the miners, and, guarded by the chief Toyatt, opening his school with hymn and prayer. A teacher was left for that winter, and the next year Mrs. McFarland opened a girls' boarding-school, which, after its own building was burned, was united with the Sitka school. A Catholic chapel was built during garrison days, and receives periodical visits from the Jesuit father at Juneau, but as the Tlingits have been given in charge of the Presbyterian Board, the Roman church does not attempt any evangelical work among them. A Methodist and a Presbyterian church and Government day school are the forces at work, and are judged sufficient and satisfactory.

The pre-emptor of the old company gardens beyond the fort has proved in these later days that vegetable and poultry raising are more certain and profitable ventures in Alaska than mining. Cabbages and mangel-wurzel reach prodigious size; cauliflowers measure 18 inches around; and peas, beans, lettuce, celery, rhubarb, and radishes thrive. This enthusiastic planter believes that he could have ripened wheat during two dry summers, and perhaps corn. Wild timothy grows 6 ft. high in old clearings, and clover-heads are twice the size of Eastern clover, each blossom wide-spread, as red and fragrant as a carnation pink.

The Stikine River.

There is a salmon cannery at **Labouchere Bay**, 2 miles from Fort Wrangell, on the north point of the island. A trail through the woods connects the two settlements. This spot is better known as the *Point Highfield* of Vancouver, and commands a view of the mouth of the **Stikine River** and the high peaks surrounding its delta.

Although Vancouver's men, in reaching this point, were surrounded by the grey-green and turbid flood of the great stream, they did not discover it, the third great river of the coast which they almost entered unawares. Captain Cleveland, of the American sloop *Dragon*, and Captain Rowan, of the *Eliza*, visited the delta and learned of the great stream in 1799. Hudson Bay Co. employés knew the head-waters, soon after their repulse by Zarembo at Fort Dionysius. Mr. Robert Campbell tells of his discovery of its sources in a letter to Senator M. C. Butler, dated Riding Mountain House, Manitoba, November 30, 1881:

"Being an employé of the Hudson Bay Co., I was for a series of years employed by it in exploring, trading, and extending the trade in the till then unknown part of the Rocky Mountains, and especially in search of rivers, or sources of rivers, flowing from the west of the mountains.

"In summer, 1838, I ascended to and established a trading post at Dease's Lake (since then a gold field), and soon after, in July, I crossed the mountain and came to the head-waters of a river, which with a party of two Indian boys and a half-breed I followed for some time, and came to a tributary which we crossed on Terror Bridge, a very shaky structure over a foaming torrent. About 15 miles beyond the bridge we came on a very large camp of Indians assembled there for the double purpose of catching salmon, which abounded in the river, and of trading with the then notable chief 'Shakes,' who ascended there from Fort Highfield, a large trading station of the Russians, established at the mouth of the river, on the Pacific coast. From these Indians I was glad to learn that the name of the river was 'Stikene.'

"I gave notes to some of the Indians, to be delivered at any Hudson Bay Co. post, relating the result of my discovery thus far, and as the object of my trip was now attained I wished to retrace my steps without delay; but it was with no little difficulty that we got away from the camp of the savages. We owed our safety to the Nahany chief, and the tribe we came first in contact with in the morning. This discovery, which made no small noise at the time, led in a great measure to the Hudson Bay Co. leasing from the Russians a stretch of country along the coast, for purposes of trade."

The Hudson Bay Co. first established *Fort Mumford*, 60 miles up the river from Fort Wrangell, at the supposed Russian boundary line, and *Fort Glenora*, 126 miles up river, at the head of canoe navigation. When the miners came with steamboats, fire-arms, and blasting powder, game was frightened away, and the Indians found more lucrative pursuits than hunting and trapping. In 1878 the company abandoned the river posts, the mines failed, and the region relapsed into a wilderness.

The scenery of Stah-Keena, the Great River, will revive the fortunes of the region when increasing tourist travel makes it better known. Prof. John Muir, who canoed its length in 1879, epitomized its finest reach as "a Yosemite 100 miles long." Three hundred living gla-

ciers drain directly into the Stikine, and Prof. Muir counted 100 from his canoe. The river is very shallow at the mouth, with a current running 5 miles an hour, but in the upper cañons the current is terrific. Steamers were withdrawn from the river in 1883, but a relic continued to navigate until 1891, although canoe travel was and is still more satisfactory to those who can give a fortnight to the excursion. In busy times, when all the standing-room was taken on these river-boats, and they tied to the banks each night to give passengers room to sleep, it was a 3 days' trip up to Glenora by steam, and 10 days in canoe. Returning, the steamers made the 150 miles in 8 or 12 hours, the machinery reversed much of the time, to restrain the boat from going entirely with the mad current.

Itinerary of the Stikine River.

The first object of interest is the *Popoff*, or *Little Glacier*, 10 miles above Point Rothsay. At the *Big Bend*, a few miles above, the *Iskoot River* opens a valley southward, its course defined by the sharp needle peaks of the *Glacier Range*. The natives, following the Iskoot cañons for 50 miles, reach a table-land from which they descend the Nass River to Fort Simpson. Besides scenery of the wildest description, peaks, precipices, and glaciers that defy Zermatt climbers, the Iskoot region is a great preserve of big game. Grizzly, cinnamon, and black bears, mountain goat and mountain sheep, deer and elk, roam undisturbed, grouse abound, and mosquitoes surpass in numbers and voracity any others of their kind. The same condition as to game and insects exists all along the Stikine.

The **Great, or Orlebar Glacier**, 20 miles above the *Little Glacier*, and 40 miles from Fort Wrangel, is often visited in chartered steamers, when mail steamers are delayed at the latter port for a whole day, and offers an interesting excursion. The glacier descends through a mountain gateway less than a mile in width, and spreads out in a broad, rounded, fan slope measuring 3 miles around its rim. A terminal moraine half a mile in width lies between it and the river, a place of sloughs and quicksands cut by the milk-white *Ice Water River*, and scores of streams through which the pilgrim wades to the foot of ice-cliffs rising abruptly 500 and 700 ft. The glacier slopes back easily and disappears in fine curves behind mountain spurs. Its surface is much broken, but it has not been explored nor its motion recorded. Two young Russian officers once came down from Sitka to

explore this glacier to its source, but they never returned with its secrets. Old miners and river traders say that it has shrunk and retreated much since those good old days when "the boys," with their bags of flour gold, and nuggets, used to congregate at *Buck's Bar* (Choquette's) on the opposite bank, and, while boiling themselves in the *Hot Springs* baths, contemplated the great ice stream over the way. A smaller glacier faces the *Great Glacier* on the Hot Springs side, and there is an Indian tradition to the effect that these two glaciers were once united, and the river ran through in an arched tunnel. To find out whether it led out to the sea, the Indians determined to send two of their number through the tunnel, and with fine Indian logic they chose the oldest members of their tribe to make the perilous voyage into the ice mountain, arguing that they might die very soon anyhow. The venerable Indians shot the tunnel, and, returning with the great news of a clear passage-way to the sea, were held in the highest esteem forever after.

Near a bend in the river known to the miners as the *Devil's Elbow*, the *Mud* or *Dirt Glacier* pours through a defile and spreads along the river bank like a high terrace for 3 miles. Next, the *Flood Glacier* descends from a hidden *neve*. Every summer something gives way in the glacial fastness and a flood bursts out with a roar, the river rises several feet and races with a swift current, while the unknown reservoir empties itself. Caution has kept miners and Indians away, and no scientist has investigated to see how and where the ice spirits build their dam. Beyond it is the dreaded *Little Cañon*, a gorge a half mile long, narrowing to a width of 100 ft., where ascending steamboats struggle for nearly an hour before they can emerge from the frightful defile. Steamers often tie up for days, waiting for the furious current to slacken. Next is the *Kloochman's* or *Woman's Cañon*, where the noble Stikine, exhausted by paddling or tracking his canoe through the preceding cañon, leaves the cares of its navigation entirely to his wife. Here he crosses the backbone of the *Main* or *Sawback Range*, and here are summer camps by that fine salmon stream the *Clearwater*. The *Big Ripple*, or the *Stikine Rapids*, offer the last difficulties for canoemen, and then the country opens out into more level stretches, and a dry and wholly different climate causes *Shakes's*, *Carpenter's*, and *Fiddler's Bars*, where men picked up fortunes 30 years ago, to scorch in dry summer heats.

At *Glenora*, 540 ft. above the sea, steamers discharge their cargoes

and start on the wild sweep down the river. Canoes can ascend another 12 miles to the mouth of *Telegraph Creek*, where the surveyors decided that the Western Union wires should cross, and where the *Great Cañon* of the Stikine begins, a rocky gorge 50 miles long that no craft can traverse, but which in winter offers a level ice highway and a snow-shoer's short cut towards Cassiar.

MINING REGIONS OF THE STIKINE.

H. B. Co. agents disclaim any previous knowledge of the existence of gold along the Stikine River, and deny any exchange of gold dust ounce for ounce for lead bullets as with the natives on the Fraser. In 1861, Pierre Choquette and Carpenter his partner discovered gold on a bar near *Glenora*. Camps quickly dotted the river's length, and in 1873 richer fields were discovered in the Cassiar regions, at the head-waters of the river, by Thibert and McCulloch, two trappers who had made their way overland from Minnesota. Ten thousand miners reached the diggings in 1874, and the yield was estimated at $1,000,000. The new camps were 300 miles from Fort Wrangell and 150 miles from Glenora. The centre of trade was at *Laketown*, on Dease Creek, near Dease Lake. The Omineca region at the head of Peace and Skeena Rivers was deserted. Four ocean steamers ran regularly from Victoria, transferring to Six River steamers at Fort Wrangell. Freights from the latter place to the mines ranged from $20 to $80 and $160 per ton, the last half of the transit being by pack-mules or on men's backs over the roughest mountain trails known. While the mines were paying, Fort Wrangell was the winter resort of the miners, and the liveliest as well as the most important town in Alaska. Travel turned inland in February, miners travelling by snow-shoes and with hand-sleds on the ice until well into March. Active work began in May, and the freezing of the sluices in September closed the season. When the placers were exhausted and machinery was needed to work the quartz claims, the miners left. Chinese for a long time worked abandoned river bars and Cassiar placers.

The returns of the Cassiar mining district, as given by the British Columbian Minister of Mines, show the quick decrease in the bullion yield:

YEAR.	Number of miners.	Gold product.	YEAR.	Number of miners.	Gold product.
1874.....	2,000	$1,000,000	1882.....	.....	$182,800
1875.....	800	830,000	1883.....	1,000	119,000
1876.....	1,500	556,474	1884.....	.....	101,600
1877.....	1,200	499,830	1885.....	.....	50,600
1878.....	.....	519,720	1886.....	.....	63,610
1879.....	1,800	405,200	1887.....	.....	60,485
1880.....	.....	297,850			
1881.....	.....	198,900			$4,880,069

THE INTERNATIONAL BOUNDARY LINE ON THE STIKINE.

The leasing of the Thirty-mile Strip to the H. B. Co. did away with the necessity of precisely marking the boundary line on the river, and the Russians felt no concern in the matter until the gold discoveries of 1862. It was provided in the Russian American Company's lease that all mineral lands should belong to the crown; and the Czar, who had been brooding much over the mineral possibilities of his American province, ordered Admiral Popoff to send a corvette from Japan to see if the British miners were on Russian soil. Prof. William P. Blake, the geologist, accompanied Captain Bassarguine on the *Rynda* from Hakodate in 1863, and his report, with the Russian officers' maps, were the first authentic geographic and geologic information. Since their survey five different places have been designated as the boundary, ranging from the Little Glacier to the crossing of the Sawback Range. The report of the Dawson-McConnell survey of the river is included in the Annual Report of the Geological Survey of Canada for 1887. The report of the Special U. S. Treasury Agent, W. G. Morris, in Extra Senate Document No. 59—Forty-fifth Congress, third session, gives a full account of the attempts to determine some limit during Cassiar days and the necessity for some settlement of the question.

From Sumner Strait to Prince Frederick Sound via Wrangell Narrows.

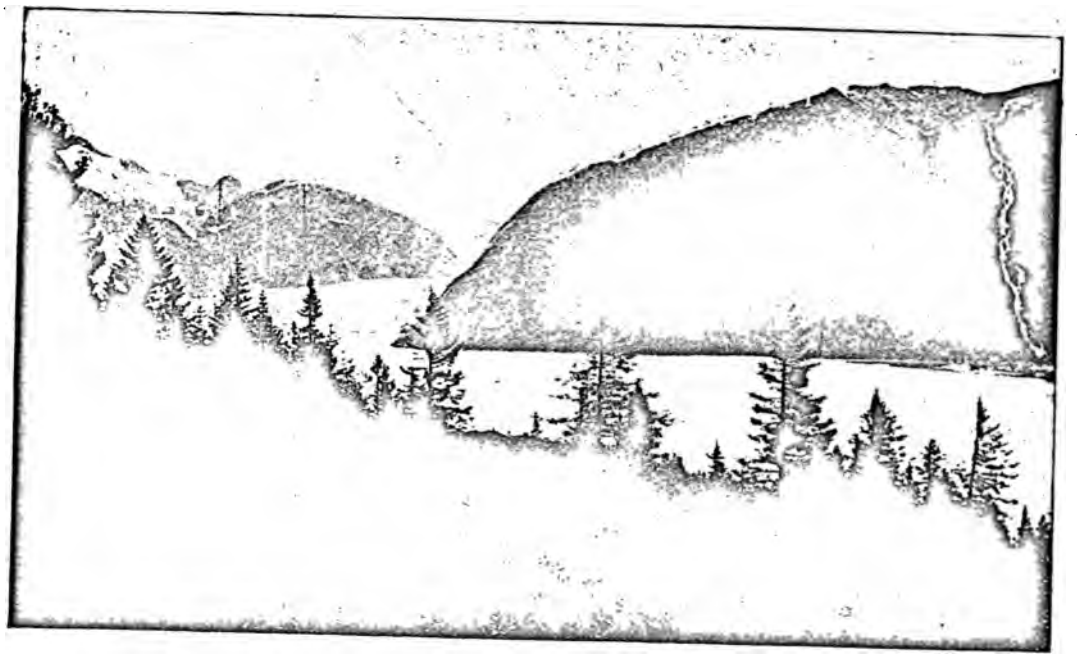
Sumner Strait extends 80 miles from the mouth of the Stikine River to the open ocean, and on its N. shore, 19 miles from Fort Wrangell, a narrow river of the sea leads to **Prince Frederick Sound**, the next great transverse channel in the archipelago. **Wrangell Strait**, more commonly known as **Wrangell Narrows**, is 19 miles in length, at times not 100 yards in width, and in the course of its windings presents features that entitle it to being one of the most famous landscape channels on the regular tourist route. Vancouver's men entered its mouth, but, believing it another inlet, turned back. It was long considered navigable only for light-draught vessels at the highest tide, and Government transports went outside from Fort Wrangell to Sitka, until the perils of *Cape Ommaney*, the fogs, storms, and currents of the ocean induced Captain R. H. Meade to survey a way for the U. S. S. *Saginaw*, in 1869. Captain J. B. Coghlan, U. S. N., voluntarily surveyed and buoyed the channel in 1884, and

later the Coast Survey made soundings. The tender of the Thirteenth Lighthouse District, which includes all of the United States shores between the Columbia River and Cape Spencer, inspects and replaces the buoys each summer.

The tourist should not miss any part of this scenic passage; the near shores, the forested heights, and the magnificent range of peaks around the Stikines delta, composing some of the noblest landscapes he will see. The sunset effects in the broad channels at either end are renowned, and the possessor of a Claude Lorraine glass is the most fortunate of tourists. He who has seen the sunrise lights in the narrows has seen the best of the marvellous atmospheric effects and colour displays the matchless coast can offer. It is a place of resort for eagles, whose nests may be seen in many tree-tops, and is a nursery for young gulls who float like myriad tufts of down in the still reaches. A hedge of living green rises from the water's edge, every spruce twig festooned with paler green mosses. At low tide, broad bands of russet sea-weed (*algæ*) frame the islets and border the shores, and fronds, stems, and orange heads of the giant kelp float in the intensely green waters. The tides rushing in from either end meet off *Finger Point*, whose two red spar buoys are prominent in the exciting navigation. The tide-fall varies from 14 to 23 ft., and salmon, entering with the tide, turn aside at the red spar buoys, clear an islet, manœuvre to the foot of a fall, leap its 8 ft. at high tide, and swim to a mountain lake.

Along Prince Frederick Sound.

Prince Frederick Sound won its name from the meeting of Whidbey and Johnstone on its shores on the birthday of H. R. H. Frederick, Duke of York, in 1794. Vancouver lay at anchor at the time in *Port Conclusion*, just within Cape Ommaney, while these two lieutenants made their final search for some opening on the mainland coast. Landing on the Kupreanoff shore, they took formal possession of the country, and dealt out double grog to their men. This ended the actual exploration, the fruitless search for the mythical straits of Anian, and "with no small portion of facetious mirth" they remembered that they had sailed from England on the 1st day of April to find the Northwest Passage. These lieutenants made plain to their chief the "*uncommonly awful*" and "*horribly magnificent*" character of the scenery along the Prince Frederick shore; and Vancouver began the lavish use of adjectives which is in vogue in Alaskan narratives to-day.



Hutli, or Thunder Glacier.

The *Devil's Thumb*, a dark spire rising 1,600 ft. from the rim of an amphitheatre 7,000 ft. above the sea, was named by Captain Meade because of its resemblance to a similar thumb or monolith on the Greenland coast. This great landmark shows from the upper half of *Wrangell Narrows*, and looms from every quarter as the ship boxes the compass in its varied course. It is a finger-board to the tourist's *first Alaskan glacier* which is a prominent feature in the long panorama along the N. wall of Prince Frederick Sound. This glacier, named *Patterson* for the late Carlisle Patterson, chief of the Coast Survey, pours over and down a great slope, showing a beautifully blue and rumpled front. In Vancouver's time it dropped icebergs from the cliffs to the water. A fine waterfall decorates the front of *Horn Cliffs* at the foot of the glacier.

The Thunder Bay Glacier.

The first tide-water glacier on the coast, latitude 56° 50′ N., is hidden at the end of **Hutli** * (*Thunder*) *Bay*, and sends out the myriad bergs that sparkle along the sound. It is picturesquely set, debouching grandly from a steep cañon cutting at a right angle from the head of the bay, and the walls are forested close to the glacier's edge. The *Hutli* is a pure white, deeply crevassed ice-stream half a mile in width; and the ice-cliffs, rising 100 and 200 ft. above the waters, are always toppling and crashing with the glacier's rapid advance. The bay is seldom navigable, because of the ice-floes, which are either packed solidly or whirling with the tides. San Francisco ice-ships loaded from this glacier as early as 1853, and halibut schooners often put into the sound for ice to pack their catch. Lying at 56° 50′ N. latitude, it shows all the features of a Greenland glacier, but its wonders were unheralded until John Muir visited it in 1879. The Stikines claim to remember a time when the glacier reached nearly to the mouth of the bay, and Vancouver's description supports them.

GLACIAL THEORY OF THE NATIVES.

The Stikines, hearing the mysterious roars and crashes from within this bay, believed it the home of the Thunder Bird, and Hutli's rough syllables stand for that mythical creature, the flapping of whose wings causes the rolling noises heard. All Tlingits believe that in the beginning the mountains were living creatures, grandly embodied spirits, whom they long worshipped. The glaciers are the children of the

* Since named by the Coast Survey *Le Conte Bay* and *Le Conte Glacier*.

mountains, and these parents hold them in their arms, dip their feet in the sea, cover them with deep snows in the winter, and scatter earth and rocks over them to ward off the summer sun. *Sitth* is their general name for ice, and its whispered sibilants suggest the Tlingits' horror of cold, even their dull imaginations conceiving a hell of ice—a place of everlasting cold as the future state of those buried in the ground rather than cremated. *Sitth too Yehk* is their ice spirit, an invisible power of evil, whose chill breath is death, who manifests himself in the keen, peculiar wind blowing over glacial reaches; whose voice is heard in the angry roar of falling bergs, and in the hiss, the crackle, and tinkle of singing ice-floes. He hurls down bergs in his wrath, he tosses them to and fro, crushes canoes, and washes the land with great waves. When the ice-wind dies away and the glacier's front is still, *Sitth too Yehk* sleeps or roams under ice labyrinths, planning further destruction. The natives speak in whispers, for fear of rousing or offending this evil one, and refrain from striking his subjects—the icebergs—with their canoe-paddles. When they must make a journey across a glacier, they implore the mercy of *Sitth too Yehk* with much big medicine and incantations, speak softly, tread lightly, and neither defile or offend it with crumb or odour of their food. The hair-seals are the children of the glacier, and proof against all this magic. They may ride on the ice-cakes with impunity, and in under the *Hutli's* and *Klumma Gutta's* (Taku's) front the man-faced seals live, terrible creatures whose spell can only be broken by one's pouring some fresh water into the sea.

All the flats between Hutli and *Point Highfield* are visited by flocks of ducks that offer sportsmen unrivalled opportunities.

The *Baird Glacier* shows its upper slopes just west of the Patterson Glacier, but the finer view of its full front and long reaches is obtained from **Thomas Bay**, which, commanding views of other glaciers, of waterfalls and splendid cliffs, has been much extolled as the scenic gem of the sound.

Cape Fanshawe is the great landmark of the sound, a storm-king and cloud-compeller that, fronting to southwestward, gathers to it all the storms that drift and draught in from Cape Ommaney. Canoes are storm-bound for weeks, and ships labour heavily to round this promontory when the great winter winds blow; but in summer the waters ripple away to clear emerald and pearly reaches. The sound is a favourite breeding-ground of whales, and in these safe, deep waters one may see the leviathans frisking, and infant spouters taking their first lessons. They were once snapped in the act by Lieutenant Niblack, whose ready camera had already caught the flying eagle and the leaping salmon.

Kupreanoff and Kuiu Islands, The Land of Kakes.

Less is known of **Kupreanoff and Kuiu Islands**—the Land of Kakes—than of the others of the archipelago, because of the bad name of that tribe inhabiting them. The Kakes frightened Vancouver's men by their manners, and are dreaded by other Tlingits, who say that they are outcast Sitkans.

They were the most dreaded of all the "northern Indians" who devastated the lower coast. In 1855 several canoe-loads were driven from place to place in Puget Sound, and ordered to go home by the U. S. S. *Massachusetts*, which served a final notice to those encamped on the spit opposite Port Gamble's mills, and then opened fire. The Kake chief and several of his men were killed, and the *Massachusetts* took the Kakes as far as Victoria, and once more told them to go. Two years later a war party of nearly a thousand arrived at the sound, and, landing on Whidbey Island in the night, called out and shot Colonel Eby, collector of customs. They mounted his head and those of three other whites on poles in their canoes, and paddled away in triumph. No retaliation was attempted, but some years later Captain Dod, of the *Beaver*, visited a Kake village, and bought Colonel Eby's scalp for six blankets, six handkerchiefs, and two bottles of rum. In 1866 the Kakes seized the schooner *Royal Charlie*, anchored near a Kuiv village, murdered the crew, and scuttled the ship. The finding of a few relics during the Kake war of 1869 cleared the mystery of that craft. They divided honours with the Haidas and Stikines in piracy and murder down the coast, but were looked down upon by both those superior people. The famous "Kake War" of 1869 arose from the Kakes murdering two Sitka traders in revenge for the shooting of a Kake by a Sitka sentry. Captain Meade took the U. S. S. *Saginaw* and destroyed three villages by fire and shell.

These three villages were in bays on the northern end of the island, and it was many years before the Kakes attempted to rebuild them. They roamed the archipelago as waifs and free-lances, creating trouble wherever they drew up their canoes. Their visits were dreaded by natives and whites. A few of the better-disposed Kakes were tolerated at Killisnoo for a time, but their reputation effectually kept fishermen and mineral prospectors away from their shores. The military census of 1869 estimated the inhabitants of Kuiu and Kupreanoff Islands at 2,000. Petroff's census of 1880 numbers them 568. The enumeration of 1890 gives but 236 Kakes, and notes but the two villages of *Port Ellis* on Kuiu and *Port Barrie* on Kupreanoff Island. In 1891 a Government school was established at *Hamilton Bay* at the north entrance of *Keku Strait*, and in January, 1892, the teacher, C. H. Edwards, was killed by two men who came in a small sloop, as he believed, to sell liquor to the Kakes.

Keku Strait, connecting Sumner Strait and Prince Frederick Sound, was long suspected to afford a safer and more direct ship-channel than Wrangel Narrows, and more scenic beauty is claimed for it.

Kuiu Island is the most extraordinary arrangement of forest-land ever scattered upon Alaskan waters. Map-makers' favourite but unpleasant comparison is to a mass of entrails surrounded by flies. The island is over 60 miles in length and 30 miles across at its widest point, but it is such a mass of peninsulas, isthmuses, and inlets fringed with tiny islets that the ordinary statement of dimensions cannot describe it. Its shores are least surveyed of any in the archipelago, and mail steamers have only touched at the cannery at Vancouver's *Point Ellis* in the *Bay of Pillars*. Dense groves of yellow cedar may be seen on its shores, and in both 1874 and 1876 the Alaska Lumber and Ship-building Company prayed Congress to grant it or to sell it 100,000 acres of timber lands on *Kuiu Island*, binding itself to establish mills and yards, and build a vessel of 1,200 tons burden within two years. The franchise was refused, and Kuiu remains a wilderness.

From Cape Fanshawe to Taku Inlet, Shucks and Sum Dum Bays.

Mt. Windham, 2,500 feet in height at the N. entrance of *Windham Bay*, marks the beginning of *Stephens's Passage*, 25 miles above *Cape Fanshawe*. The mining-camp of **Shucks**, the Shuk'hte of the Tlingits, lies at the end of *Windham Bay*, 8 miles from the entrance.

Gold was discovered at this place in 1875, and in the centennial year 30 miners were at work. In 1879 Professor John Muir visited the camp, and the miners put him on the trail of more glacial game than he had anticipated. After the Juneau discoveries Shucks was abandoned for ten years, when a company took up the basin and began hydraulic mining on a large scale. Their pipe-line and flume lead to the *Uncle Sam Basin*, 1,000 ft. above the bay, whence it is a short climb to the crest of the divide between *Shucks Bay* and the southern arm of *Sum Dum Bay*. The higher meadows, thickly carpeted with dwarf laurel, violets, daisies, anemones, buttercups, lilies of the valley, and that royal flower, the black Kamchatka lily (*Fritillaria Kamschatkensis*), are rich botanical ground, and to the sportsman the region presents the greatest attractions. These are the chosen pastures of the mountain-goat; and the mountain-sheep, keeping usually to the second and interior ranges, comes to the coast between *Cape Fanshawe* and *Taku*.

Shucks is the accepted site of the "Lost Rocker," the standard romance necessary to each mining region. In that dim time of mystery and fable "before the transfer," two Stikine miners found pockets of nuggets in a lone bay near Cape Fanshawe. They were attacked by Indians, and one miner killed. The other, left for dead beside his rocker, managed to crawl and paddle away to a settlement, and died

while describing the place where the rocker full of nuggets was left. For a quarter of a century prospectors have searched for the phantom rocker. Jo Juneau admits of having thought of it, and the tradition, dear to the Alaskan heart, has been dramatized, and every season "The Lost Rocker" draws crowds to the Juneau Opera-House.

Sum Dum, the bay whose long-drawn Tlingit syllables express in sound and meaning the noise of falling ice, was named *Holkham Bay* by Vancouver. The broad bay is seen from the steamer route with the great *Sum Dum Glacier* sloping down from the snow-fields beyond *Mt. Harrison*. It divides into the *Endicott Arm*, extending 25 miles in a southeasterly direction, and the *Tracy Arm* cutting N. and then E., some 22 miles altogether. It is a great glacial trough, soundings giving no bottom at 200 fathoms; is set with pinnacle rocks and reefs, and contains but one anchorage. Strong tidal currents and floating ice further oppose navigation.

No large steamers enter the bay, and Juneau launches proceed with extreme caution. There are three small tide-water glaciers in inlets of Endicott Arm. One of these cañons is known as *Ford's Terror*, in honour of the draughtsman of the *Patterson*, who rowed in at slack water to look for ducks. The tide turned with a roar, and the 5-mile cañon, less than 100 yards wide in places, was a stretch of rapids and whirlpools in which small bergs from the glacier raced and ground together. The sportsman was a prisoner for six hours, when he was able to make his escape with the last of the ebb-tide. There are many such reversible cataracts within the bay, and gloomy cañons that only need their Hugo, their Verne, and their Doré to immortalize them.

The most remarkable glacial exploit on this coast was that of Captain J. W. White, U. S. R. M., who took the *Wayanda* into the bay while on an exploring cruise in 1868. Seeing a great arched opening in the face of one tide-water glacier, he steered his gig into a vast blue grotto, and was rowed 100 ft. down a crystalline corridor. The colouring of roof and walls and water was marvellous, the air was pure, palpitant sapphire, and in the shadowy indigo alcove at the end the boatmen poured out libations to the ice spirits. They emerged safely, unsuspecting the perils they had braved.

The finest scenery of all is reported in Tracy Arm, and the camp in *Roaring Inlet* was visited by Prof. John Muir in 1879. He found two splendid tide-water glaciers in that magnificent fiord, one a mile and the other a half mile wide, and common Swiss or Alpine glaciers fronting on terminal moraines filled every ravine.

The Sum Dum mining camp was deserted for a decade after Juneau's discoveries, but recently the claims have been relocated, and a quartz-mill will do its feeble grinding beside the primeval mills of the gods.

Port Snettisham gives promise of importance, when its ledges of gold and silver are worked; and prospectors report the *Speel River* cañons at the head of the bay as rivalling any others in point of scenery.

In *Taku Harbour*, or Locality Inlet, as Sir George Simpson named it, the remains of the old H. B. Co.'s *Fort Durham* may be seen. The Takus drove the traders away at the end of three years, and the company secured their furs by annual visits of their steamers. The Takus several times seized these ships and looted them, and were much dreaded by all the whites. Most mercenary of all Tlingits and sharpest of bargainers, the Takus are called "the Alaska Jews," and in view of the financial advantages resulting did not oppose the coming of miners. They were never a totem-pole people; their villages are uninteresting, and they have too quickly assumed the outer habits of the whites. They were estimated as numbering 500 in 1869, but in 1880 only 269 Takus were counted; and in 1890 they had fallen to 214, with their largest village at Juneau.

Taku Mountain, 2,000 ft. high, a most symmetrical and densely forested cone, and Grand Island, 1,500 ft. in height, are the two most conspicuous landmarks. Above them is the *Taku Open*, a water cross-roads, where Stephens's Passage, Taku Inlet, and *Gastineau Channel* come together—a broad and treacherous reach where canoes are threatened by winds from the four quarters. Taku Inlet is the cradle of squalls, and Taku Open their playground. In winter, fierce *willawaws* or "woolies" sweep from the heights, beat the waters to foam, and drive the spray in dense, blinding sheets; but in summer it smiles and ripples in perfect peace, sparkles with little icebergs, and is a point of magnificent views.

Taku Inlet and the Taku Glaciers.

Taku Inlet extends 18 miles in a N. E. direction from Stephens's Passage, widening to a basin where the Taku River, a tide-water, and an Alpine glacier discharge their floods.

It is one of the show places on the Alaska coast, and is regularly visited by excursion steamers. The **Taku Glacier** was christened the *Schulze Glacier* in 1883, in honour of Paul Schulze, of Tacoma, and in 1891 was renamed the *Foster Glacier*, in honour of the then Secretary of the Treasury; but locally to geologists, tourists, and navigators it remains the Taku. The native name is *Sitth Klunā Gutla*, "the

spirits' home." It is Sitth too Yehk's, the ice spirit's, very palace of delight, and the fabled man-faced seals with their human hands live and frolic in its clear blue grottoes and crystal dells. The ice-stream, a mile in width, fills its cañons from wall to wall, and its squarely broken front rises from 100 to 200 ft. above the water. It is one of the purest and clearest glaciers, without medial or apparent lateral moraines, and deeply fissured and crevassed for the 5 miles of its course which is visible from the water. Because of its purity, ships prefer to fill their ice-boxes in this basin, and the process of lassoing the icebergs and hoisting them on board is an interesting feature in ship life.

On the north shore of the inlet there is a large glacier of the Swiss type, two ice-streams joining and sweeping in a broad fan slope to a terminal moraine a mile in width. A forest has grown upon the western edge of the moraine, and the sandy level is cut by many water-courses and covered with beds of crimson epilobium. A landing is sometimes made, and tourists are given opportunity to visit this glacier, which the natives call *Sitth Kadischle*, the Spaniards' Glacier. The Kadischle was christened the **Norris Glacier** in 1886, for Dr. Basil Norris, U. S. N., and in 1891 was named the *Windom Glacier*, in honour of the late Secretary of the Treasury. To tourists and scientists it is most commonly known as the Norris. It is more broken than either the Mer de Glace or the Aletsch Glacier, and is six times the width of the former and three times the width of the latter at the last gateway, where it spreads out into the great rounded front.

Whidbey and his men were doubtless the first whites, the supposed Spaniards, to enter the inlet, August 10, 1794. From Vancouver's account, the rapid retreat of these glaciers may be estimated. "From the shores of this basin a compact body of ice extended some distance nearly all around; and the adjacent region was composed of a close connected continuation of the lofty range of frozen mountains, whose sides, almost perpendicular, were formed entirely of rock, excepting close to the water-side, where a few scattered dwarf pine-trees found sufficient soil to vegetate in; above these the mountains were wrapped in undissolving frost and snow. From the rugged gullies in their sides were projected immense bodies of ice that reached perpendicularly to the surface of the water in the basin, which admitted of no landing-place for boats, but exhibited as dreary and inhospitable an aspect as the imagination can possibly suggest." The Takus claim that their fathers remembered a time when the Kadischle (Norris-Windom) Glacier broke off into the sea, and that the Kadischle came at that time.

None of these glaciers have been explored or mapped, nor their mo-

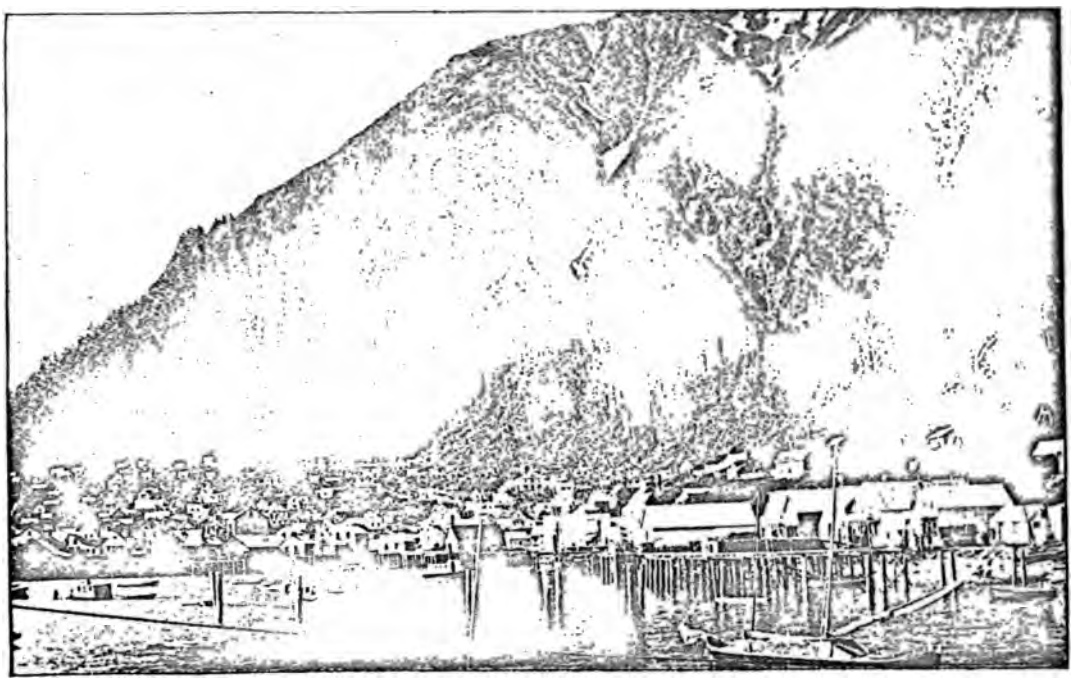
tion measured, although the basin is the most accessible and convenient place for a geologist's summer camp. John Muir says that he only "glanced" at the Taku glaciers in 1879. In 1889 Viscount de la Sabbatière and his comrades of the French Alpine Club camped here, but mainly as sportsmen. In 1890 the Coast Survey charted the waters.

The *Taku River*, leading to the interior, was known to the H. B. Co. and its head-waters were carefully explored by the Western Union Telegraph Company's parties, 1865–'67. Prospectors have followed the Taku since, reporting it navigable for canoes for 60 miles, but plagued with mosquitoes. In 1891 Lieutenant Frederick Schwatka and Dr. C. Willard Hayes ascended to the head-waters and crossed to an affluent of the Yukon, by which they reached Fort Selkirk and proved the existence of an easy route to the northern mines.

The Harris Mining District.—Juneau and its Vicinity.

Gastineau Channel, named for an old H. B. Co. ship, which was named for the Gastineau River near Quebec, Canada, separates *Douglass Island* from the mainland above the Taku Open. It narrows from a mile and a quarter at the entrance to a half mile abreast the Treadwell wharf, and the precipitous mountains on the eastern side are over 2,000 ft. in height, with many cascades slipping down those velvety green precipices with continuous roar.

Juneau, the largest town in the Territory and the centre of mining operations, is situated on the north or mainland shore of Gastineau Channel, 10 miles above its entrance. It has a population of 1,500, which in winter is largely increased by the miners who come in from distant claims and prospecting tours. It has a court-house, several small hotels and lodging-houses, 3 churches, 3 schools, a hospital, an opera-house, a weekly newspaper, a volunteer fire brigade, a militia company, a brass band, and, in 1891, 22 saloons. A village of Taku Indians adjoins it on the E. below the wharf, and an Auk village claims the flats at the mouth of Gold Creek. A few interesting graves are on the high ground back of the Auk village, many ornamented with totemic carvings, and hung with valuable dance-blankets and other offerings to the departed spirits which no white dares disturb. The town-site covers the slope of *Chicken Ridge*, separated from *Bald Mountain* by *Gold Creek*. Numbered avenues running parallel with the beach terrace the slope, and are intersected by Gold, Lincoln, Seward, and Harris Streets. At Third and Seward Streets is the heart of the town, and the Indians hold a daily open-air fish, berry, vegetable, and curio market there, in addition to the curio market on the wharf on steamer days. There are



Juneau.

several curio shops along Water or Front Street, and on Seward Street, and the finest display of seal, otter, beaver, bear, fox, wolf, mink, ermine, squirrel, and eagle skins will be found at the largest trading stores. A path leads from the top of Seward Street to the Auk village and to the cemetery across Gold Creek.

The eminence between the town and the Auk village is known as Capitol Hill, and Juneau citizens are confident that the future Legislature of Alaska will convene on that hill. Juneau miners wrested from Congress the few political advantages the Territory enjoys. They once sent a delegate to Washington, and even had a clause moving the capital from Sitka to Juneau considered in Congress. There is bitter rivalry between the capital and metropolis.

In 1879 Indians brought bits of gold quartz from Gastineau Channel to Captain L. A. Beardslee, commanding the U. S. S. *Jamestown* at Sitka. In 1880 Mr. N. A. Fuller, a Sitka merchant, "grub-staked" Joseph Juneau and Richard Harris and sent them to search "the largest of three creeks lying between the Auk Glacier and Taku Inlet." They beached their canoe on October 1st, and broke rich specimens from the "Fuller the First" claim in the Basin at the head of the creek three days later. Returning to the beach, they held a meeting, with Joseph Juneau in the chair, organized the "Harris Mining District of Alaska," and made Richard Harris recorder. When the discovery was made known, there was a stampede for "the Taku Camp," and hundreds reached *Miners' Cove* that winter in order to be on the ground in the spring. A guard of marines from the U. S. S. *Jamestown* maintained order during the first year, but when withdrawn, an era of lawlessness succeeded, which was slightly quelled by the vigilance committee of 1883-'84. With no land-laws, and no Government recognition or protection, the miners could not effect much until the passage of the organic act, in 1884, gave them title to mineral claims, since which the region has rapidly progressed.

The new camp was named Pilzbury, for the first assayer who came; then Fliptown, as a miner's joke; next Rockwell, for the marine officer of the U. S. S. *Jamestown;* fourthly, it was called Harrisburg; and fifthly, Juneau. This last name was formally adopted at a miners' meeting held in May, 1882, and at the same time all Chinese were ordered to leave the camp. There were anti-Chinese riots in 1886; Chinese cabins were blown up by dynamite, and the Chinese in town and at the mines on the island were driven on board a schooner and set adrift without provisions. The town-site was surveyed and patented in 1892.

The Silver-Bow Basin Mines.

The mines in the **Silver-Bow Basin**, at the head of *Gold Creek*, are reached by a well-built waggon-road, 3½ miles in length. The old trail may be seen zig-zagging across the hillside behind the beach, but

is so overgrown on the Basin side that its use is impracticable. There is a road along either side of the creek, that on the southern or Juneau side affording the finest views of the opposite Yosemite walls.

Snowslide Gulch, on this Juneau side, usually bars the pathway with deep snow-banks throughout the summer. "Coulters," or the Taku Union mill, is half-way up the cañon, and on the northern side a wire tramway brings buckets of ore from a claim high on *Bald Mountain*, among bryanthus meadows where the mountain-goat browses. Granite Creek, a clear blue mountain stream, joins Gold Creek at the entrance to the Silver-Bow Basin, which a party of Montana miners named for their last camp in that State. This deep bowl in the mountains has long received the *débris* ground from the perpendicular walls, and was the rich placer-ground worked in those first years when a half million in gold dust and nuggets was carried out by the miners each season. When these placers were worked as low as their water system would allow, the claims were abandoned. Over 50 old placer claims, all the level floor of the Basin, are owned by the Silver-Bow Basin Mining Company, of Boston, which has driven a tunnel 3,000 ft. in length in from *Charlotte Basin* below, and made an upraise of 90 ft. to pits where two hydraulic giants are washing out the banks by many acres each season. Work is continued night and day from May to October by the use of electric lights. The same company have acquired many of the quartz claims surrounding the Basin, and their 20-stamp-mill disposes of many tons of ore daily. **The Silver Quiver**, a vast cataract of foam, in outline like an arrow-case, hangs high on the farther wall, its 300 ft. fall dwarfed by its gigantic surroundings. The Eastern Alaska Mill is driven by this waterfall, and the ore comes to it in buckets moving on a wire tramway from the tunnel, 1,000 ft. above.

Sheep Creek, 2 miles S. of Juneau, holds a waggon-road which leads by steep and picturesque shelves to a small basin where rich silver veins crop out. A mill was erected and the ore successfully worked for two seasons, 1890–'91. The ore averaged $40 per ton, and beautiful specimens of ruby-silver, averaging 75 per cent silver, were found. The same veins crossing the ridge reappeared on *Grindstone Creek*, on the Taku Inlet side. The Sheep Creek Basin is the most picturesque of such high mountain valleys, its floor a vast flower-bed, and its perpendicular walls support gleaming glaciers.

Lemon, *Montana*, and *Salmon Creeks*, on the mainland shore above Juneau, hold large gravel-beds, which it is proposed to work with hy-

draulic giants. The upper reaches of Gastineau Channel were not navigable in Vancouver's time, because of the floating ice from the great *Auk Glacier*,* the *Sitth Kles Chanaje* (the place where beef or meat is found). The Auks gave it this name because they were always sure of finding mountain-goat on the pastures around its *nevé*. The glacial débris has now filled out the channel, until it is only navigable to canoes at high tide.

These Auks, who claim Douglass Island and the shores fronting it, are said to be outcasts from the Hoonah tribe, and have always had a bad name. They numbered 800 in 1869, in 1880 they were counted for 640, and in 1890 there were but 277 found by census enumerators. When Vancouver's men hurried away from the trumpeting Chilkats they fell among the Auks. Their canoes trailed after and surrounded Whidbey's boats. With daggers lashed to their wrists, the warriors landed in advance, and danced on the beach, spears in hand. Mr. Whidbey became nervous, and considering it more "prudent and humane" not to disturb them, whiled away the night in his boats, and then returned to the fleet at Port Althorp.

The Largest Quartz-Mill in the World.†

Douglass Island, 25 miles long and averaging from 5 to 8 miles in width, is as much a treasure-island as the Pribyloffs. One mine, the **Treadwell**, has yielded more gold than was paid for all of Alaska, and while a few prospectors have crossed the island, they have only scratched its shore-line in their search for minerals. Vancouver named the island for his friend the Bishop of Salisbury. It was an untouched wilderness until 1881, when miners, who came too late to stake off anything on the Juneau side, made a camp opposite the tiny Juneau Isle. John Treadwell, a San Francisco builder, unwillingly took the original Bean and Matthews claim on Paris Creek as security for the loan of $150. After it had fallen to him, he bought the adjoining claim of M. Pierre Joseph Ernsara, or "French Pete," for $300. Messrs. Frye, Freeborn, and Hill, of San Francisco, and Senator John P. Jones, of Nevada, became equal partners with him. Mr. Treadwell remained on the ground, and personally held and defended his property from lawless squatters, who washed off the surface of his lode, and could not be driven off until the organic act secured his title.

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* The Auk Glacier was named the Mendenhall Glacier by officers of the Coast Survey in 1891.

† There are single mining corporations in Hungary and South Africa employing as many stamps, but in separate buildings and plants.

Over $800,000 has been spent upon the Treadwell works since then; $100,000 was spent on a ditch 18 miles long, and $300,000 in experimenting with different processes of chlorination before a satisfactory one was found. The one mill of 640 stamps, the largest of its kind in the world, has never stopped night or day, summer or winter, save to set new machinery. Six hundred tons of ore is milled each day, averaging from $3 to $7 per ton in value, and milled at a cost of $1.25 per ton. The ore is quarried in open pits, and, falling through ore-shoots to cars in the tunnels below, is moved by gravity through every process. The heavy plume of smoke from the Treadwell's chlorination works has killed vegetation for a mile up and down the island's edge.

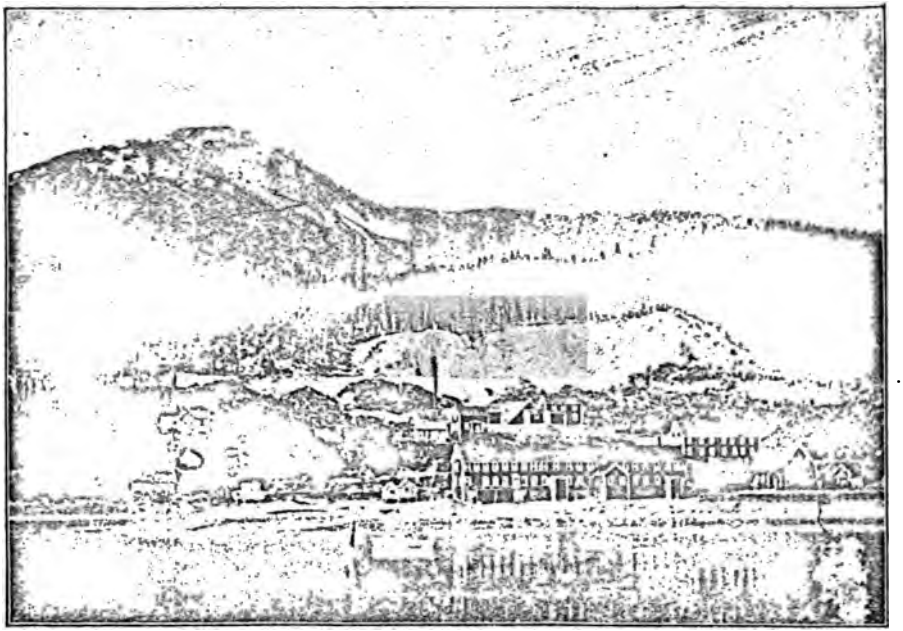
The mill-owners make no objection to tourists visiting the establishment, but as they cannot undertake to suspend work nor to station guards or guides, visitors are urged to exercise great caution in entering tunnels, where trains are always moving; pits, where blasts are being fired; and the mill, where no voice can be heard to warn them of belts and cogs. By following the path around to the left of the mill, one may reach the edges of the two great pits, and by following the pipe-line up to the reservoir, a quarter of a mile from the wharf, he reaches a meadow of dwarf laurel and countless strange wild flowers. The ditch and flume furnish a pathway through the heart of the forest, following the convolutions of the hillsides to a point 8 miles above the mill in air-line, but 18 miles distant by the flume.

The *Mexicos* mine, adjoining the Treadwell on the east, is owned by the same stockholders, and further claims assert the extension of the same mineral vein nearly to the foot of the island.

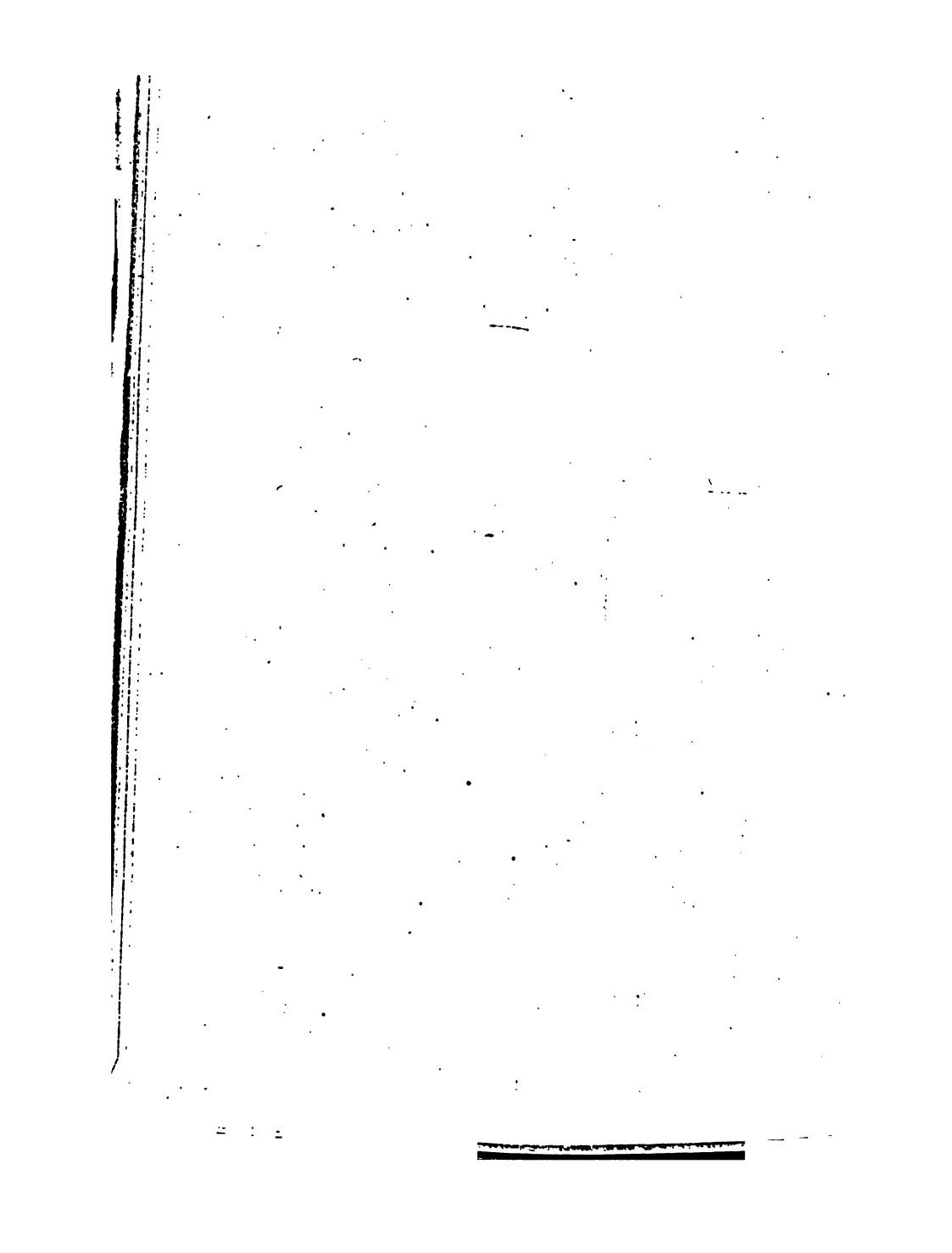
The *Bear's Nest* mine, adjoining the Treadwell on the west, is owned by German and English capitalists, and, owing to disagreements between mining engineers and stockholders, the big mill was never operated after its completion in 1888. Its promise built up the adjacent *Douglas City*, which held but 300 inhabitants in 1890, with a street of stores, a saw-mill, a church, and a school-house.

The U. S. Geological Survey has never made examination of this mineral region. The enormous deposit of low-grade ore on the Treadwell claim is a fault or freak, a mere pocket or chimney of quartz not parallelled elsewhere on the channel. The most experienced mining superintendents confess themselves puzzled in this country, geologically unlike any other. The country rock, the general formation, is slate, which, with granite, holds the quartz veins, but the veins are broken, confused, thrown in every way, often without distinct walls, and a large party contend that there are not any true fissure veins in the country. Dr. George M. Dawson visited the Treadwell for his own geological satisfaction, and wrote in "The American Geologist," August, 1889: "It presents none of the characters of an ordinary lode or vein, being without any parallel or arrangement of its constituents, and showing no such coarse crystalline structure as a lode of larger dimensions might be expected to exhibit."

Miners' wages range from $2 per day for Indians, and from $3 per



The Treadwell Mine, Douglass Island, A. T.



day upward for white men, with board and lodging provided by the employer. The cost of provisions averages more than $1 a day for each man in the larger establishments. Beef cattle are brought up from the Sound and slaughtered at Juneau, which is the only place in Alaska enjoying a regular supply of fresh beef. With the abundance and cheapness of venison, duck, salmon and other fish, the prospector lives better with less exertion and cost than in any other known mining region. Ten-pound salmon may be bought for five and ten cents in the summer, halibut as cheaply in the winter, and a whole deer for $2 at any season, and the miner has less to contend with than in Arizona, Montana, or other new countries. Every condition of life in those regions is reversed, however. All travel is by water, the canoe becomes his pack-mule, and water-courses are his only trails. He has to cut his way through an unbroken forest from the moment he leaves his canoe, sinking knee-deep in the thick moss or sphagnum, and a camp-fire built on such ground gradually burns a deep well-hole for itself. A tent and a Sibley stove are necessary in this region of frequent rains.

Admiralty Island.

Admiralty Island, 100 miles in length, with an average breadth of 30 miles, is unsurveyed like the other great islands, save as the prospectors have followed the shores and the water-courses. *Kootznahoo Inlet* cuts it nearly in two, and is an inland sea embracing a small archipelago of its own, sheltered in the heart of the little Admiralty continent.

Glass Peninsula, on the eastern side, is a considerable island itself, and only joined to the parent shore by a spongy isthmus, over which the Auks drag their canoes. *Hawk Inlet* almost cuts loose the northern end of the island, which is as large and considered as rich mineralogically as the opposite *Douglass Island*. A snow-capped mountain range fills the interior. Marble bluffs front for miles on the western shore, and coal has been found in *Kootznahoo Inlet*, and on the southeastern shore.

Gold quartz veins were found on the northern shore, and this "Tellurium Group" promises to build a second Juneau in the picturesque bay named for Captain Robert *Funter*, an early navigator of the Northwest Coast.

Killisnoo, on *Kenasnow* ("near the fort") *Island*, holds *Kotcosok Harbour* between it and the Admiralty shore, and is the site of large oil and guano works. There are a post-office, Government school, and Russian chapel at this place, and a village of Kootznahoo Indians under command of their great chief Kitchnatti, or Saginaw Jake.

The first post of the Northwest Trading Company was established here in 1880 as a shore station for whaling. The explosion of a bomb harpoon killed a great medicine-man in 1882, and the company refused the Kootznahoos' demand of 200 blankets as indemnity. The natives held a white man as ransom, but discovering him to possess but one eye they returned him as *cultus* (worthless), and demanded a whole and sound man as an equivalent for their dead shaman. Their threats to murder the whites at the station were answered by Captain Merriman, the naval commander at Sitka, who hurried over in a revenue cutter, held a council, and bombarded the village of Angoon, the Bear Fort of the Kootznahoos in the great inlet. Much indignation was vented by Eastern editors at the occurrence, and sad pictures were drawn of the natives left shelterless among "the eternal ice and snows of an arctic winter." The mercury stood 20° higher for the month than in New York and Boston, and the Kootznahoos, securing front seats on the opposite shore, watched the bombardment and cheered the neatest shots. The tribe saved their winter provisions and all their belongings, save what pilferers took during the bombardment. They paid a fine of 400 blankets, and have since kept the peace.

FISHERIES OF THE REGION.

The cod which abound in *Chatham Strait* were for a time packed at Killisnoo, the natives receiving two cents apiece for the 8,000 and 10,000 fish of 5 pounds' average weight which they brought in daily from their trawls. The cod were dried artificially, and an excellent quality of cod-liver oil was made, but this factory could not compete with the Shumagin fleet which controlled the market at San Francisco. The herring, "which has decided the destiny of nations," next made the fortunes of Killisnoo. From September to May all these waters are visited by great schools of herrings, and once in August the mail steamer passed through one school for four hours—the water silvered as far as could be seen, many whales and flocks of gulls attracted by this run of plenty. The natives rake them from the water with a bit of lath set with nails, and a family can fill a canoe in an hour. Spruce branches are laid in shallow water along the shore, and the herring roe deposited on them are stored in cakes for winter use. The factory's crews net from 300 to 600 barrels of herring at a single haul. Often 1,000 barrels are seined at once, and 1,500 barrels were recently taken by one cast of the seine in Sitka harbour. The same machinery and processes are used at Killisnoo as at the menhaden factories in the East. Each barrel of fish when pressed yields 3 quarts of oil, valued at 25 and 35 cents a gallon. The refuse of 50 barrels of fish, dried and powdered, furnishes one ton of guano, worth $30, and is much in demand for Hawaiian sugar plantations and California fruit ranches.

One hundred whites and 50 natives are employed, and the factory is a model of neatness and order, despite the odours. Its gardens are worthy of a visit.

THE KOOTZNAHOOS.

Saginaw Jake is a chief object of interest to tourists. His people, the Kootznahoos, whose name has been spelled in fifteen ways, claim to have come from over the seas, and deny any common origin with the Tlingits. They first manufactured the native spirit, *hoochinoo*, which carries more frenzy in each drop than any other liquid, and is distilled in old coal-oil cans from a mash composed of yeast and molasses or sugar, mixed with flour. They made hostile demonstrations to Vancouver's men, and Whidbey believed it "more humane and prudent" to leave before tempted to hurt the Kootznahoos. They murdered traders and prospectors as soon as the Russians left, and in 1869 Commander Meade, U. S. N., went in the *Saginaw*, shelled the village in the inlet, took Kitchnatti prisoner and conveyed him to Mare Island, Cal., where he was confined on the *Saginaw* for a year. The result of this arrest rendered it unnecessary to transfer the garrison from Sitka and build a post on Admiralty Island, as had been contemplated. The tribe, reduced to 470 souls in 1890, one half the number reported in 1869, are peaceable followers of this old chief, who wears a gaudy uniform, and posts this scutcheon over his log-cabin door:

"KITCHNATTI."

"By the Governor's commission,
And the company's permission,
I'm made the Grand Tyhee
Of this entire illahee.

"Prominent in song and story,
I've attained the top of glory.
As 'Saginaw' I'm known to fame,
Jake 'is but my common name.'"

A young demagogue, a common Kootznahoo politician, has lately set up as a rival and successor of Jake, displays a bombastic couplet on his door-post, and matches every move the great man makes.

There is a large lagoon opposite *Killisnoo*, reached by a rocky pass at high tide and by carries at low water, where herring swarm in their time, malma swim in the tourists' season, and luck always attends a fisherman. *Killisnoo* is an admirable headquarters for sportsmen, who can here charter launches and find native guides and canoemen.

Kootznahoo Inlet can busy sportsmen-explorers for more than a month, and is a maze of islands, inlets, bays, coves, lagoons, creeks, and lakes. The narrow entrance is 3 miles above Killisnoo, and just within there is a reef-strewn pass, where the tide runs out with great overfalls and roars, attaining a speed of 12 knots an hour—the equal of Seymour Narrows. At the *Second Rapids*, Captain Meade anchored the *Saginaw* at slack water in 1869, but with the ebb of the tide the whirlpools and overfalls caused the vessel to keel over, to

sheer violently and nearly snap its cables before it could get away. He named the place *Hell's Acre*. The large village facing this watery acre, although deemed a secure retreat in all attacks, was strongly fortified, and the older lodges and the graveyard are interesting.

Veins of bituminous coal at the head of the inlet were discovered by Lieutenant Mitchell, U. S. N., in 1868, were visited by Mr. Seward the following year, and have been regularly rediscovered every season since. As first tested, it burned quickly, produced great heat, but rapidly destroyed grate-bars and boiler-iron. Many interesting fossil plants and shells and larger remains have been found in the shales, clay, and sandstones of these formations, and the supposed collar-bone of a pterodactyl, exhumed here by Rich and Willoughby, was long exhibited at Juneau. Bear, deer, wild fowl, salmon, malma, and trout reward those seeking them, and artists are promised landscape rewards.

Along Chatham Strait and Lynn Canal.

Chatham Strait and its northern continuation, **Lynn Canal**, afford the noblest water-way in the archipelago, a broad highway running almost due N. and S. for 200 miles, with an average width of 5 miles. Geologists easily recognize it as the bed of a great glacier. Colnett and the early fur-traders knew it and named it before Vancouver arrived, and the latter wrote that "the sea-otter were in such plenty that it was easily in the power of the natives to procure as many as they chose to be at the trouble of taking." The free fishing which Russia allowed for the ten years after the conventions of 1824–'25 exterminated the precious animal.

Chatham Strait is a playground of inferior whales, great totemic creatures whom the Tlingits believed were once bears, but, going to sea, wore off their fur on the rocks and had their feet nibbled off by fishes. A demon, or the all-mischievous raven, often creeps down the whale's throat, and causes such agony that the whale rushes to shore and vomits the intruder on the beach. Paintings and carvings showing the demon in the whale's body are often assumed as proof that the Tlingits have a Jonah legend and direct Asiatic descent. The Chatham Strait whales are credited with the same aggressive disposition as the cinnamon bear, attacking and destroying canoes. A few years ago, a duck-hunter, who unintentionally wounded a frolicking whale, was attacked, and only escaped by reaching shallow water.

Halibut-fishing may be followed with success anywhere in the strait, and the crudest tackle with a bit of salmon or a herring for bait will decoy "chicken halibut" of 30 and 60 pounds while a steamer waits at Killisnoo wharf.

Lynn Canal, the grandest fiord on the coast, was named for Vancouver's native town in Norfolk, England, and *Point Converden* at its entrance celebrates his own country estate. It extends for 55 miles to *Seduction Point*, where it divides into the *Chilkat Inlet* on the W. and the *Chilkoot Inlet* on the E. It has but few indentations, and the abrupt palisades of the mainland shores present an unrivalled panorama of mountains, glaciers, and forests, with wonderful cloud effects. Depths of 430 fathoms have been sounded in the canal, and the continental range on the E. and the White Mountains on the W. rise to average heights of 6,000 ft., with glaciers in every ravine and alcove.

The **Eagle Glacier** shows first on the mainland shore above the **Auk Glacier.** "It is surmounted by a rocky crag, which resembles our national bird so much more than does the figure on the new dollar, that we christened it the Eagle Glacier," wrote Captain Beardslee in August, 1879.

The Cameron Boundary Line* crossing from *Point Whidbey* to *Point Bridget* would cut the fiord in two and give to Canada *Berner's Bay*, where the Tucknook placers and the *Seward City* mines give great promise. Captain White, who found rich sulphurets at Funter Bay in 1868, took the *Wayanda* into Berner's Bay and found "numerous quartz veins containing sulphurets," which he had also found "occurring in similar formation along the N. E. shore of Admiralty Island, and on the mainland as far as Taku Harbour, 60 miles S. E. of Berner's Bay."

William Henry Bay, on the opposite shore, is a nook commended to sportsmen by Captain L. A. Beardslee, whom the struggling salmon tripped up as he attempted to wade the stream; who found many bear-tracks, and evidences of the best duck-shooting. Fifty spider crabs were speared by his companion in a few hours, a crab whose claws measure 5 ft. from tip to tip, and whose 7-inch shell is packed with a fine, delicious meat.

Seduction Point was so named by Vancouver because of "the exceedingly artful character" of the natives inhabiting it. Several canoe-loads of Chilkats met Whidbey at this point, seemed most friendly and hospitable, and led the way up the western arm, but grew hostile when the Englishmen refused to cross the bar and ascend the river to the village where eight chiefs of consequence resided. All were arrayed in ceremonial dress, wearing the fringed *narkheen*, or Chilkat dance-blanket, with tall head-dresses, and one flourished a

* See map on page 51.

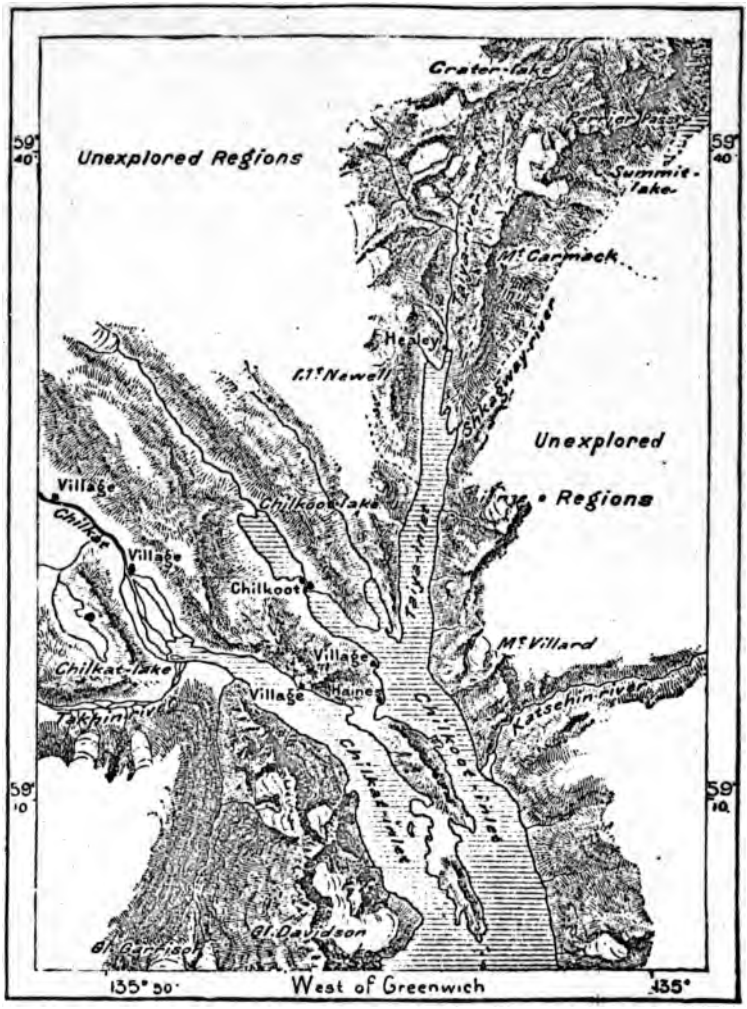
brass speaking-trumpet with great effect. When Whidbey returned from this cruise, Vancouver abandoned all hope of finding the North-west Passage:

"From the close connection and continuation of the lofty, snowy barrier, little probability can remain of there being any navigable communication, even for canoes, between such waters (Hudson Bay) and the North Pacific Ocean, without the interruption of falls, cataracts, and various other impediments," and for 90 years explorers halted at the foot of this great barrier, the "firm and close connected range of stupendous mountains forever doomed to support a burden of undissolving ice and snow."

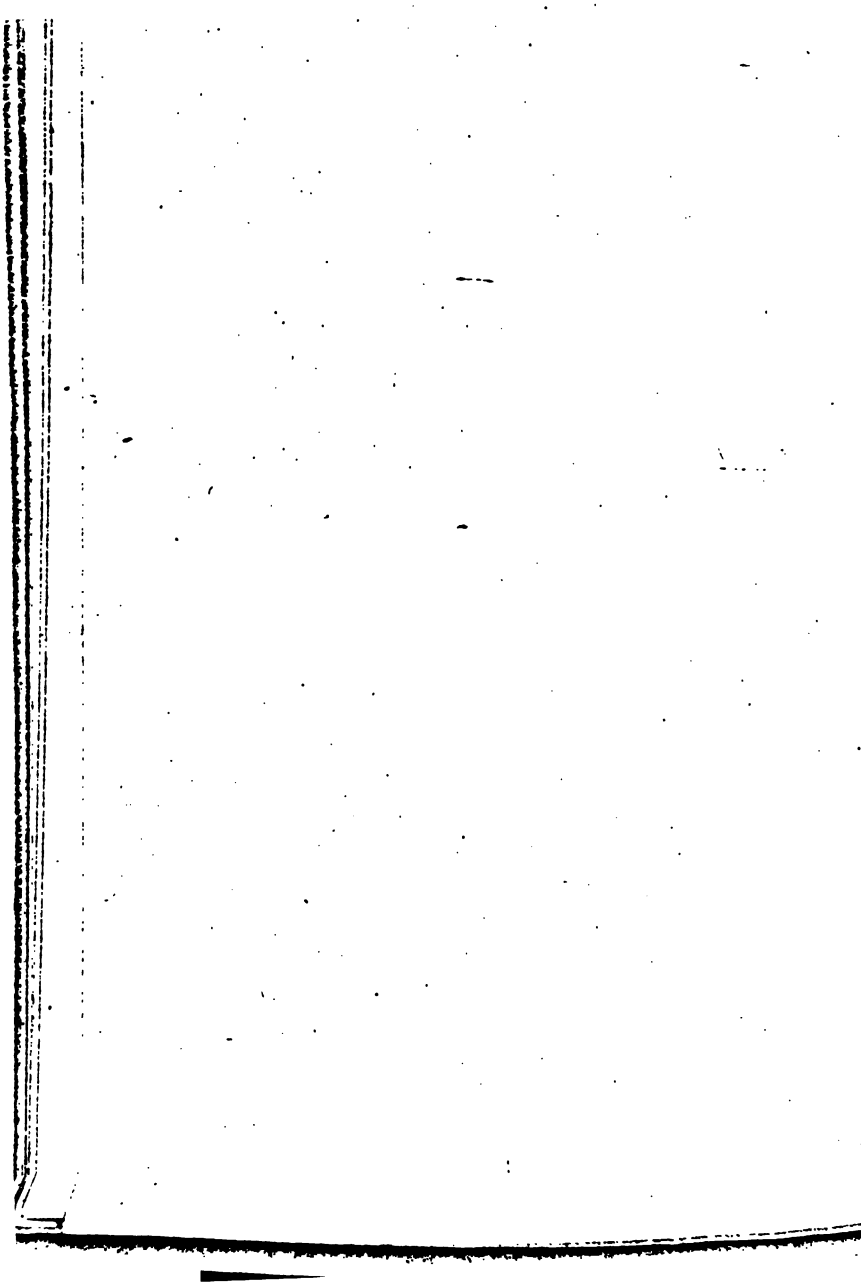
The **Davidson Glacier**, which sweeps superbly from a gorge in the White Mountains and spreads out in a broad, evenly ribbed fan front, is the most imposing and symmetrical ice-stream of its type in the region. It is named for Prof. George Davidson, the astronomer, who explored its lower slopes during his visits to the Chilkat country in 1867 and 1869. It has built a terminal moraine far out into the channel, and a half-mile-wide forest belt encircles the three-mile curve of the glacier's foot. The moraine is channelled with streams and is swampy throughout. The base of the glacier presents a chaotic mass of grimy ice-blocks, and it is a tortuous mile up the ice cliffs and between crevasses to the line of the mountain gateway, where Prof. Davidson found the ice-level 645 ft. above the channel. Steam-launches can be chartered at the canneries to convey tourists to this glacier, and a tolerably dry path has been found leading to the ice. The finest view of the glacier is had from the ship when directly abreast of it in the morning. From Pyramid Harbour the ice mass seems to project in air and overhang its base.

The Chilkat Country and the Passes to the Yukon.

There is a small glacier in the cañon behind **Pyramid Harbour** which lies at the foot of the precipitous mountain named for the H. B. Co.'s ship *Labouchere*. This remarkable mountain rises as straight as a mason's wall for 2,000 ft. above the beach, "subtending an angle of more than 30° as seen from the shore of the harbour," and shadowing a ship at anchor. It has been climbed in two hours by an approach from the west side, but its forests contain many bears, whom the climber must be prepared to meet. The cannery and trading station at Pyramid Harbour were established in 1882, and have been successful, save in the season of 1891, when a spring avalanche wrecked the can-



Chilkat and Chilkoot Bays.



nery and cabins. There is usually a large camp of Chilkat Indians below the cannery, and addition to baskets, spoons, and curios they often make a flower market with the wild roses and iris which attain wonderful size and colour in this Alpine valley. Wild strawberries are found on the flats, together with the salmon-berries and thimble-berries of the coast.

The little *Pyramid Island*, off Pyramid Harbour, has been also known as Stony, Sandy, Farewell, and Observatory Island. The native name is *Shla-hatch*. It is the U. S. astronomical station, its position 59° 11′ north and 135° 26′ west, and is the tourist's farthest north, where he exposes photographic plates, and reads fine print, at midnight in July.

Chilkat, a rival cannery and trading station, was built on the opposite side of the inlet in 1884, and as a point of departure for Yukon travellers this has Chilkat become quite a village. The Chilkat cannery is one of the largest in southeastern Alaska, and its catch of king and red salmon busies a large force of whites and Chinese. The natives were not altogether pleased with the canners' invasion, and there have been many troubles. The rivalry of the canneries once raised the price of a single salmon from two to fifteen cents, and when the two establishments agreed upon a common price for the next season the Chilkats rejected their terms. Once fifteen cents, always fifteen cents, they insisted. Chinese and whites were sent for, and there has been trouble nearly every summer since. The Chilkats naturally objected to this invasion of their own-fishing grounds, the seining of the river of every salmon, and the great waste and destruction of other fish that are their main food supply; but each time the Governor and the man-of-war are summoned, and the Chilkats are bidden to let the white poachers and their nets alone, on pain of punishment.

A trail a mile and a half long leads through the miry woods across to the site of the mission station of **Haines**, on *Chilkoot Inlet*, whence Yukon miners canoe to the end of *Taiya Inlet*. Dr. and Mrs. Willard abandoned the mission a few years ago because of the hostile and suspicious actions of the Indians after the death of a child to whom they had given medicines.

THE GREAT TRIBE OF THE TLINGIT NATION.

The **Chilkats** and the **Chilkoots**, really one tribe, are the great people of the Tlingit nation. Captain Beardslee says, that "their legend is that originally all the Tlingits lived in the Chilkat country;

that there came great floods of ice and water, the country grew too poor to support them, and many emigrated south." No geologist takes exception to this legend.

They have always been great grease-traders and middle-men, and possessed more wealth than any other tribes. They were opposed to any white interference with their trade with the Tinnehs, or interior tribes, and for fifty years successfully resisted the attempts of traders and miners to cross the passes to the Yukon basin. The Chilkats' fur-trade was most valuable to the H. B. Co., but its agents never saw or traded directly with the Tinnehs, who furnished the pelts brought to them at *Mt. Labouchere*. The Chilkats met the Tinnehs at the divide and bought their furs.

The Tinnehs never attempted to pass the line, and the few brought as guests were overpowered with the sights of the great villages, the war canoes, and the traders' fire-ship, smoking like a huge pipe, and moving without paddle or sail. The H. B. Co. sold flint-lock muskets for as many marten-skins as could be piled between stock and muzzle, and the fashion in gun-barrels progressed until the huntsman's weapon was as tall as himself. The white men made a profit of a few hundred per cent on these sales, and the Chilkats cleared a few thousand per cent when trading with the Tinneh. A Boston brig visited Lynn Canal in 1807, and in an attempt to board and loot her 70 Chilkats were killed. They were dreaded by the smaller tribes below them, and fought all the villages between their homes and the Nass River.

The Chilkats "mustered about 2,000" in 1869, in 1880 there were 988, and in 1890 only 811 of the tribe, the enumerators finding that one whole village had been wiped out by *la grippe*. Their winter homes are in three villages up the Chilkat River—*Hindasetukee*, or *Tondustek* ("the village on the east bank of the river"), or Doniwak's village, is at the mouth of the Chilkat River, where only canoes can go. *Kut-kwuttlu-lu*, "the place of gulls"—and no gull could speak it more plainly—is next on the river, and then comes the capital, *Klukwan*, "old town," where Kloh-Kutz lived and ruled; where every house was fortified with bastions and port-holes; where each totem had a splendid feast-house, with massive carved columns inside; and the grave-yards are still an ethnologist's paradise. In summer these villages are depopulated, the people flocking to Chilkat and Pyramid Harbour to sell curios and spend what little they may acquire in debaucheries. Saloons were openly kept in 1892, the Chilkats were able to buy liquor by the barrel, if they wished, and the end of the great tribe is at hand.

Kloh-Kutz, Chartrich, or Hole-in-the-Cheek, their great head-chief, was a hero worthy of Cooper, and of the best type of Chilkat warriors. His father was one of the band that went over and destroyed the H. B. Co.'s Fort Selkirk, on the Yukon, in 1851, because of interference with their trade; and Kloh-Kutz drew for Professor Davidson the first map of the passes leading from the Chilkat country to the Yukon. The great astronomer first knew him in 1867, and when he returned to observe the total eclipse of the sun in 1869, Kloh-Kutz made the party his guests, and established them in the council-house at Klu-Kwan.

Mr. Seward spent eclipse-day (August 8, 1869), at Klu-Kwan, escorted up and down the river by war canoes manned with the flower of Chilkat chivalry. These people commanded the admiration of all whites who knew them before the canneries and miners came, and contact with civilization wrought their ruin. Professor Davidson brought first word of them, and made a vocabulary of their dialect. Lieutenant C. E. S. Wood visited them in 1877, and recorded much of interest in his "Among the Thlinkits in Alaska" (Century Magazine, July, 1882), noting their rope-duel, the counterpart of the Scandinavian *beltespannare*. Ensign Hanus's report of his peace mission of 1880 is a valuable ethnological contribution, and is reprinted in the census report of 1890. The Drs. Krause came from Berlin to study them as finest and least corrupted of Tlingit tribes, and their "*Die Thlinket Indianer*" is the most valuable publication of its kind. Lieutenant Emmons learned much of them before their decadence, and as proof of their friendship was permitted to buy Kloh-Kutz's ancestral *narkheen* or dance-blanket after the chief's death.

The Chilkats long knew the art of forging copper, and many fine specimens of jade have been obtained from them. They were great hunters as well as traders, and bear and mountain-goat were their especial game. The latter, the "wool-bearing antelope" is found throughout their country, and they have the credit of first wearing the elaborate *narkheen*, or dance-robes, known as Chilkat blankets, but made by Haidas and Tsimsians as well. They wore them a century ago, but few are made to-day, reduced size, coarse weaving, and traders' dyed yarns rendering the modern ones poor imitations of the originals. The old blankets, over 2 yards in width, 1 yard deep, with a yard-long fringe bordering three sides, were woven of finely spun goat-wool on a warp of fine cedar threads suspended from an upright loom and tautened by weights. The designs were combinations of totemic figures, rigidly conventionalized and balanced, that recorded the legends of the wearer's family. The claws and the inverted eyes found on nearly all blankets are those of Hutli, or Hah-tla, the thunder-bird; the full face is the bear and the whale's profile easily recognized. Each piece and part of the design is woven separately, as in Japanese tapestry, connected by occasional brides, and the even satin stitch over and beneath every two threads gives a smooth, fine surface. Black, white, yellow, and a soft greenish-blue are the colours employed, and in a particularly fine blanket belonging to a Nass River chief, a rich dull red was employed with fine effect. The black is made from soot, charcoal, or lignite; the yellow from *sek' hone*, a sea-weed found on the rocks; the greenish-blue from boiling copper and this sea-weed together; and the red from spruce-juice, berry-juice, and ochre.

To the Yukon River and Mining Camps.

Either the *Chilkat* or the *Chilkoot Inlet* leads to passes over the continental range, by which the head-waters of the Yukon River may be reached. The Drs. Krause, Dr. Everette, U. S. A., and Mr. E. J.

Glave have explored the head-waters of the Chilkat and Alsekh Rivers. Mr. Glave descended the Alsekh to Dry Bay on the ocean-coast one season, and in 1891 took pack-horses over the Chilkat, and proved the feasibility of a pack-trail to the Yukon and the existence of suitable pastures for such animals. His "Pioneer Pack-horses in Alaska," Century Magazine, September, 1892, describes the regions traversed.

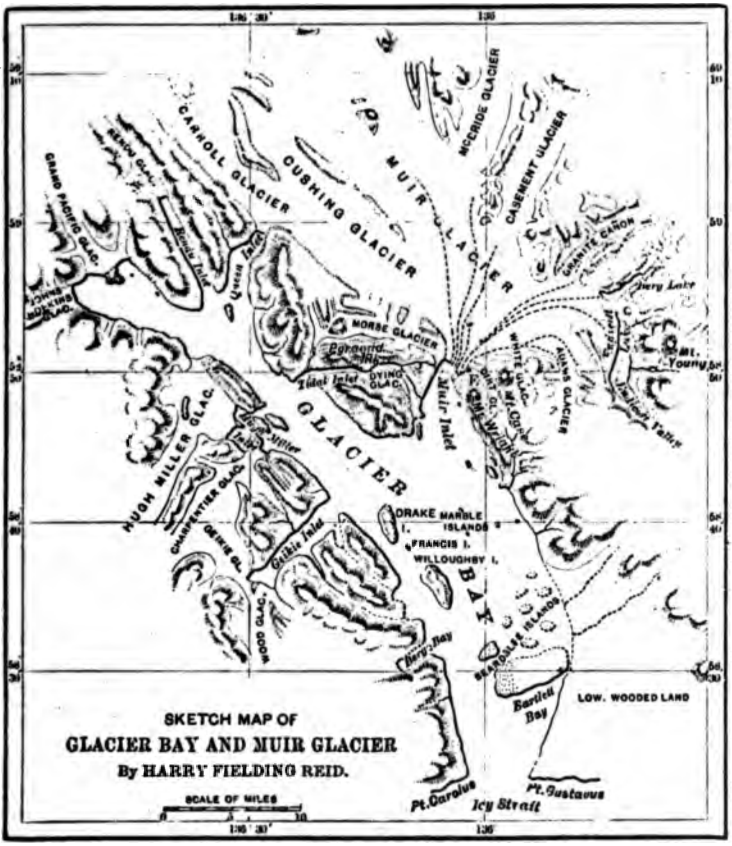
The Chilkoot Trail, used by miners since 1880, begins at Haleys, 26 miles from Chilkat Cannery; in 12 miles it ascends to the pass, and in 11 miles more, or 23 miles in all, drops to Lake Linderman in the bush country, beyond the range. There is a magnificent view over the lake country northward from the summit of the pass. This Shaseki Pass of the natives, Chilkoot of the miners, Perrier of Schwatka, and Taiya of Ogilvie, is variously estimated from 3,378 to 4,100 ft. above the sea. The *Lewis* River flows from the chain of lakes, and at Fort Selkirk, 357 miles from Lake Linderman, unites with the *Pelly*, and forms the **Yukon**, which flows thence 2,000 miles to Bering Sea, the third river in size in North America.

At the junction of the Porcupine River the Yukon touches the Arctic Circle, the true "Land of the Midnight Sun."

The mining camps on *Forty-mile Creek* and the *Tenana* receive accessions from Juneau each spring, and over 300 miners remain in camp each winter. The following is the table of distances from Juneau to the Yukon mines:

	MILES.		MILES.
To Haines Mission	80	To Head of canon	225
" Head of canoe navigation	106	" Head of White House Rapids	228
" Summit of Chilkoot Pass	115	" Takheena River	240
" Lake Linderman	124	" Head of Lake Le Barge	256
" Head of Lake Bennett	129	" Foot of Lake Le Barge	287
" Boundary line	139	" Hootolinqua	320
" Foot of Lake Bennett	155	" Cassiar Bar	347
" Foot of Caribou Crossing	158	" Little Salmon River	390
" Foot of Taku Lake	175	" Five Fingers	451
" Takish House	179	" Pelly River	510
" Head of Mud Lake	180	" Stewart River	630
" Foot of Lake Marsh	200	" Forty-mile	750

Small steamers have ascended to the foot of *White Horse Rapids*. The Alaska Commercial Company, of San Francisco, chiefly controls the fur-trade within United States lines from its ocean post at *St. Michael's*. The miners have their own river-boat connecting with an annual supply ship from Seattle to St. Michael's. The country is almost destitute of game, forest fires started by miners having driven animals back from the river; and the herds of moose and reindeer were rapidly exterminated after 1867, when the natives first obtained good rifles and fired at everything from pure wantonness. The river tribes are of Athabascan stock, poor and degraded. There are Roman Catholic missions at *Kosoriffsky* and *Nulato*, and an Episcopal mission at *Anvik*. King salmon 5 and 6 ft. in length, and weighing as much as 120 pounds, are reported as crowding the Yukon; red salmon


SKETCH MAP OF
GLACIER BAY AND MUIR GLACIER
By HARRY FIELDING REID.
SCALE OF MILES
MUIR GLACIER
MCBRIDE GLACIER
CASEMENT GLACIER
GRANITE CAÑON
CARROLL GLACIER
CUSHING GLACIER
GRAND PACIFIC GLAC.
Reid Inlet
Queen Inlet
MORSE GLACIER
Tidal Inlet
DYING GLAC.
Muir Inlet
WHITE GLAC.
ADAMS GLACIER
Mt. Young
GLACIER
BAY
HUGH MILLER GLAC.
CHARPENTIER GLAC.
GEIKIE GL.
Geikie Inlet
WOOD GLAC.
DRAKE I.
MARBLE ISLANDS
FRANCIS I.
WILLOUGHBY I.
BEARDSLEE ISLANDS
Bartlett Bay
LOW. WOODED LAND
Pt. Carolus
Icy Strait
Pt. Gustavus

attain great size, and wild fowl gather on the flats in incredible numbers.

The head-waters of the Yukon were first discovered by H. B. Co. men in 1840. The W. U. T. Survey explored the region in 1865, and Dr. W. H. Dall and Frederick Whymper, who wintered there, have fully described it in their works. Captain Raymond, U. S. A., made a military reconnoissance in 1867, when he obliged the H. B. Co. to remove to British territory. A pioneer prospecting party crossed the Chilkoot Pass in 1880, and miners have gone in increasing numbers each season since. Lieutenant Schwatka crossed the Chilkoot and rafted his way to the sea in 1883. In 1889 the U. S. Coast and Geodetic Survey despatched the Turner and McGrath parties to definitely determine the line of the 141st meridian, the International Boundary Line. They placed their monument a little W. of the mouth of Forty-mile Creek, and 13 miles farther E. than the Canadian monument erected by William Ogilvie in 1887.

Glacier Bay.

Captain Beardslee's **Glacier Bay**, the *Sitth-gha-ee*, or "great cold lake" of the Hoonahs, indents the northern shore of **Icy Strait**, extending over 50 miles from N. W. to S. E., and is from 5 to 10 miles wide. There are strong currents in the strait and the line of a terminal moraine forms a bar off the bay's mouth. Steamers often anchor for the night in *Excursion Inlet*, a few miles E. of the entrance, or at *Bartlett's Bay*, just within *Point Gustavus*. The cannery established at the latter place in 1883 was closed for many seasons, but there is a Hoonah salmon camp on the beach each summer. There is another summer fishing camp in *Berg Bay*, 10 miles above *Point Carolus*, on the W. shore. The natives only visit the upper reaches in search of the hair-seal, which delight to ride around on the ice-cakes. Bears are abundant in the forested regions, and have exterminated the deer, as in the Chilkat country, and the big white mountain-goat is found on all the heights. No salmon are found beyond the islands.

DISCOVERY AND EXPLORATION OF GLACIER BAY.

Vancouver's ships were anchored at *Port Althorp*, on the N. W. shore of Chichagoff Island, while Whidbey and Lemesurieur explored the region. They camped at Point Carolus, and reported that to the N. and E. of that point "the shores of the continent form two large open bays which were terminated [July 12, 1794] by compact, solid mountains of ice rising perpendicularly from the water's edge, and bounded to the N. by a continuation of the united, lofty, frozen mountains that extend eastward from Mt. Fairweather. In these bays also were great

quantities of broken ice, which, having been put in motion by the springing up of a northerly wind, were drifted to the southward."

The "frozen mountains," as he termed glaciers, were uncomprehended then, and his scarcely indented coast-line was retained in Tebenkoff's later charts. The Russian traders named Icy Strait, and, dreading its currents and icebergs, kept close to the S. shore, and never knew the bay.

In 1869, Kloh-Kutz told Prof. Davidson of a great bay full of glaciers lying 30 miles to westward of the Davidon Glacier, one day's journey on snow-shoes. In 1877 Lieutenant C. E. S. Wood, while seal and goat hunting after the forced abandonment of Mr. Charles Taylor's plan to climb Mt. St. Elias, canoed about this "great bay 20 miles S. E. of Mt. Fairweather," and crossed by the Muir Glacier to Chilkat.* In October, 1879, the glaciers were really discovered and made known to the world by John Muir, the California geologist, who had before that discovered the residual glaciers of the Sierras. He canoed its length with the Rev. Hall Young, and spent a few days † near the Pacific Glacier, and lectured that winter about "the Fairweather glaciers." In July, 1880, Mr. Muir returned alone and spent several weeks exploring and enjoying the glacier afterward named in his honour. Later in July, Captain L. A. Beardslee, U. S. N., entered the bay in the trading steamer *Favourite*, accompanied by Cozian, the famous Russian pilot, who had never heard of the bay before, and by Dick Willoughby, who was living in a Hoonah village in Cross Sound. Captain Beardslee went as far as Willoughby Island, when fog shut down and the owner of the chartered steamer insisted on returning. He charted the lower part of the bay, and by dint of persistent argument had the name of Glacier Bay accepted by the Coast Survey. He gave a tracing of his chart to Captain James Carroll, who took the mail steamer *Idaho* up the bay in July, 1883, found the glacier John Muir had described, and named both inlet and ice-stream for him.

Tourists have been taken to **Muir Glacier** by that same course every summer, and the next discoveries in the bay were made by Captain Carroll in August, 1892, when he took the *Queen* to the front of the **Pacific Glacier**, and found the picturesque and unsuspected **Johns Hopkins, Rendu,** and **Carroll Glaciers** as named by Prof. Reid. The Coast Survey has not yet (1893) charted the bay.

INDIAN TRADITIONS.

The Hoonahs could not tell anything of the glacier that the scored hillsides, the windrows of old terminal moraines, whether as islands or shoals, did not more plainly declare. They feared and kept away from the region fraught with terrors and dangers, and only seal and goat hunters ventured near. They say that in their "fathers' time"—an indeterminate period, as often 50 as 250 years before—the ice

* See Century Magazine, July, 1882.
† See N. P. folder Alaska, by John Muir.

reached to Bartlett's Bay. About 1860 it was in line with Willoughby Island. "Long, long ago" the glacier advanced and swept away Klemshawshiki, "the city on the sand at the base of the mountains," where the Beardslee Islands now rise. "It came down in a day and it did not go away in ten years," they say, telling how the ice floods descended, plowed up their fields, destroyed their houses, as the Gorner glacier once devastated its valley. Again, a great wave rushed in from the ocean, swept away the village near Bartlett Bay, mowed down the forests with icebergs, and left no living thing. They remember, too, that a glacier once crept down and dammed up their best salmon stream. Two slaves were offered up, and Sitth-too-Yehk relented, the barrier melted, and the *tyee* gaily leaped again.

SCIENTISTS' CAMPS.

In 1886, Prof. G. Frederick Wright, of Oberlin, Ohio, Rev. J. L. Patton, of Greenville, Mich., and Mr. Prentiss Baldwin, of Cleveland, camped for a month on the E. moraine, two miles below the ice front. By observations made on pinnacles of ice fixed in memory, Prof. Wright figured an advance of 70 ft. a day, and included the results of his studies in the first chapters of The Ice Age in North America (D. Appleton & Co., New York).

In 1890, John Muir camped for three months on the east moraine, joined by Prof. Henry Fielding Reid, of the Case School of Applied Sciences, Cleveland, Ohio, who had associated with him Messrs. H. P. Cushing, H. M. McBride, R. L. Casement, C. A. Adams, and J. F. Morse. They built a substantial cabin a half mile below the ice wall with a noble chimney of glacier-cut stones cemented with glacier mud, and from this home station explored every part and arm of the glacier. They mapped the glacial region by plane table from the higher stations.*

Prof. Reid measured his base-line on the west moraine and triangulated the heights of his stations; a line of red and black flags was set across the living stream, and daily observations taken from station E on the ridge of Mt. Wight and from K on the opposite spur, 3 miles apart. The result of this careful work reduced the glacier's pace to 7, 8, and 10 ft. a day in mid-stream.† The little company were a board of geographic names and aptly baptized the landmarks found on the map, and their work is accepted as final and exact by all scientists and specialists.

In 1891 a pleasure party of seven, including the artist, T. J. Richardson, Mr. C. S. Johnson, a hunter of big game, two ladies, a maid

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* See "Studies of Muir Glacier in Alaska," by Henry Fielding Reid, National Geographic Magazine, March, 1892. "Notes on the Muir Glacier," by H. P. Cushing, American Geologist, October, 1891, and March, 1893.

† The Mer de Glace advances 33 inches a day, the Aletsch 19 inches, the Svartesen 12 inches, and the Selkirk Glacier 12 inches.

and small boy, made the cabin a summer home. In 1892 Prof. Reid devoted another season to mapping, exploring, and studying ice movement.

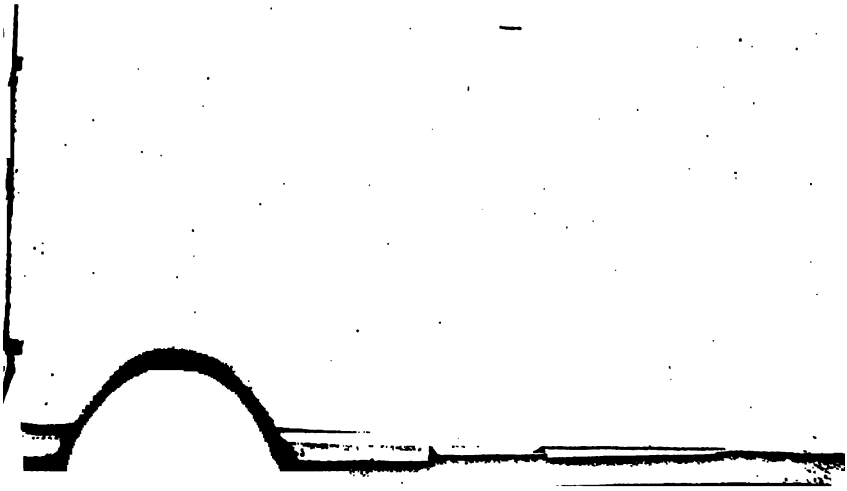
Itinerary of the Bay and Inlet.

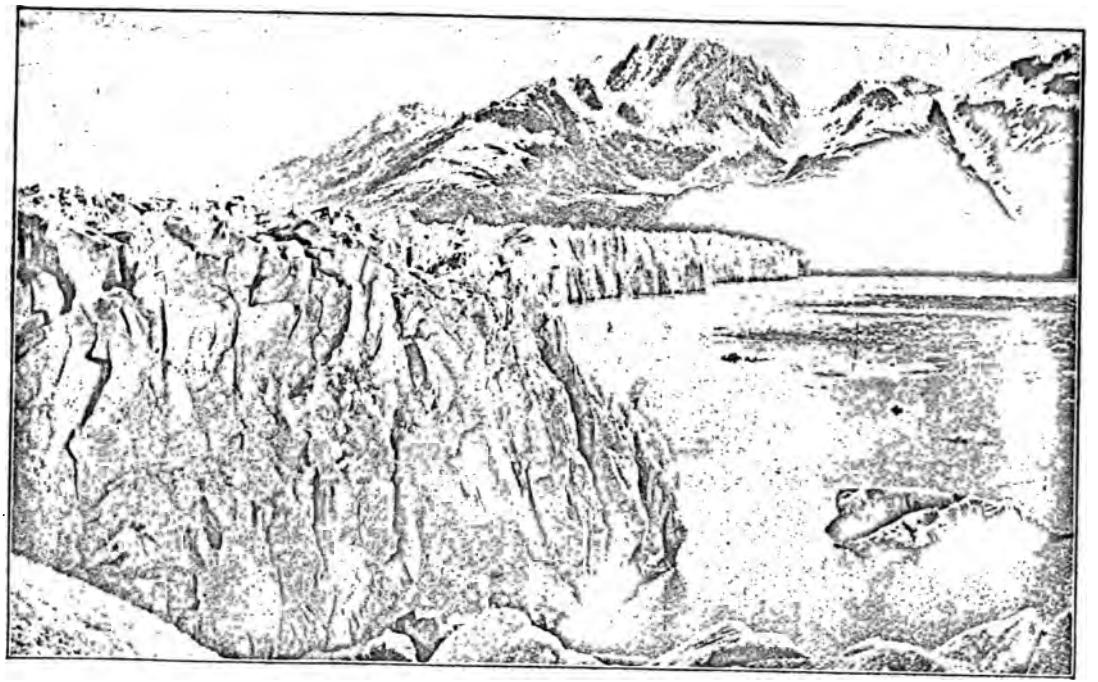
The shores of **Glacier Bay** are densely forested for 20 miles above the entrance. The *Beardslee Islands*, crests of so many terminal moraines are low, green gardens that successively illustrate the stages of afforestation. *Willoughby Island*, a solid limestone mass 3½ miles long, from a half to three-quarters of a mile wide, and 1,500 ft. high, named for the old Alaska prospector, marks the gateway to the glacial region. **Francis Island**, named for the Government pilot, and the site of palæozoic fossil remains, lies N. W. of Willoughby Island, close to the same western shore. **Geikie Inlet**, which opens from the W. shore just above Francis Island, holds the *Geikie* and the *Wood* (Lieut. C. E. S.) *Glaciers* at the end of its long rock cutting.

Mt. La Pérouse, 11,300 ft., *Mt. Crillon*, 15,900, and **Mt. Fairweather**, 15,500 ft., are visible from the entrance of the bay, and the snows of the Crillon and Fairweather summits feed the great glaciers that slope from their heights to the bay. Mt. Fairweather shows the same summit outline as *Mt. Rainier* and *Mt. St. Elias*, and this triple-crowned peak, the sharply cut *Gable Mountain* and the attendant white host, with every foot of their elevation from sea-level to summit visible, complete one of the sublimest mountain views in the world. Of the great glaciers pouring to the upper bay, the Geikie, the Hugh Miller, and the Pacific were named by their first visitor, John Muir, and the Wood, the Charpentier, the Johns Hopkins, the Rendu, and the Carroll Glaciers by Prof. Reid. This end of the bay is usually so blocked by ice that canoes rarely, and only one steamer, have navigated it. There is a large bay on the E. shore, below the mouth of Muir Inlet. *The last forest* may be noted at this point, a moss-hung, dark, mysterious place, among whose venerable spruces John Muir found his richest botanical field.

Muir Inlet and the Great Muir Glacier.

Muir Inlet, 5 miles long and 1½ to 3 miles wide, opens on the E. shore 20 miles above Bartlett Bay. It stretches due N. and S., the Muir Glacier walling the end with a line of ice-cliffs 9,200 ft. or 1¾ mile in length, rising 100 and 250 ft. from the water, and extending,





Front of Muir Glacier and Mt. Case, from West Moraine.

it is believed, some 900 ft. below the surface of the sea in a long, plough-shaped forefoot. The vast ice plain slopes back at a grade of 100 ft. to the mile to the mountains, 10 and 13 miles distant from the inlet. The Muir Glacier, 58° 50′ N., and 136° 5′ W., drains an area of 800 square miles. The actual ice surface covers about 350 square miles, the mass of it 35 miles long and 10 to 15 miles wide, lying but a few hundred feet above sea-level. It is fed by 26 tributary streams, 7 of which are over a mile in width. If all their affluents were named and counted, as in Switzerland, the Muir might boast 200 branches or glaciers in its system. The mountain gateway, 2½ miles wide, through which it pours to the sea, is formed by spurs of **Mt. Case** (5,510 ft.) and **Mt. Wright** (4,944 ft.) on the E., and a spur of the sharply cut Pyramid Peak on the W. All the mountains immediately surrounding the glacier average from 4,000 to 6,000 ft. in height. The main stream of the Muir flows from the N. W., rising in *nevés* 40 miles distant. The main current of this magnificently crevassed and broken ice pours through the great plain at a rate of 8 to 10 ft. a day. All efforts to cross it within 10 miles back from the water front have failed." *

Seven medial moraines stretch away in dark fan-rib lines from the front, rising in terraces on the ice and indicating the course and source of chief tributaries. Lateral moraines extend in crumbling bluffs and gravel terraces for 3 miles down either side of the inlet.

Ships do not approach the ice wall nearer than an eighth of a mile, because of the masses of ice falling from its face with terrific noise and agitation of the water, and of submarine bergs detached from the sunken forefoot and rising to the surface with tremendous force. Soundings of 86 and 120 fathoms have been made within 100 yards of

* Of the Norwegian glaciers, which may be most fairly used for comparison with the Muir, the Jostedalbrae, the largest glacier in Europe, lies 3° N. of the Muir, at an elevation of 3,000 ft. above the sea, and covers 470 square miles. It is an ice-cap on the top of a range, with five arms flowing down and one reaching within 150 ft. of sea-level. The *Svartisen*, the show glacier of the Norway coast, 8° N. of the Muir, and on the line of the Arctic Circle, is an ice mantle 44 miles long and 12 to 25 miles wide, occupying a plateau 4,000 ft. above the sea. The arm in Melö, visited by North Cape tourists, does not reach tide-water. The Swiss glaciers, all lying from 4,000 and 6,000 ft. above the sea are like those of Mt. Rainier, and in no way to be compared to the Muir, 20 of whose arms each exceed the Mer de Glace in size.

the ice wall. Every break reveals surfaces of intensest clear blue ice, which quickly weathers to opaque whiteness and coarse granular snow. The enormous pressure condenses the original snow-flakes to this clear, transparent ice, which is often umber and darkest green with morainal matter. Bergs 200 ft. in length, 50 and 70 ft. high, only one seventh of a berg being visible, are often seen near the front, but break apart and grind together as they sail down the bay, and avalanches of loose particles cover the bay with "mush ice" for miles.*

Steamers usually anchor one fourth of a mile below the E. end of the ice wall. P. C. S. S. Co.'s ships usually remain six or eight hours, taking advantage of the tide in entering and leaving the bay when possible and landing their passengers. Vessels of British register cannot land passengers, owing to U. S. customs regulations. A well-built trail and board walk lead over the bluff and the quicksands of glacial mud in the moraine to the surface of the ice, which is there a rolling white prairie, over which a regiment of cavalry might deploy, and where future tourists will travel on sleds, or even horses. There are no dangers to require the ice-axe, rope, creepers, or extraordinary costumes, unless the traveller goes out of his way and seeks them in the crevassed regions of mid-stream. Rubber shoes are a necessity, but are quickly cut by the sharp ice crystals.

The **Dirt Glacier**, filling the cañon between Mt. Case and Mt. Wright, is a treacherous place full of sink-holes and quicksands of glacier mud, where boulders reel and sink beneath one, and the fine "mineral paste and mountain meal" make a sticky, slippery compound that hardens like cement. It is worth walking far out on the ice to see the splendid **White Glacier**, 4 miles long and a half mile wide, sweeping from the E. side of Mt. Case with a black serpent of a medial moraine curving down its dazzling slope. The eastern arm has almost no motion, and melting 10 ft. of its surface each year is fast uncovering *nunatake*, or islands in the ice.

The granite knobs peeping through the ice abreast of Mt. Case, 3 miles from the beach, are known as the "*Dumplings*"; the red granite *nunatak*, a mile beyond, at the edge of the swift-moving crevassed ice, is the tourist's "*Mouse*," 800 ft. in height. The "*Rat*," 4 miles across, on the opposite bank of the raging ice torrent, is 1,855 ft. Both are easily climbed by crevices or cañons in their sides and command mag-

* Captain C. L. Hooper notes that in the Pacific arctic, off the Siberian and Alaska coast, 20 ft. is the average of the highest ice met.

nificent views of the glacier, its branches, the surrounding mountains, and the inlet. The Mouse is easily reached on steamer days by good walkers, who, keeping well to the right until past the Dirt Glacier, may follow an air-line to its base without having to turn aside for a crevasse. There are lakes, blooming epilobium, and tattered driftwood in its recesses. The whole surface is brilliantly polished, and avalanches of pebbles are frequent. A cairn on the highest point is Prof. Reid's flag station H, and cards of climbers will be found in tins and bottles. A field glass will show the ancient spruce-trees growing on *Tree Mount*, 2,700 ft., and 9 miles due E., a "Foret," corresponding to the "Jardin" of the Mer de Glace. The triple-crowned *Mt. Young* is 16 miles distant, and on its other side are the feeders of the Davidson Glacier in Lynn Canal. *Endicott Lake* at its base, and *Bery Lake* N. of it, are miniatures of the glacier's inlet front, replicas of the Margellen Zee in the Aletsch Glacier which moved Prof. Tyndall to such raptures. These lakes are not seen from the Mouse, but a glass shows the *Girdled Glacier*. The extraordinary moraine with two ends and no present beginning runs from the Mouse to the brink of the ice-cliffs on *Bery Lake*, a glacial phenomenon discovered by Prof. Reid. *Snow Dome*, *Red Mt.*, *Black Mt.*, and *Gable Mt.*, are easily identified on the N., and magnificent ice falls, chains of *nunataks* and eddies over uncovering islands, may be studied, while at one's feet is the broken, tempestuous ice-stream, so evidently in action that one listens for its roar and to see the great ice waves comb over and scatter their spray. The silence is profound, and the north wind that blows perpetually with the current of the ice-stream makes no sound.

The **Morse, Cushing, McBride, Casement, and Adams Glaciers** were named by Prof. Reid as a deserved recognition of the excellent work of those members of his staff of 1890 in exploring these main tributaries of the Muir.

The Lateral Moraines.

It is an easy walk up the east beach to the base of the ice-cliffs whose wings override the gravel-bed of an older moraine, and hold many spruce and alder twigs. As falling bergs send great waves across the inlet, it is a little dangerous to follow the beach at high tide. Six Hoonah hunters were swept from the narrow footway by a berg wave a few seasons since, and incautious visitors have many times been drenched knee-deep. There are quicksands at the water's edge, and

the crumbling bluffs and melting ice-cliffs launch tons of sand, boulders and ice-blocks without warning. A roaring torrent emerges from an ice cañon at the end of the beach and prevents (1891–'92–'93) access to caves at the base of the ice wall as formerly. Many subglacial streams boil up at the base of these cliffs, and these fierce torrents fill the air with a steady undertone like the boom of the Yosemite Fall. The tide-fall of 15 ft. leaves a dark-blue base-line by which one may estimate the heights above.

A considerable stream, the *East River*, drains the extreme flank of the glacier, and reaches the inlet a half mile below the ice. On its farther bank there is a large flat covered with driftwood, mainly spruce, and in hollows in the gravel terraces there are the stumps of large spruce-trees, whose fringed fibres tell of an oversweeping ice sheet. Streams are uncovering other buried spruce groves, and one such is disclosed on the beach below high-tide mark. Shrimps, shells of spider crabs, and sea-weed are found on this beach. The whole perpendicular front of Mt. Wright is scored and grooved to a height of 2,000 ft., which, with the spruce and alder stumps found in the older moraine beneath the ice-wings, prove that the glacier has advanced and receded in times past with different climatic conditions. The whole glacial basin was possibly once a forest, and salmon streams frolicked in all the tributary cañons. At another time there was one vast sea of ice over all the region, and the battlemented summit of Mt. Wright was but a *nunatak*.

On the *West Moraine* the draining stream is much larger, and a tributary has uncovered a buried spruce forest whose stumps are 10 and 15 ft. in height. The rounded arch of the tunnel from which the stream flowed in 1883 has fallen in, and it is a long and wearisome approach to the surface of the ice on that side.

THE RATE OF RECESSION.

Rain weathers and breaks away the ice most rapidly, and during a close watch maintained by the writer in July and August, 1891, it did not seem that the stages of the tide had any connection with the fall of ice. On many warm, clear days, when a hot sun fell upon the ice front for 16 and 18 hours continuously, there was no sound. After days of silence came tremendous displays, one quarter and one third of the long wall falling away at once. These falls often occurred in the middle of the night and frequently at daybreak, contraction in the colder hours seeming to free most bergs.

By photographic evidence the glacier receded more than 1,000 yards

between Prof. Wright's visit of 1886 and Prof. Reid's first camp in 1890. Photographs taken by the writer in 1891 showed a retreat of 300 yards in the next year. Prof. Muir recognized a retreat of a mile between his visits of 1880 and 1890, and the writer was as much bewildered by the marked changes occurring between 1883 and 1890.

The Ascent of Mt. Wright, to the Hanging Gardens and Mountain-Goat Pastures.

By crossing the East River, following the tributary stream that descends the steep ravine on the right, and climbing by the boulder-filled crevices on its north wall the tourist may reach the long spur of **Mt. Wright**. Professor Reid's cairn and flag *Station E*, at the brink overlooking the glacier's front wall, command a magnificent view. Station E may be reached in two and a half hours from the landing, when the bridge near the cabin allows East River to be crossed at that point. An easy slope through knee-deep lupin-beds, over acres of bryanthus, buttercups, forget-me-nots, violets, blue-bells, gentians, geums, asters, and golden-rod leads from Station E to a 3,000-foot terrace extending south a couple of miles and commanding views of all the inlet and lower bay, out to the Chichagoff shore. This region is the favourite pasture of mountain-goats; hoof-marks and tufts of wool are seen all the way, ptarmigan run beside one, and marmots whistle on every side. During the weeks the writer spent at Muir Glacier in 1891, the hunters kept the camp larder well supplied from this lofty game preserve. The view from this second terrace (3,000 ft.), Flag Station V, is best in the early morning, when *Mts. Crillon*, *La Pérouse*, and *Fairweather* are clearly cut on the western sky. The Fairweather group hides any view of Mt. St. Elias, 100 miles distant. Station E commands the finest view of **Mt. Case's** dark, red-purple, limestone mass, its velvety patches of vegetation and its jewelled glacier gleaming high on its shoulder.

By photographs taken from Station E, in 1890–'91–'92, Professor Reid has been able to note very closely the rate of recession. Tourists sufficiently interested in glacial phenomena to climb to that outlook with cameras may assist this study by forwarding such pictures, with dates attached, to Professor H. F. Reid, care of Secretary of National Geographic Society, Washington, D. C. Photographs from V, from M, on the beach close to Muir's cabin, and from A B on the bluff S. of the mouth of West River on the west side of the Inlet, will also assist in the record.

Auroras, Mirage, and the Phantom City.—Brilliant auroral displays

are often witnessed in August, and mirages frequently appear. By refraction the ice-floes are often magnified into ice-cliffs 1,000 ft. high, apparently barring a ship's retreat southward. The so-called Phantom or Silent City was a hoax of Dick Willoughby's in 1889. Thousands of prints from a cloudy negative of Bristol, England, were sold, upon his statement that he had seen and photographed the city from Glacier Bay.

Amateur photographers will find it almost impossible to secure a sharp negative of a mirage. The lines of glimmering ice-cliffs leave no definition or shadow, waver and fade quickly. The reflected light from these glaciers and snow-fields misleads even professional photographers to over-expose their negatives. The smaller stops in a lens are often sufficient for an instantaneous exposure, and such exposures may be successfully made with ordinary stops on cloudy days. In weak sunlight the lens should be stopped down, and in the developing-room the bromide should be in hand.

On the Mainland Shore of Cross Sound.

Dundas Bay and *Taylor Bay*, W. of Glacier Bay, contain tide-water glaciers and are favourite sealing-grounds of the natives, who bitterly resented the incursion of Tsimsian seal-poachers in 1880. The Tsimsians were driven off, but threatened to return with 90 canoes and exterminate the Hoonahs. By the intervention of Captain Beardslee, U. S. N., and Dr. Powell, Indian Commissioner for British Columbia, an impending war of all the coast tribes was averted, and the Tsimsians were threatened with severe punishment if any more poaching should be reported. The glacier in Taylor Bay was visited by Mr. Charles Taylor and Lieutenant C. E. S. Wood in 1877, and explored by John Muir in 1880. Its front and slope are seen at long range from ships passing through Cross Sound.

The Chichagoff Island Shores.

Chichagoff Island, named for the Russian navigator who first attempted to find a Northeast Passage from the Atlantic to the Pacific, is least known of the greater islands of the archipelago. It is about 70 miles long, with an average breadth of 40 miles. *Cross Sound*, leading in from the ocean on the N., was named by Captain Cook on Holy Cross Day, May 3, 1778. *Port Althorp*, within its entrance, was Vancouver's anchorage for several weeks in 1793. **Idaho Inlet**, E. of

Port Althorp, was discovered by Captain James Carroll, July, 1883, upon Dick Willoughby's assurance that it was a broad forty-fathom channel leading to the open ocean N. of Salisbury Sound, frequently traversed by himself. The *Idaho* ran aground a few miles from the entrance in waters alive with salmon and flounders, between shores where deer wandered in plain sight, and many bear-tracks could be seen. A saltery built in 1884 was closed after a few years.

The Hoonahs (*Hoon*, "the north wind," and *ish*, "lake"), inhabiting Chichagoff Island and the shores of Icy Strait, have been longest preserved from contact with white civilization. They have had a bad name from earliest times. In 1862 they seized the H. B. Co.'s ship *Labouchère* at Swanson's Harbour, imprisoned the captain and crew, and looted the vessel completely. It was not the H. B. Co.'s policy to retaliate and injure the fur-trade, and they passed by Hoonah anchorages for several seasons. Ambassadors besought the resumption of trade, and when the "fire canoe" came again the whole tribe joined in the water parade, the songs and dances of peace, filled the air with the eagle down of peace, and carpeted the deck with potlatch otter-skins. In 1867 the chief in his war-canoes met the U. S. revenue cutter *Lincoln*, but was not allowed on board. "You come Icy Strait. Me give you big fight!" the chief bawled in Chinook as he left.

The Hoonahs numbered about 1,000 in 1869. In 1880 there were 908 enumerated, and in 1890 only 590. Their chief village of *Komtokton* in Port Frederick, has been known as Hoonah P. O. since the mission and Government day school was established. It numbered 438 inhabitants in 1890. The smaller village of Klookukhoo has but 15 inhabitants. Lieutenant C. E. S. Wood, in the Century Magazine, July, 1882, and Captain Beardslee, in his Forest and Stream letters of 1878–'79, have given interesting descriptions of Komtoktón, the Hoonahs, and their legends.

The finest *halibut grounds* in the archipelago are those off Point Adolphus.

As soon as the ice breaks, in March, a hundred canoes are seen fishing among the floes. Captain Beardslee and one other angler caught 47 halibut averaging 40 pounds each in one hour in July, after the regular halibut season. One Hoonah managed the canoe, clubbed and gaffed the fish, caught with salmon bait and native tackle. Tlingit halibut hooks, lines, and clubs are most ingeniously and often richly decorated. The lines are made of the giant kelp (*nereocystis*), which often grows to a length of 300 ft. in tide-swept channels. It is soaked and bleached in fresh water, and then stretched, dried, smoked, and worked until it is as firm as leather but pliable as silk. The foot-long hook is cut from the heart of spruce or cedar roots—

for the halibut can detect the taste of resin—and this hook as well as the club are carved with the owner's totem and other significant devices bound to ensure the fisherman's luck. With such tackle, a lone fisherman can haul up and quiet even a 200-pounder; but chicken halibut, weighing 30 or 40 pounds, are the choice, and 70-pounders the average.

There is a canoe portage from Port Frederick to the *Tenakee Passage*, leading into Chatham Strait. There are hot sulphur springs on the passage, long resorted to by the natives, and a chosen winter campground of miners. There are also hot sulphur springs on the W. coast of Chichagoff, between Cape Edward and Lisianski Strait, strong sulphur water bubbling up in natural rock pools on the beach.

From Chatham Strait to the Ocean by Peril or Pogibshi Straits.

Peril Straits, the Tlingits' *Koo-le-tchika* (a dangerous channel), 40 miles in length, bend in a great bow from Chatham Strait to Salisbury Sound, separating Chichagoff and Baranof Islands. It is a famous landscape reach, and at the two narrows there are strong tidal rapids.

The east half of the straits is a broad, smooth water-way for 18 miles, narrowing beyond the opening of *Hoonah Sound* on the north shore. **Deadman's Reach** is the smooth stretch on the Baranof side before reaching *Povorotnoi* (Turnabout) *Island*, a symmetrical green island that blocks the pass. On one side of it is the true *Pogibshi*, or *Peril Point*, and opposite is the *Poison*, or *Pernicious Cove*, where one hundred of Baranof's Aleut hunters were killed by eating poisonous mussels in 1799. For this reason the Russians as often called them *Pagoobnoy*, or Pernicious Straits. For the next 3 miles the half-mile-wide channel is swept by strong tidal currents, the tides from Chatham Strait and the open ocean meeting at these **First** or **Northern Rapids**. A half hour of slack water intervenes between the hours when the tides race at eight and ten knots an hour, and vessels are timed to pass within that limit of safety.

The straits widen beyond the Rapids, and inlets open magnificent vistas from the main cañon, whose steep shores are densely forested from tide-line to the snow-line of the mountains. At the **Second** or **Southern Rapids**, 12 miles beyond, the channel "at its narrowest part is scarce 100 yards in width, and is rendered very dangerous by the sunken rocks over which the tide rushes in its strength with the

sound of a roaring cataract, the current often running more than ten knots an hour. . . . For 8 miles the navigation is the most dangerous of any in southeastern Alaska, except Kootznahoo Inlet, owing to the strong tide and the sunken rocks that obstruct this passage."

Baranof traversed these straits in 1804, and Langsdorff wrote an account of his exciting run with the tide in 1805. These straits were surveyed and buoyed by Captain Coghlan in 1884, and since then there have not been any such disasters as befel the U. S. S. *Wayanda* and the mail steamer *Eureka*. Tourists going through at high-water slack, when the current boils slowly, do not see nor hear the bore 4 ft. high rushing by, eddies sucking down, waves boiling up, spar-buoys borne under, and kelp snapping in the current, as at the turn of the tides.

Salisbury Sound was named for Portlock's friend, the noble Marquis of Salisbury, in 1787. The Spaniard Galiano anchored there, in the Puerto de los Remedios, in 1775. Captain Cook called it the Bay of Islands in 1778, and the Russians named it Klokacheff Strait. The peak of Mt. St. Elias has been seen from its mouth. St. John the Baptist Bay, at its eastern end, holds beaches and bluffs of marble and a vein of lignite discovered by Professor Blake in 1867.

Neva Strait, leading from Salisbury to Sitka Sound, was little used in Russian days because of the sunken rocks and ledges in **Whitestone Narrows**, and vessels went around Kruzoff Island to avoid them. Surveys have made the course plain and safe, but as it can only be run at a certain stage of the tide by large steamers, a few hours' anchorage is sometimes enforced.

Nakwasina Passage surrounds Halleck Island, and is a great resort of winter sportsmen. It was recommended as a site of a new military post to which the garrison of Sitka should be removed. *Qvassinsky*, "the place where qvass was brewed," is the local name for the level meadows and the hay ranch maintained by the Russian Company, and occupied since 1867 by American settlers. *Beehive Island* is an unmistakable landmark at the southern entrance of Nakwasina.

The entrance to **Katliana Bay** is 2 miles S., and within it there is another hay ranch and a cabin resorted to by sportsmen for bear, deer, duck, geese, grouse, and swan shooting in the winter. This Katliansky camp is 3 miles in from the entrance, and there is a sharply cut pyramidal peak as landmark at the end of the valley.

The Bay of Starri Gavan, or **Old Sitka**, 2 miles below Katliana Bay, is the site of Baranof's first settlement, the Fort Archangel Gabriel established in 1799 and destroyed by the natives in 1802. It is 3 miles

N. of the present Sitka, on the E. shore of **Sitka Sound**, which is 14 miles long and from 6 to 7 miles broad, an island-studded expanse sheltered between the Kruzoff and Baranof shores.

Baranof Island and the Russian Settlements.

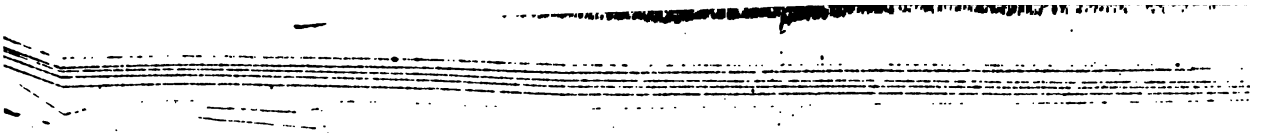
Lisianski, who first surveyed them, named Baranof, Chichagoff, Kruzoff, and Jacobi's Islands, and charted them in 1805 as the Sitka Islands. **Baranof**, best known of any island in the archipelago, is over 120 miles long and about 30 miles wide. All its shore-line has not been surveyed, the interior is unknown, and no one has yet (1893) crossed it. There is a cannery at Red Bay on the S. W. shore, but the only other settlements are in the immediate neighbourhood of Sitka.

The Russians reached the Pacific shores of Siberia in 1639, Vitus Bering, by commission of Peter the Great, discovered the strait separating Asia and America in 1728, and in 1741, at the behest of the Empress Anne, started to find Vasco da Gama's fabled land. His two ships separated in a storm and fog about latitude 46° N. Bering sailing N. E. reached Kayak Island on St. Elias Day, July 17, 1741, saw and named the great mountain, touched at the Shumagins, and was shipwrecked on the Comandorski Islands. The commander died, but the scurvy-stricken crew survived, reached Kamschatka with the pelts of the sea-otters on whose flesh they had lived, and stimulated traders to continued voyages in search of such furs. Tschirikow, reaching the coast near Sitka, sent a boat's crew in to reconnoitre the bay; at the end of six days sent a search party for them, and left after a three weeks' stay short of fourteen men and all their boats. The defiant behaviour of canoe-loads of natives that paddled out to the ship, the din on shore and columns of smoke, pointed to some savage sacrifice at the base of his Mt. St. Lazaria.

In 1783, Gregory Shelikoff, a rich Siberian merchant, established a post on Kadiak Island, and joined to him Alexander Baranof, a Russian merchant who had entered the Siberian trade and been ruined by the loss of his caravans. Baranof pushed the enterprise in every way, and in May, 1799, reached Sitka Sound and built a stockaded post 3 miles N. of the present town. An imperial charter with monopoly of the American possessions for twenty years had been obtained by Resanof, the son-in-law of Shelikoff, and a court councillor, and Baranof was made chief manager of the Russian American Fur Company, in which nine rival Siberian firms were consolidated and members of the imperial family were stockholders.

The fort at Sitka was destroyed in 1802, and all save a few Russians, who found refuge on a British trading-ship, were murdered. Baranof was absent at the time, but returned in August, 1804, with 800 Aleut and Chugach hunters. The natives fled at sight, and he

View from End of Sainoovar Hills.



went back through the archipelago destroying villages everywhere. The Sitkans entrenched themselves on Katlean's Rock, or the *Kekoor*—"a hill at the end of a peninsula"—and at the mouth of Indian River. Captain Lisiansky had arrived meanwhile with a man-of-war, and in two days captured the Kekoor, and four days later the river fort capitulated, the occupants fleeing in the night, however, killing dogs and strangling babes lest any sound betray them. By Baranof's advice Resanof went to Japan and vainly attempted to open trade to secure supplies for the new colony. Baranof contemplated building a fort on the Columbia, but through Resanof opened trade with the Spanish colonies in California. Resanof, whose wife had died, paid court to Donna Concepcion Arguello, daughter of the alcalde at San Francisco Bay; they were betrothed, and Resanof died in Siberia while on his way to Petersburg to obtain the Czar's consent to the marriage. Baranof was suspicious of John Jacob Astor's fort on the Columbia and his many ships, and distrusted the New York trader's offer of a permanent alliance of interests, which was cut short by the War of 1812.

Baranof established an agricultural colony at *Bodega Bay* in the redwood country north of San Francisco, and the mills and lands were tended until sold to General John A. Sutter for $30,000, a few years before the discovery of gold in California. An Hawaiian colony prospered for a time, and Baranof planned the annexation of those islands, but, after eighteen years of service, he was summarily deposed, his son-in-law, a young naval officer, took charge, and until 1864 the chief managers were naval officers, who filled five-year terms at a salary of $5,000 a year, with a residence and many perquisites furnished by the company. Baranof, *Nanok*, or the master, as all Tlingits called him, died in Batavia on his way home to Russia, April, 1819. Resanof in his journal, Langsdorff, Lisiansky, and Washington Irving have pictured this able tyrant and his surroundings, and the wretched condition of the Aleuts he impressed as hunters, and the *promyschlniks* or indentured Siberian labourers whom he kept so deeply in debt that they were never free to leave. None of the chief managers succeeding Baranof were able to make as large returns as he, and after renewed leases the company saw the advisability of closing out, and the Russian Government the disadvantage of holding such remote dependencies.

The Russian chief managers were:

Gregor Shelikoff, August 3, 1784, to July 27, 1791.

Alexander Baranof, July 27, 1791, to January 11, 1818.

Lieutenant Yanovsky for Captain Hagemeister, January 11, 1818, to January, 1821.

Captain Mouravieff, January, 1821, to January, 1826.

Captain Chistiakoff, January, 1826, to January, 1831.

Baron Wrangell, January, 1831, to January, 1836.

Captain Kupreanoff, 1836–1840.

Lieutenant-Commander Etholin, 1840–1845.

Captain Michael Tebenkoff, 1845–1850.

Lieutenant-Commander Rosenberg, 1851–1853.

Captain Voevotsky, 1854–1859.

Captain Furuhelm, 1859–1864.

The military governor, Prince Demitrius Maksoutoff, 1864, to October 18, 1867.

Baron Wrangell, the arctic explorer, was a diplomatic agent to Mexico as well as chief manager at Sitka; and after Captain Mouravieff, Captain Etholin was the great constructor and most enterprising manager. His was the golden age of the colony. Captain Tebenkoff made thorough surveys; and Kadin, an Aleut from the parish school, drew the 38 charts, and Terentieff, another Aleut, engraved on copper the maps of the great atlas of 1848, which is authority where not succeeded by the U. S. Coast Survey's recent work. Prince Maksoutoff, the only "governor," was detailed toward the end of the fur company's last lease, when their unwillingness to continue the charter under the same burdensome conditions made it probable that the Czar would have to govern this like his other provinces, instead of farming it out. The approaching expiration of that profitable lease caused him to seek a purchaser for these remote possessions, so impossible to defend in case of war, and so directly adjoining British territory.

THE PURCHASE OF RUSSIAN AMERICA.

In 1844–'45 the Emperor Nicholas offered Russian America to the United States for the mere cost of transfer, if President Polk would maintain the United States line at 54° 40′, and shut England out from any frontage on the Pacific. In 1854 it was offered to the United States, and again in 1859, when $5,000,000 was refused. From 1861 to 1866 survey parties of the W. U. T. traversed Alaska, choosing a route for a telegraph line to Europe *via* Bering Strait. The success of the Atlantic cable in 1866, after the failure of 1859, ended the project, and the line completed to the Skeena River was abandoned. A California commercial syndicate proposed the leasing and then the purchasing of the country in 1864 and 1866, and the project was informally considered at St. Petersburg. Secretary Seward deeply appreciated Russia's tacit alliance in sending its fleets to the harbours of San Francisco and New York in 1863, and keeping them there at that critical time when France and England were on the point of recognizing the Richmond government. Upon an intimation that the Czar wished to sell Russian America to any nation but England, Secretary Seward opened negotiations with Baron Stoeckl in February, 1867. A treaty of purchase was sent to the Senate March 30, 1867, reported April 9th, ratified May 28th by 30 yeas to 2 nays, and proclaimed by President Johnson June 20, 1867. Senator Charles Sumner, who especially championed the purchase, suggested Alaska—the name the natives gave to Captain Cook

—for the name of the mainland. It was intended to make General Garfield a first Governor of the Territory, and later divide it into six Territories.

THE TRANSFER OF RUSSIAN AMERICA TO THE UNITED STATES.

Immediate military occupation was decided upon. General Lovell H. Rousseau, as commissioner on the part of the United States, and Captains Pestschouroff and Koskul on the part of Russia, met at Sitka, October 18, 1867. Three men-of-war, the *Ossipee*, *Jamestown*, and *Resaca*, and General Jefferson C. Davis and 250 regular troops were in waiting, and at half past three o'clock that afternoon Prince Maksoutoff and Vice-Governor Gardsishoff and the commissioners met the United States officers at the foot of the Governor's flag-staff. Double national salutes were fired by the men-of-war and the land battery as the Russian flag was lowered and the American flag raised. Captain Pestschouroff advanced as the Russian flag fell, and said: "General Rousseau, by authority of his Majesty the Emperor of all the Russias, I transfer to you, the agent of the United States, all the territory and dominion now possessed by his Majesty on the continent of America and in the adjacent islands, according to a treaty made between those two powers." General Rousseau accepted, with similar brief phrases, and his young son raised the new flag slowly. Prince Maksoutoff gave a dinner and ball that night, the shipping was dressed, and fireworks were displayed.

There was an immediate exodus of all Russians able to leave, the Government offering free transportation to and homes in the Amoor settlements. The Julian gave way to the Gregorian calendar overnight, and a day was dropped from Sitka's records to right the difference of twenty-four hours between the Russian day coming eastward from Moscow and our day coming westward from Greenwich.

During the summer of 1867 Prof. George Davidson and eight scientists made a reconnoissance of southeastern Alaska, and their report with Senator Sumner's speech, were the strongest arguments Secretary Seward offered in his "*Russian America*" (Fortieth Congress, second session, House of Representatives, Ex. Doc. 177), submitted at the convening of Congress in December. There was bitter opposition to appropriating the $7,200,000 gold equal to $10,000,000 in paper at that time, to pay for the territory so summarily taken possession of; but on July 14, 1868, the House agreed by a vote of 98 against 49, and the draft was handed Baron Stoeckl. Corruption in the purchase was alleged, and a winter of investigation followed the winter of contest and ridicule. In 1869 ex-Secretary Seward visited Alaska, was first a guest of Mayor Dodge, and went off to Prof. Davidson's observatory in the Chilkat country. Returning by way of Kootznahoo, Mr. Seward was the guest of General Davis on the *Kekoor*, and addressed the citizens in the Lutheran church. He visited the Taku Glacier, the mining camps on the Stikine and Fort Wrangell, and was more than ever convinced of the great advantages gained by the purchase of Alaska. Lady Franklin reached Sitka by the troop-ship *Newbern* in 1870, and with her niece Miss

Cracroft was a guest of the commandant on the *Kekoor*. The discovery of gold in 1871 lent an excitement to garrison life, and army pay-vouchers were sunk in mining experiments at Sitka as profitlessly as navy pay-vouchers were poured into Juneau prospect-holes ten years later.

Alaska was at first a separate military department, General J. C. Davis commanding, with garrisons at Sitka, Fort Tongass, Fort Wrangell, Kodiak, Fort St. Nicholas in Cook's Inlet, and a detail on the Seal Islands. Eight officers succeeded General Davis at Sitka, after Alaska became a part of the Department of the Columbia, and June 14, 1877, Sitka, the last garrison, was vacated, and "all control of the military department over affairs in Alaska" ceased.

AN ABANDONED TERRITORY.

Within a few months after the troops left Sitka, the Indians had destroyed all Government property outside the stockade and threatened a general massacre. Appeals to Washington for protection were unheeded. The residents were besieged in the old fur warehouse in February. H. B. M.'s *Osprey*, Captain Holmes A'Court, was at Esquimault, when a last desperate appeal came to Victoria, and without orders or instructions hurried north, arriving from the ocean as a great war party was coming in from Peril Strait for the final attack. The residents attempted to raise the British flag and implore annexation and protection by England, but were prevented by Michael Travers, Duke of Japonski, an ex-sailor of the United States navy. Captain A'Court remained until a revenue cutter and a man-of-war arrived.

A man-of-war has been continuously detailed to service in southeastern Alaska ever since, and until the establishment of civil government such commanding officers were virtually naval governors and the ships *Jamestown*, *Wachusett*, *Adams*, and *Pinta* the seat of government. Captain Lester A. Beardslee, whose reports (Forty-sixth Congress, second session, Senate Ex. Doc. No. 145, and Forty-seventh Congress, first session, Senate Ex. Doc. No. 71) are the most valuable contributions to Alaskiana since the transfer, was succeeded by Captains Glass, Merriman, Coghlan, and Nichols.

Thirty bills providing a form of government for Alaska were introduced between the transfer and the passage of Senator Harrison's bill, May 13, 1884, which gave the nondescript tract the skeleton of civil government; a governor, district judge, marshal, clerk, and commissioners; with right to enter mineral claims, but distinctly withholding the general land laws. Attempts toward securing representation at Washington failed, and the invitation to join in the Columbian Exposition on a footing with other Territories was the first civil recognition given the so-called district, and the admission of delegates to the National Conventions at Minneapolis and Chicago in 1892 the first political privilege. "Alaska for the Alaskans" is vehemently claimed as a fit rule in executive appointments.

The Territorial Governors have been: John H. Kinhead, of Nevada,

May, 1884, to September, 1885; A. P. Swineford, of Michigan, September, 1885, to June, 1889; Lyman E. Knapp, of Vermont, June, 1889.

The Russian archives, manuscript journals, records, logs, and account-books were transferred from Sitka to the State Department at Washington in 1867, and, with Tikhmenieff's history of the colony, offer much of interest to those reading Russian text and script.

Sitka, the Capital of the Territory of Alaska.

Sitka, the capital and seat of government of the Territory of Alaska, is situated on the W. coast of Baranof Island. It is the official residence of the Governor, United States District Judge, and other Territorial officers, and had a population of 1,188 in 1890, composed of 298 whites, 859 natives, and 31 Chinese. Sitka is the home port for the U. S. man-of-war detailed for protective duty in these waters, and its marines are quartered on shore.

The town is built on level land at the mouth of *Indian River* at the foot of *Mt. Verstovoi* (3,216 ft.). Lincoln, the main street, extends from the Government wharf to the old Russian saw-mill, and the Governor's Walk, a beach road built by the Russians, continues to the Point, a half mile distant. A large parade-ground fronts the harbour. A granite monument at its centre is the U. S. Astronomical Station (latitude 57° 02′ N., and longitude 135° 19′ W.). Mail steamers remain twenty-four hours, and excursion steamers make shorter stay. Ships' time is one hour in advance of local time, which tourists should remember. The chief objects of interest are the so-called "Castle," or old residence of the Russian Fur Company's chief managers, the Greek cathedral church, the Indian village, the block-houses and Russian cemetery, the Sitka Mission and Industrial School, the Sitka Museum, and the Park along the banks of Indian River. There are several traders' stores with curio departments, and private dealers in curios offer interesting and very expensive souvenirs. The Alaska totem spoon was designed by the late Frederick Schwatka, and two native silversmiths make unique silver trophies. The spoon mania has always flourished in Alaska, and the Haidas' carved goat-horn spoons are real works of art. Spoon-polishing is a fashion of every tourist season.

The *Barracks* and *Custom-House* at the right of the wharf were built by the Russians, and the barracks building is the Territorial jail and court-house, with apartments above for civil officers. A long flight of steps leads to the Castle, as Americans have called it since 1867, crowning a rocky eminence 80 ft. in height. Baranof first occupied a leaky

two-roomed cabin at the foot of Katlean's Rock, where the barracks or jail kitchens stand. Later he built a block-house on the height, which was burned. Governor Kupreanoff built a large mansion, which was nearly completed at the time of Sir Edward Belcher's visit, 1837. It was destroyed by the great earthquake of 1847, and rebuilt on the same plan. Lisiansky, Lutke, and Whymper have given pictures and descriptions of these three citadels protected by stockades, bastions, and battery of forty pieces, and with Sir George Simpson have described its social life. It is a massive structure, measuring 86 × 51 ft., built of cedar logs, joined with copper bolts and riveted to the rock. It is three stories in height, with a glass cupola, which was formerly the light-house of the harbour, the lamp standing 110 ft. above the sea. It was richly furnished and decorated when transferred to the U. S. military commandant in 1867, but after the departure of the troops was looted of every belonging, wantonly stripped, and defaced. No repairs were made until 1893.

Baranof's daughter, Mme. Yanovski, was the first hostess on the *Kekoor* (1805–'21), but the Baroness Wrangell (1831–'36) was first to leave any social fame. Mme. Kupreanoff (1836–'40) crossed Siberia on horseback to accompany her husband to this distant post. Mme. Etholin (1840–'45), a native of Helsingfors in Finland, was the Lady Bountiful of blessed memory who did most for the colony. She established a school for creole girls, dowered them, and gave them wedding feasts in this home. Sir George Simpson has described her refined hospitality, the banquets of 30 and 50 guests, the costly plate, and appointments. Mme. Furuhelm (1859–'64), a Petersburg beauty, was long remembered for her accomplishments and kindness. The first Princess Maksoutoff (1864), an Englishwoman, died soon after her arrival, and was buried in the Lutheran cemetery on the knoll in line half-way between the two block-houses. The second Princess Maksoutoff was young and beautiful, with great tact and charm, and made life on the *Kekoor* one round of gaiety until the day when with streaming eyes she watched the Russian flag flung down and the United States colours run up on the citadel's flag-staff. It was the residence of the successive military commandants from 1867 to 1872, and Lady Franklin and Mr. Seward were entertained there.

Two young officers of the U. S. S. *Adams* and the purser of the *Idaho* manufactured a ghost story to meet the demands of the first pleasure travellers in 1883, who insisted that the deserted and half-wrecked castle must be haunted. A Lucia di Lammermoor, condemned to marry against her will, killed herself, or was killed by a returned lover, in the drawing-room, the long apartment on the second floor, north side, adjoining the ball-room, where she walks at midnight.

General Davis cleared away the old ship-yard, and filled in and made

the present parade-ground. The officers' quarters that fronted on two sides were nearly all burned by the natives between 1872 and 1877, the one nearest the sea-wall and native village being used as residence by the territorial governors. The heavy stockade around the settlement was torn down piecemeal after the troops left. The Sitka Historical Society was organized in time to preserve the two block-houses.

The large log building next the Custom-House, occupied by the Sitka Trading Company, was the old fur warehouse, and often held pelts to the value of $1,000,000 in Russian days.

Russian Orthodox Church of St. Michael.

Baranof built a small chapel in 1816, but when Ivan Veniaminoff was made bishop of the independent diocese of Russian America he built this cathedral, occupying a quadrangle midway in the main street. It was dedicated in 1844. Veniaminoff, then Metropolitan of Moscow, sent rich vestments, plate, pictures, and altar furnishing to the church, which was also under the special protection of the imperial family, who filled it with gifts. The chime of six bells in the cupola was sent from Moscow.

The interior is richly decorated, and is open to visitors on steamer days for a small admission fee, which goes to the poor fund of the parish. There are no seats, the congregation standing or kneeling, and a male choir chanting throughout all services. The interior is finished in white and gold, and the inner sanctuary, where no women may enter, is separated from the body of the church by elaborate bronze doors. The picture of the Ascension over these doors was formerly in the chancel of the Lutheran church. Massive candlesticks stand at either side of the doors, and the screen holds full-length pictures of St. Michael and St. Nicholas in armour and robes of beaten silver, with jewelled halos and helmets. The chapel and the altar in the right transept are dedicated to St. John the Baptist. The chapel of St. Mary on the left is used for winter services, and the altar picture of the *Madonna and Child*, their sweet Byzantine faces shadowed with heavy silver draperies, is much admired.

The church treasury contains many rich vestments, jewelled crowns, crosses, caskets, and reliquaries; a fine baptismal bowl, illuminated breviaries and missals with jewelled and enamelled covers. The bishop's mitred cap and the crowns used in the wedding ceremony are very ornate. The bishop's see was transferred to San Francisco in 1868, and the great diamond cross, and a Bible whose silver covers weighed twenty-seven pounds, were taken there, together with the richest vestments. In the following year discharged U. S. soldiers robbed the church of the Czar's jewelled Bible and many valuable pieces of plate, a few of which were recovered in a mutilated condition.

The Czar of Russia, as temporal head of the Greek Orthodox Church, maintains the 17 churches and 92 chapels in Alaska, and the

chapels in Chicago and San Francisco, at an expense of $60,000 a year. He transferred the bishop's see from Sitka to San Francisco, and then to Unalaska, and back to Sitka, partially restoring at last some of its glory to this Cathedral of St. Michael. The bishop resides in the long, green-roofed dwelling on the Governor's Walk, and there is a tiny Chapel of the Annunciation off his drawing-room whose altar shines with many fine silver icons.

The Chapel of the Resurrection, built into the stockade near the present Marine Barracks, was used for the native communicants until the transfer. It was once seized and used as a fortress during an uprising of the natives. It fell to ruin and was destroyed some years ago, and all communicants now worship together at St. Michael's.

The Lutheran church, built by Governor Etholin in 1840 for the Swedes and Finns employed in the foundries and ship-yards, was the garrison church after the transfer, later was abandoned, and finally torn down. Prince Maksoutoff sent all the plate and furniture back to the mother church in Finland in 1867. Lieutenant Gilman rescued and repaired the wrecked organ, that afterward found a place in the museum.

The ponderous log building on the S. side of the church, occupied as a general trading-store, was formerly the head office and counting-house of the Russian-American Fur Company. The deacon's house and other dwellings, which are church property, face on the N. side. The *Officers' Club-House* at the corner of the quadrangle was a richly appointed building in Russian days. It was the club-house of the U. S. military officers, but only a tenement-house since the garrison left. A small spruce-tree growing from the crevice of a boulder, beside the engine-house facing the club-house, is one of the regular sights of the town.

The eminence N. of the church, formerly the *tea-gardens* and race-track of the Russians, is reserved as site for a Governor's mansion. A path continues to the *Russian Cemetery* overlooking Swan Lake, which at one time furnished ice for a large ice-house whose stone foundations remain on the point of land S. of the church. A railway connected the lake with the ice-house, and shipments were made to San Francisco. The winters proving too mild, and the ice too thin and porous, operations were conducted at Gloubokoe Lake, or the Redoubt, then transferred to Kodiak, and finally suspended upon the perfecting of ice-machines.

Foundries once occupied the land between the church and the saw-mill. Ploughs and farm implements were exported to Pacific colonies, and the bells of nearly all the mission churches in California were cast here. These works and the ship-yards, being the only ones of their kind on the Pacific shores until after the gold discoveries in California, made Sitka the rendezvous of all ships and fleets.

The "*Blarney-Stone*," a square block on the beach opposite the Mission, is believed to dower the one kissing it with a magic tongue.

Salmon-Berry Market, Sitka.

Baranof is said to have spent many fine afternoons sitting on it. There is a Russian inscription on the face, and each U. S. man-of-war or revenue cutter used to cut its name on it as imperishable record of entry.

The *Sitka Mission and Industrial School* was established by the Presbyterian Board in 1878. In 1884 the Indian appropriation bill provided "$15,000 for the support and education of Indian children of both sexes at industrial schools in Alaska." An allowance of $120 per capita was made for each pupil enrolled. In 1888 this educational fund was transferred to the Board of Education, and the Indian Bureau ceased to have any connection with the natives of Alaska. There were 164 pupils in 1890–'91, and the group of buildings include dormitories, school-rooms, work-rooms, a hospital, church, museum, cooper, carpenter, blacksmith, and shoemakers' shops. The laundry and industrial school building were the gift of Mr. and Mrs. Elliot F. Shepard, of New York. There is a model settlement of school graduates beyond the Mission. Exercises are held in the school-rooms on steamer days. The Mission band plays there, and usually as a farewell at the wharf.

Chief Michael's village, destroyed by Lisiansky in 1804, occupied the *Point Koloshenskoy* at the mouth of **Indian River.** Afterward the Swedes and Finns in the Russian Company's employ built their group of cottages, and traces of the ruins may be found in the park-like reach.

The Indian River Park.

Kaloschinskaia Retscha, or **Indian River,** has been admired by every visitor of the century. It rises in the valley that opens behind the town, and is fed by the snow-banks of *Verstovoi* and the *Three Brothers*, or *Valley Mountains.* In Sir George Simpson's time (1844) it was so crowded with salmon that a canoe could not be forced through. Malma trout are the best catch of summer weeks now, and salmon swim occasionally. By Executive proclamation of June 21, 1890, a strip of land 500 ft. wide on the right bank and 250 ft. wide on the left bank of Indian River, between the falls and its mouth, were reserved for a public park, and 10 acres of land beyond the Mission grant was reserved for a naval and military cemetery. It is a beautiful natural park, and contains much of interest to the tourist—thickets of devil's club 20 ft. high, thickets of salmon-berry and thimble-berry bushes, and a wealth of strange ferns and mosses. One path leads from the Governor's Walk through the model village beyond the Mission to the river's bank, and two other paths lead from the Governor's Walk

to the bridge spanning the stream above its mouth. Many side paths diverge from the main path along the left bank, which extends from the falls to the beach. At the latter point are the graves of Lisiansky's men who were killed by ambuscaded Indians while obtaining water for the ship in 1804. The path continues thence to *Jamestown Bay*.

On the right bank near the falls, the prostrate trunk of a cedar 10 ft. in diameter, with a group of young trees growing on its mossy terrace, lies beside the path. The rustic seats, bridges, and the cleared path are part of public improvements made by Lieutenant Gilman, U. S. M. C., in 1884. His rustic bridge at the falls was destroyed by woodcutters, who allowed untrimmed trees to float down and jam above it; and the lower bridge was destroyed by flood. The *Davis Road* connects the old brewery above the falls and the Governor's Walk, crossing a high swamp covered with blueberry bushes and moroshkies (*Rubus chamæmorus*), a small ground berry. The *Cemetery Road* joins it near the beach.

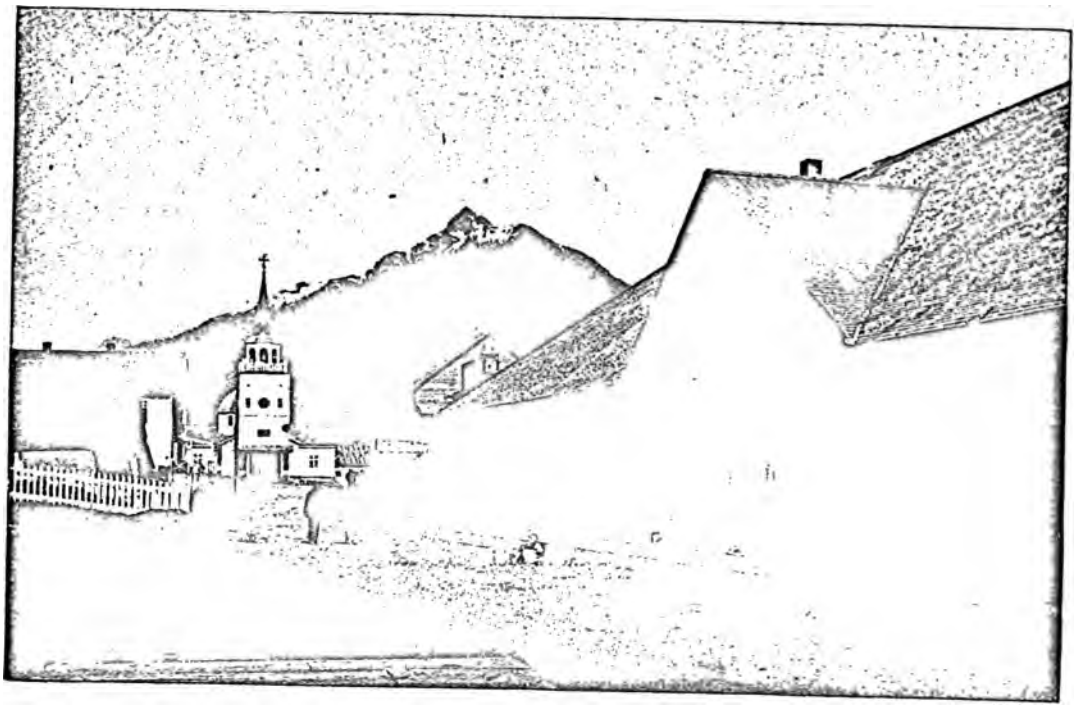
The Indian Village.

The native village fronting on the harbour N. of the wharf has been transformed since 1880, and does not contain one of the original lodges or great communal dwellings of old. Captain Glass had the village cleaned in 1881, and the houses numbered, for record and sanitary inspection. An ambition to display the highest number has caused each one to raise the figures on his doorway since such discipline was relaxed. The silversmiths and basket-weavers often have choice pieces of their work in reserve, and the tourist readily pays a higher price for the privilege of purchasing on the premises. *Mrs. Tom*, who is not a princess, but of commonest Yakutat stock and of an inferior totem, is possessed of great wealth in silver dollars, and is one of the shrewdest and largest traders in the Territory, owning schooners and branch stores. Extensive advertising has made her famous and raised the prices of her goods, but few of the romantic histories current have any foundation in truth.

A trail leads up the beach to the sawmill, and another across to Swan Lake. Gavan, or *Harbour Hill*, N. of the village, is 2,200 ft. in height.

THE SITKANS AND THEIR RECORDS.

General Halleck's census of 1869 estimated the Sitkans at 1,200. Captain Glass's winter census of 1881 found 840. The official census



The Old Fur Warehouse, Greek Church, and Peak of Mt. Verstovoi, Sitka.

of 1890 recorded 814 villagers in July, but residents say that there are always more than 1,000 living in the ranch in winter.

The Sitkans are of mixed and common stock, descended from outcasts, renegades, malcontents, and wanderers of many tribes. The original word "Sheetka"—*sh* or *sha*, a mountain, and *tukwan*, a village—is freely translated as "the people living at the base of the mountain" (*Verstovoi*), and the true *Sheetka* was the fortified village of 800 people destroyed by Baranof and Lisiansky at the Point. All other Tlingits looked down upon them at that time, and a Hoonah or Kootznahoo child was most insulted when called "as great a blockhead as a Sitkan." An old Kootznahoo told Lisiansky that long, long ago, in a bay (Katliansky) near Old Sitka, two orphan brothers of unknown origin lived alone in a world of plenty until Chat, the younger, ate a sea vegetable like the prickly cucumber. The elder knew it was the one forbidden fruit; the abundance ceased, and the two nearly starved. The bay was common hunting-ground to all tribes, and some visiting Stikines, pitying them, left them Stikine wives of the Crow clan to teach them how to live in the changed world. All Sitkans of the Kaksatti, or Crow totem, are descended from this pair. The Kaksattis and the Kokwantons, or Wolf clan, about evenly divide the tribe now, the latter a band of mixed Auk and Chilkat stock, who came over from the Kootznahoo country in Baranof's time.

Until 1821 the Indians were not allowed to settle on the fort shore, and they kept to the harbour islands. Lutke (1827) first described the present ranch, the vast lodges with the totem's effigy before the door, and the feasts and dances that went on at these signs of the Crow, the Wolf, and the Bear. Although the fort was strongly defended, 3,000 warriors once appeared, demanded blankets, and began a dance that frightened the Russians into compliance. In 1836 an epidemic of small-pox began, lasted for four years, and reduced all the tribes to one half their number. Long before the Russians came the great Crow had sent the same fatal disease as punishment for the continual wars among the Tlingits; but the medicine-men ascribed this epidemic to the white priests and doctors, and, like the Salish, viewed baptism and vaccination as rites of evil effect. In 1855 the Sitkans attacked the fort, but were quickly subdued.

They were displeased at the change of flags, puzzled by the lax rule of the new owner, and Katlean told General Davis to put his soldiers in canoes if he expected to control the Tlingits. When the troops left they enjoyed a season of lawlessness, but were quickly brought around by the man-of-war government. Schools and prosperous trade have transformed them, and they are but frontier fishermen, loggers, or boatmen, differing only in complexion and occasional speech from the average white backwoodsman. Their canoes are the only picturesque thing left them, and the winter dances are fast taking on the nature of historical plays, representations of ancient times and customs. The berry feast in midsummer is often celebrated with spirit, and a water procession of decorated canoes carries the whole tribe off on a picnic to gather salmon-berries on favoured shores.

Lisiansky made a vocabulary of the Sitkan dialect, and Dixon recorded several of their songs. Baron Wrangell wrote much of them, and Veniaminoff compiled a valuable ethnological work. He recorded their legends and folk-lore, and described their customs in detail. Since the transfer the only ethnological work has been that of Lieutenant George T. Emmons, U. S. N., whose collections in the Museum of Natural History, Central Park, New York, and for the Alaskan section in the Columbian Exposition at Chicago in 1893, embody all of Tlingit art, and his note-books contain all of Tlingit record and lore resulting from nine years' systematic study.

The Ascent of Verstovoi.

The ascent of Verstovoi is the most profitable day's excursion around Sitka. The first shoulder, the *Mountain of the Cross* (2,597 ft.), commands as fine an outlook as the very tip of the Arrow-Head peak, and may be reached by either of two trails, in two and a half or three hours from the wharf. No climber should attempt it alone or unarmed, as the way puzzles woodsmen, and bears are numerous in the salmon season.

The old *Russian Trail* starts from the ford of Indian River at the end of the wood-road leading past the cemetery. It was cleared in the last decade of Russian rule, when an energetic Alpine Club member scaled and planted crosses on all the heights around the bay. During this official's stay there was an epidemic of mountain-climbing, and the Russian women took part in the many picnics and dances on the heights. The trail is now overgrown and blocked in many places, and is longer than *Koster's Trail* from Jamestown Bay.

The climber may be rowed to the water-trough in Jamestown Bay, where *Koster's Trail* begins, or follow the path leading from the Lisiansky graves on Indian River through to the bay. At low tide short cuts may be taken across the thick, slimy beds of sea-weed covering the rocky beaches. The same Executive proclamation that reserved the banks of Indian River, reserved a tract of land 250 ft. wide on either side of the little stream feeding the U. S. S. *Jamestown's* water-trough. The trail is about two and a half miles to the Cross, a steep and steady ascent, first following the stream to the logger's cabin. The dense underbrush ceases at about the level of 800 ft., and beyond everything is covered with moss. At the timber-line are beds of yellow violets and acres of heathery bryanthus and cassiopea, daisies, buttercups, anemones, and cyclamen. The view of the Baranof mountains, Silver Bay, the ocean, sound, and Mt. Edgecumbe, with Sitka at one's feet, well repay the climber who reaches the tall wooden Cross.

Verstovoi, named because the summit was thought to be one verst distant from the Castle, has also been known as Popoff Mountain, the Pouce, the Arrow Head, and Anchor Peak—the latter because a snowy anchor is seen from the N. outlined near the summit. The Verstovoi peak cannot be reached from the Jamestown side. The climber must circle around the snow-fields on the valley side to reach the small platform 3,216 ft. above the bay. A record was left by the W. U. T. surveyors who reached the top and took observations in 1865, and the *Jamestown's* officers erected a flag-staff, which each climbing party replants. The peak is said to have been split by an earthquake in the last century, exposing the smooth, triangular mass shaped like an arrowhead. By climbing the slippery grass and bryanthus beds on the Cross side to the hanging hemlock grove, one may see the great tent roof of Mt. Crillon and the triple peak of Mt. Fairweather lying a hundred miles due N.

Excursions in the Bay and Vicinity of Sitka.

No other settlement in Alaska offers so much in its immediate neighbourhood as Sitka. The ascent of Verstovoi is the only land excursion possible from the town. All other trips involve cruises in canoe or in sail-boat, unless a launch is brought from Juneau or Killisnoo. Shumakoff, Clements, Frobese, and other local guides will undertake all arrangements for sportsmen, naturalists, or pure pleasure-seekers. The usual rates are $2 a day for a canoe, and an additional per diem for each oarsman. Sail-boats with covered cabins cost $5 to $10 a day. The regular day's wages for camp hands and others is $2. The guides expect more.

The Harbour Islands.—It is possible to make a canoe or fishing trip among the harbour islands during the steamer's regular wait.

Japonski, opposite the Indian village, is the largest of the 130 Harbour Islands. It measures a mile in length and is a half mile in width. Its name, "Japan," was given because of the residence there of the crew of a Japanese junk wrecked at this point in 1805. It was the site of a large native village in Baranof's time. In 1840 Captain Etholin built a magnetic and meteorological observatory, and records were kept until the day of transfer. General Davis reserved all the harbour islands for military use, and Japonski was garrison, stock-yard, and naval coal station in turn. Michael Travers, "Duke of Japonski," lived there and cultivated vegetable gardens and hay-fields, until the reclamation of the land for Government use in 1890 drove him insane, and a special agent was sent from Washington, D. C., to convey him to St. Elizabeth's Asylum near that city, the only refuge of the kind available to Alaskan patients. The coal-sheds and powder-magazine are the only buildings besides Travers's cabin. Etholin's observatory was burned by the Indians when the troops left.

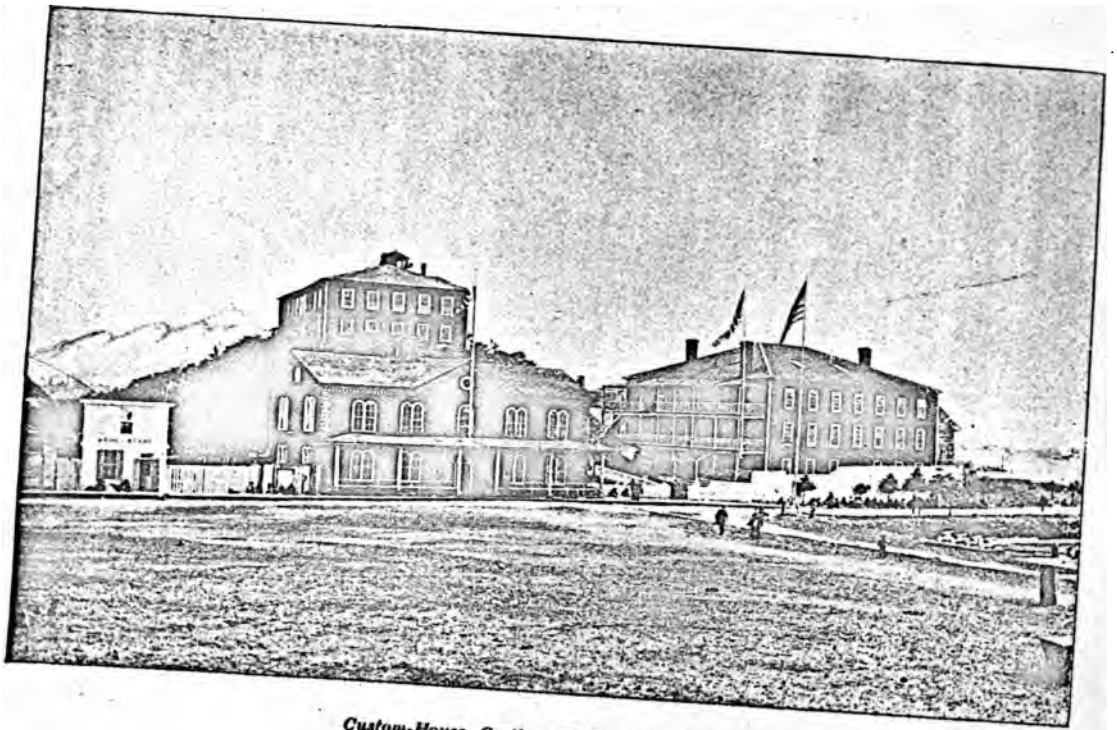
Harbour Island lies S. of Japonski, and contains several Indian *caches* often mistaken for shamans' graves, and *Aleutski* Island beyond is the site of truck-gardens of a retired marine. The ship channel lies between *Aleutski* and *Kutkan* islands, the latter the home of a chief converted and baptized by Veniaminoff, and who related to the latter much of the legend and folk-lore he recorded.

Makhnati (Rugged) *Island* is the landmark for ships from the ocean. It was chosen for a light-house site in 1867, and Captain Beardslee's wooden beacon on the seaward bluff is often taken for a shaman's grave. *Signal Island* was the place for bonfires to light and lead ships in Russian days. The firing of a gun caused the beacon on the citadel roof to flash out, and men were in waiting to light the signal-fires that marked the course into the harbour. Departing ships were blessed by the Russian bishop in full canonicals, and deck, mainmast, flag, and crew were sprinkled with the jewelled holy-water brush. All small boats rowed three times round, singing a farewell, and nine cheers sped the ship as the sails filled.

Sea bass may be caught at each flood tide off the N. shore of Japonski, and on the S. shore between it and the bold bluffs of Charcoal Island. Cod, flounders, and sea trout reward the angler, and any native boatman knows the best fishing-banks and trolling-grounds and the times and places for salmon "runs." Between *Japonski* and *Sasedni* Island, next beyond, W. of it, is a sea garden worth floating over to admire. The growths of sea-weed and submarine plants are of tropical luxuriance. Fronds as large as a banana or lysichton leaf crowd stems 80 ft. long; kelp lines 100 and 200 ft. long are coiled on the surface, and their "orange heads" float in groups. Coral and sponges are found in the bay, the teredo is as destructive as in the tropics, and strange drift is left by the ocean currents. *Sasedni*, W. of Japonski, is the most beautiful of the islands—the "black beach" on the S. W. shore commanding the finest view of Mt. Edgecumbe. Beds of large blue-bells and thickets of salmon-berries are found on all the islands, and they are nesting-places of the olive-backed thrushes, whose song is a repeated "*Te Deum! Te Deum! Te Deum!*" in ascending notes of entrancing sweetness. Crows, the red-footed "oyster-catchers," sidle over all Alaska beaches in search of clams, but find abalones on these islet shores, pry them off and carry them to the tree-tops to devour. These scavengers are guardian spirits and the great Crow is tutelary genius of the region. Deceased shamans and illustrious ones of the Crow clan are supposed to assume this form, and this reincarnation saves them from native shot or snare.

The Ascent of Mt. Edgecumbe.

The climbing of this extinct volcano on Kruzoff Island involves an indefinite time, as one reaches its base by launch or sail-boat after crossing waters open to the heaviest swells when southeast winds blow. Fogs are frequent, and the waters are full of sunken rocks. Landing



Custom-House, Castle, and Barracks, Sitka.

on the Sitka side, there is a hard tramp for 5 or 7 miles through a swampy forest to the actual slope. In favourable weather a better landing may be made in a cove on the ocean side, whence it is only 2 or 3 miles to sloping ground. Once out on the open lava and scoriæ it is but an easy walk up an incline, and the crater is entered by a gap in the southeast rim. The snow leaves the slopes and crater entirely in midsummer. Steam rises from many sulphur-crusted vent-holes, and beautiful specimens of sulphur, lava, and volcanic glass are obtained. Several women have made the ascent in recent years.

After Tschirikow charted this mountain of St. Lazaria it was next seen by Maurelle, the pilot of Heceta and Bodega y Quadra's expedition sent out by the Spanish Viceroy Bucarelly. He entered "the great bay among mountains" St. Jacinth's day, August 16, 1775, named the peak San Jacinto and the bay Guadalupe. La Pérouse next saw this peak of St. Hyacinth, and then Cook, May 2, 1778, named it Mt. Edgecumbe, and the bay the Bay of Terrors. Dixon called the bay Norfolk Sound, and Marchand (1791) took his predecessors to task for this renaming. "Que gagneroit la Géographie à ce changement de nom? qu'y gagneroit *l'immortel Cook*"? he exclaimed, when the natives made him understand that the bay was Tchin-Kitune (a useful arm). He did not record the native name—*Tlugh*, or sleeping mountain.

Two Kadiak hunters climbed the mountain in 1804 and reported the crater filled with water. Lisiansky and Lieutenant Powalshin ascended in 1805, and found "a basin 2 miles in circumference and 40 fathoms deep filled with snow," July 23d. Lisiansky estimated the height at 8,000 ft., with forest reaching to within a mile and a half of the top. Lutke was told (1827) that the mountain was in eruption in 1796 and 1804. In 1867 Professor Davidson estimated its height at 2,855 ft. In 1886 Professor William Libby, Jr., of Princeton College, climbed to the crater's rim and gave its height as 3,782 ft. The whole mountain, according to Prof. Libbey, is only a parasitic cone on a greater volcanic mass of which the *Camel's Back*, N. of Edgecumbe, was the chief vent-hole. The oval crater in the Camel's Back is 5 miles long and 3 miles wide, a basin 1,500 ft. deep, with an internal slope of about 60°. The level floor is covered with forests and open parks, with several lakes. The Camel's Back rose from the sea cycles ago, and built around it the terraced platforms constituting Kruzoff Island. Edgecumbe was formed on its inert slopes only a few score centuries ago.

Sportsmen find many attractions within the 18-mile limits of the Kruzoff shores. There are bear and deer. There is a lake on the Sitka side where rainbow trout may be caught. There are many clam beaches, and a bay where Captain Beardslee found as many soft-shell crabs as in those exceptional seasons when Massett Inlet and Prince of Wales bays have been edged with broad windrows of cast-off shells.

Silver Bay and the Sitka Mining District.

Silver Bay, or *Serrebrennikof Bootka*, as named for a Siberian explorer killed at Copper River, is the *Kakette*, or "lake belonging to black fish-men" of the natives. It opens at the south point of Jamestown Bay, 2¼ miles below Sitka, and extends for 6 miles with a width of less than half a mile between mountains rising precipitously 2,000 ft. and more. Lakes on the south foot of Verstovoi feed *Saw-mill Creek*. The remains of the Russian crib dam and flume are on the bank a quarter of a mile from the mouth. The mill was burned by the Indians after the departure of the troops. Malma or Dolly Varden trout are to be caught below the dam, and in the farther waters the rarer beauties with the rainbow speckles abide.

Round Mountain, at the turn of the fiord, is a symmetrical green landmark, with a lofty cave on its east side into which a canoe may be rowed at high tide. *Kalampy's Land-Slide*, on the opposite mountain wall, marks where a Russian hunter in chasing a deer encountered a bear just as the earth trembled and the crust of the mountain slipped down into the water. The deer was caught by the branches of a tree at the water's edge, and Kalampy, while hanging on the next tree, saw the bear drown. *Bear Bay*, the first indentation on the east shore and home of a famous grizzly, holds a magnificent landscape cañon, three massive peaks ranging in echelon on one side with a massive broad-armed cross outlined by the snow on *Kupolinaia's* summit—a symbol seen from the farthest end of Sitka Sound. A waggon-road leads up the cañon to a group of mines.

At the extreme end of the bay the *Silver Creek Fall* shoots down 300 ft. in long rapids, the last leap of 60 ft. bringing it to tide-waters. From the wharf of the Stewart mine a road leads to the mill and tunnels of a valuable group of mines. There is fine fishing in *Salmon Creek*, and trails lead to several mines, those of the Great Eastern Group lying on the divide between Silver Bay and Gloubokoe Lake at an elevation of 5,500 ft.

The Gold Mines.—The Russian Fur Company's officers never wanted to discover and made but half-hearted search for precious minerals, their charter providing that any lands containing minerals should belong to the crown. Mining has been most disastrous to fur-trading interests, and opposed by such everywhere. Baranof is said to have knouted a promyshlenik who brought a piece of gold quartz from Silver Bay, and discouraged prospecting for all time. Prof. Blake reported to Mr. Seward, in 1867, that there was little promise of precious metals "in the hard conglomerate or grit passing into argil-

lite" in the immediate neighbourhood of Sitka. In 1871 Edward Doyle found float gold in the Silver Bay shores, uncovered a quartz stringer on Round Mountain, and another on Indian River. The Haley and Rodgers lode, on Salmon Creek, was the first worked by garrison officers. The Stewart Mill, on the neighbouring claim, was built in 1877, and the Bald Mountain claims were worked for a few years. The Juneau discoveries drew miners away, and the district was virtually abandoned. Governor Swineford's energy caused a revival of mining interests in 1885; other mills were built and work pushed, but a second lull ensued when he left, and for several seasons only prospecting and assessment work was done. Differences among stockholders and want of means have prevented any of the mines being thoroughly and systematically worked for any time. The tons of high grade ore taken out, and the rich specimens obtained, prove the existence and quality of the lodes, and the prosperity of the region is but a matter of time.

The Baranof Shore south of Sitka.

The tourist can visit **The Redoubt**, or Drashnikoff settlement, in the Toyon's, or *Ozerski Bay*, 12 miles S. of Sitka, and return in a day by canoe; or one may go through to the Hot Springs in one day's canoe trip, stopping at the Redoubt on the way.

From Sitka the course leads for 8 miles through a maze of wooded islets to the mouth of the bay, that extends 4 miles as a narrow cañon or rock cutting to the natural dam holding the waters of the Gloubokoe Lake, or the "Deep Sea." Drashnikoff Peak rises at the end of the bay perpendicularly from the water 1,500 ft. The Russians had a fortified settlement and jail here, and cured their winter supplies of salmon. There were 2 flour-mills, a saw-mill, tannery, church, and residence buildings, within a stockaded post, and substantial weirs in the rapids between the lake and bay. Lutke visited and described the Redoubt in 1827, and Sir George Simpson in 1844. The buildings were burned by the natives after the troops left Sitka, and the stockade destroyed. The pioneer Alaskan cannery established at old Sitka in 1878 was moved to the Redoubt, but closed in 1890 and for several seasons, and work conducted at Red Bay, 20 miles below, where the catch of several salmon streams could be centred.

Gloubokoe Lake, 8 miles long and less than three-quarters of a mile wide, has a depth of 50 fathoms, and is chiefly fed by a large stream at the N. E. end. The stream may be ascended 3 miles, and trails lead from the banks to the mines on Bald Mountain and down the range, and over the divide to Salmon Creek and Silver Bay. There

is a fine glacier on the mountain at the E. end of the lake, and the mountain walls rise precipitously on either side of the flooded cañon. From the S. E. end of the lake a portage of a mile crosses a low divide to Hot Springs, or Klukacheff Bay. The Redoubt is an admirable headquarters for sportsmen or anglers, and permission may be had to use some of the abandoned cannery buildings for shelter.

The White Sulphur Hot Springs.

At the highest tide, a chain of intricate passes may be used by canoes, and several miles saved in the voyage from the Redoubt to **Hot Springs Bay.** It is worth several hours' delay to thread these labyrinths through the trees and rocks, and it furnishes the ideal water trip of the archipelago, bringing more of landscape beauty in range than any other three hours of canoeing. The Hot Springs curative qualities were long known to the natives, and the bay was neutral ground where all tribes met, but none built a permanent village.

Lisiansky discovered or explored the bay in 1805, and spent a week there. Lutke mentions his visiting the one house at the springs in 1827 and in 1837 Captain Belcher spoke of the saw-mills at "Les Sources, or warm springs, which serves as a sort of Harrowgate to the colony." Sir George Simpson enjoyed his stay in the comfortable quarters at the hospital. In 1852 the natives attacked the settlement, burned the buildings, and drove the invalids to the woods. All of them reached Sitka, although compelled to cross the mountains in the dead of winter. The new stockaded post contained a hospital, chapel, residences for two doctors, and a pharmacist, and there was daily communication by steam-launch with Sitka. There were gardens and hay-fields on the great cleared hillside, and the subterranean heat still forces a rich vegetation. The buildings were all burned by the natives after the departure of the troops from Sitka.

By an oversight, the Hot Springs were omitted from the list of lands reserved for Government use, and this tract was taken up by a Sitka merchant, who has built a group of cottages and a rude bath-house. Arrangements for the use of these cottages may be made in Sitka, where the keys are kept. A charge of 50 cents a night is made for each person sleeping in the hay-filled bunks of the cottages, using the cooking-stoves and fire-wood.

The White Sulphur Spring bubbles from a gem-like pool and crevices among the rocks, and has a temperature of 155° Fahr. The other spring has a temperature of 122°, and both are impregnated with sulphur, iron chlorine, and magnesia. They are sovereign for

rheumatism and skin diseases, and are said to be the most valuable springs medicinally of any N. of the Harrison Hot Springs on the Fraser River.

The extensive meadows and gardens cleared by the Russians are relapsing to wildernesses again, and mosquitoes are as many and venomous as in Lisiansky's day. There is a Tlingit legend that the mosquito was originally a giant spider, but an evil spirit threw him in the fire, where he shrivelled to his present size and flew away, with a coal of fire in his mouth, with which he retaliates upon mankind. Humming-birds nest in the trees, and thrushes call from island to shore.

The mountains behind the bay are full of game, and the black-tailed deer may be easily found, or lured by the low, wailing sound made by blowing on a blade of grass held between the thumbs. Sportsmen have had bear-hunting in the dense berry thickets, and there are several trout streams near.

One of the finest views of Mt. Edgecumbe is from the Hot Springs hillside, the hyacinthine peak seeming to float enchanted beyond the long, island-dotted water foreground. The ball of the July sun drops evenly within the crater's edges, with the most superb colour panorama that northern skies and sea can summon, and not an hour of the long-drawn summer sunsets should be missed by those who visit the steaming hillside by the ocean.

"To westward" from Sitka to Unalaska, along the Continental Shore.

A steamer of the *North American Commercial Co.* leaves Sitka for Unalaska upon the arrival of alternate mail steamers from the Sound during seven months in the year and on or about the 13th day of June, July, and August, when possible. The P. C. S. S. Co. allow stop-over privileges to those holding its excursion tickets, and the opportunity is given the tourist to see Mt. St. Elias, a different scenic panorama, and the strange life in the farthest and most out-of-the-way region of the United States. The steamer calls at Yakutat, Nuchek, Kadiak, Karluk, Unga, and Sand Point, giving tourists opportunity to see everything of interest on or near the route, within the 27 or 30 days scheduled for the round trip of 2,500 miles from Sitka. The fare, $120 for the round trip, includes meals and berths going and coming, board and lodging at the N. A. C. Co.'s house at Dutch Harbour, Unalaska, and the trip to Bogoslov beyond Unalaska. The steamer is staunch and well offi-

cered, and all the accommodations for the 22 cabin passengers are above deck. In midsummer smooth passages may be expected. The Kadiak and Unalaska regions contain the oldest Russian settlements, but they had no regular communication with the rest of the world until the establishment of this mail route in 1891. Up to that time even criminals were sent to Sitka for trial by way of San Francisco. The tourist service was inaugurated in 1893. Passage can be engaged only from the N. A. C. Co.'s agent at Sitka.

From Sitka to Yakutat.

The westward steamer's course is directly out from the harbour to the open ocean and around Mt. Edgecumbe. Mt. St. Elias has been seen from Salisbury Sound, at the N. end of Kruzoff Island, and on any clear day is visible 160 miles at sea.

There are but two indentations in the plateau bordering the ocean from Cross Sound to Yakutat Bay, and these, *Lituya Bay* and *Dry Bay*, have no commercial importance.

The plateau supports four great peaks—Mt. La Pérouse (11,300 ft.), Mt. Crillon (15,900 ft.), Lituya Mt. (10,000 ft.), and Mt. Fairweather (15,500 ft.). The *Crillon* and *La Pérouse Glacier* join and front on the ocean for 2 miles just N. of Icy Cape.

Lituya Bay, 40 miles N. of Cape Spencer, cuts in 6 miles to the base of Lituya Mt. in T-shape, and the cross-piece is 8 miles in length.

It presents the greatest dangers to navigation. The tide enters in a bore, and it can only be run at slack water. La Pérouse lost two boats' crews in this bore in 1786, and erected a wooden monument to their memory on Cenotaph Island within the bay. Dr. Dall surveyed the bay in 1874, described his entering with the tide as "sailing down-hill," and epitomized its scenery as "a sort of Yosemite Valley, retaining its glaciers, and with its floor submerged 600 or 800 ft." Lieutenant G. T. Emmons explored it, and crossed overland to Dry Bay. He then learned the native legend of "the two men of Lituya," who, assuming the shape of bears, sit at either side of the entrance holding a sail-cloth just beneath the surface, and rudely tossing any incautious canoeman who paddles across it. Placer mining has been successfully conducted on the shores of the bay since 1889.

Dry Bay is a shallow lagoon at the delta of the *Alsekh River*, which rises near the Chilkat's source and flows in behind Mt. Fair-

weather through the depression noted by Captain Cook. It was explored from source to mouth by the Frank Leslie Expedition of 1890, along the old trail used by Klehkutz's Chilkats. This glacial river is crowded with salmon in their season.

Yakutat Bay, 45 miles above Dry Bay, is only an indentation of the coast curving inward some 20 miles, and the whole force of the north Pacific sweeps into it, rendering landing difficult and dangerous at all times. The bay always contains much floating ice from the glaciers at its head, and a heavy surf beats on the St. Elias shore.

There is an Indian village, trading-store, and Moravian mission at *Port Mulgrave*, opposite Khantaak Island, where Baranof established a colony of Siberian convicts. Several ships were built there, but the natives burned the fort and massacred the settlers. There was great excitement in 1880 at the discovery of gold in the black-sand beaches, and in 1883–'86–'88 there were considerable mining camps. By using the same rotary hand amalgamators as on Californian gold beaches, as much as $40 a day to the man was realized. The Yakutat chief exacted licenses and royalty from the unprotected miners. A tidal wave heaped the beach with windrows of dog-fish, which, decaying in the hot summer sun, soaked the sands with oil and the mercury could not act. The miners moved to a new beach; a tidal wave washed all the black sands away, and the camp was abandoned. The sea has since been restoring the black sands. A vein of good coal was found a mile and a half inland and 300 ft. above the bay, and, but for the difficulty of loading ships in that bay, the coal problem would be solved for all the Sitkan region. Yakutat village contains some original Tlingit lodges, and the Yakutat women are the finest basket-weavers on the coast.

In 1890 Captain C. L. Hooper, U. S. R. M., pushed into the head of Malaspina's *Disenchantment Bay*, 60 miles beyond the point where the Spanish explorer represented the water-line as ending, and discovered the Dalton and Hubbard tide-water glaciers. In 1891 Prof. Russell explored the bay farther in a canoe, and found it bending sharply southward and extending for another 60 miles to a level prairie country at the foot of Mt. Fairweather. Prof. Russell charted the bay and named Mts. Unana, Ruhamah, and Pinta.

Mt. St. Elias.

Since Bering sighted the *Bolshoi Shopka* ("great peak") on St. Elias day, 1741, it has been the goal of many navigators and explorers, and their records of its height, latitude, and longitude are:

Height and Position of Mt. St. Elias.

Date.	Authority.	Height.	Latitude.	Longitude.
1778	Cook *	.....	.....	.....
1786	La Pérouse	12,672 ft.	60° 15′ 00″	140° 10′ 00″
1787	Portlock and Dixon *	.....	.....	.....
1788	Douglass *	.....	.....	.....
1791	Malaspina	17,851 ft.	60 17 35	140 52 17
1794	Vancouver	.....	60 22 30	140 39 00
1837	Belcher	.....	.....	.....
1847	Russian Hydrographic Chart, 1778	17,850 ft.	60 21 00	141 00 00
1847	Tebenkof (Notes)	16,938 "	60 22 30	140 54 00
1849	Tebenkof (Chart VII)	16,938 "	60 21 30	140 54 00
1872	Bach. Can. Ineeln	16,758 "	60 17 30	140 51 00
	English Admiralty Chart 2172	14,970 "	60 21 00	141 00 00
1874	U. S. Coast Survey	19,500±400 "	60 20 45	141 00 12
1877	Prof. Chas. Taylor, Lieut. C. E. S. Wood †	.....	.....	.....
1886	Lieut. F. Schwatka, Prof. William Libby, Jr., A. W. Seton-Karr ‡	.....	.....	.....
1888	W. H. Topham, Edwin Topham, William Williams, George Broke	(estimated) 18,500 ft.	.....	.....
1890	Mark B. Kerr, topographer ‖	15,850 "	.....	.....
1891	Prof. I. C. Russell (for National Geographic Society)	18,100±100 "	60 17 51	140 55 30
1892	Turner, McGrath (U. S. Coast Survey)	18,100±100 "	.....	.....

* No observations made. † Indians obliged them to turn back.
‡ New York Times Expedition. Reached Chaix Hills. No observations made.
‖ National Geographic Society's Expedition, commanded by Prof. I. C. Russell.

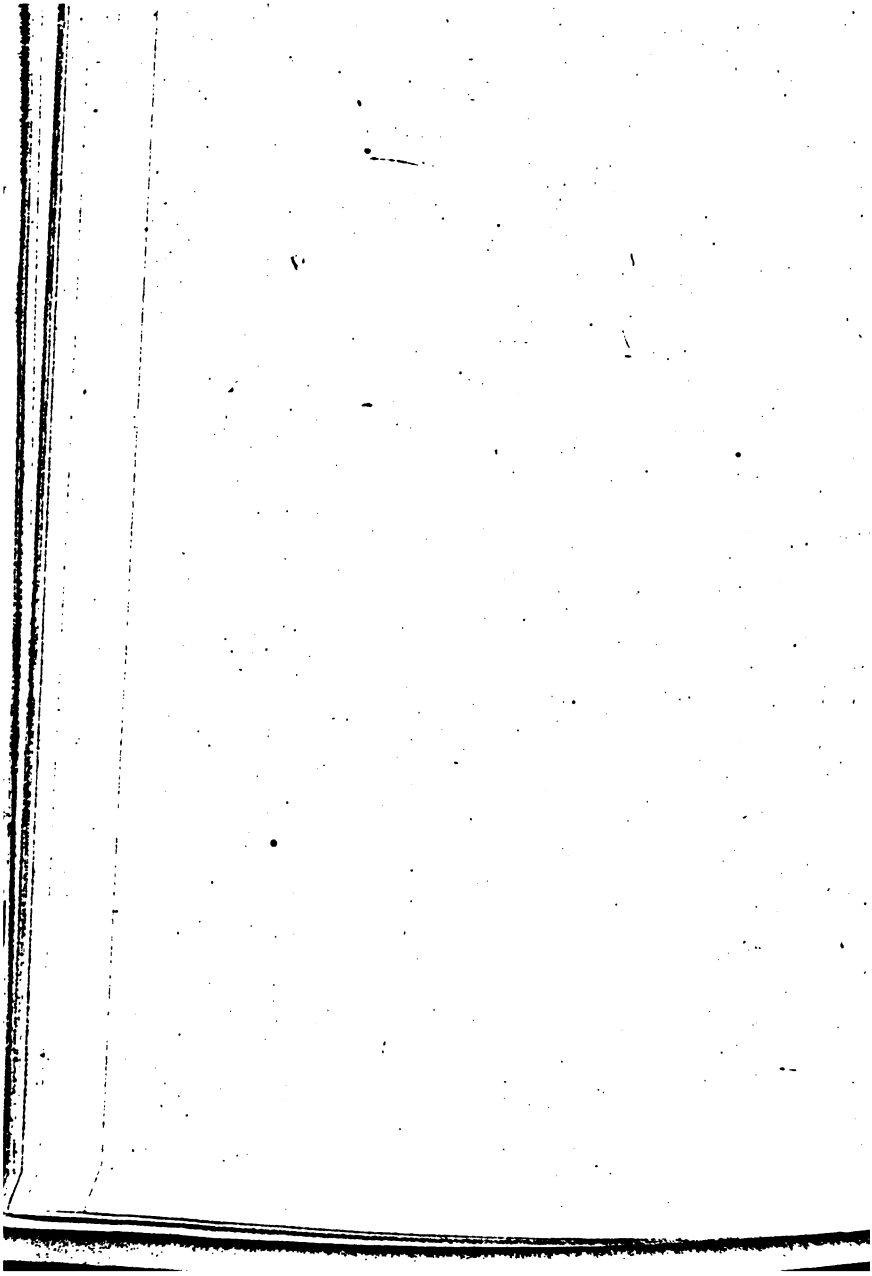
It was reported as emitting smoke and vapour in 1839, and in 1847, at the time of the great Sitka earthquake, flame and ashes came from its summit.

The ascent of Mt. St. Elias offers the longest snow-climb in the world outside of arctic or antarctic regions. The line of perpetual snow is at 3,000 ft. Fuel and supplies must be carried from the start, and weeks spent in tents on the ice.

The members of the Topham Expedition were all experienced Alpine Club climbers, and were first to stand on Mt. St. Elias slopes. They


SKETCH MAP
OF
MT ST ELIAS REGION
Route of Nat. Geog. Soc. Expedition of 1890
1891
Moraines
Forests
Glaciers
Variation of Compass
1891
HUBBARD
ROBINSON HILL
SEATTLE
BAY


MT LOGAN
MT ST ELIAS
MT HUXLEY
MT NEWTON
AUGUSTA RANGE
SAMOVAR HILLS
ROBINSON HILLS
M A L A S P I N A
G L
P A C I F I C O C



ascended from Icy Bay to the rim of the crater on the S. E. side, a point 11,460 ft. by aneroid measurement. Mr. Williams, of New London, the only American of the party, left a tin box containing a United States flag as a record at that point. The expedition of the National Geographic Society of 1890, under Prof. I. C. Russell, crossed Yakutat Bay and reached a height of 9,500 ft. on the E. face of the mountain on the *Newton Glacier*. In 1891 Prof. Russell was sent again by the same society. Six lives were lost in landing in the surf at Icy Bay, and Prof. Russell reached the elevation of 14,500 ft. on the N. side of the mountain, when driven back by storms and scarcity of provisions. He explored the plateau of the *Malaspina Glacier* from Icy Bay to Disenchantment Bay on the return.

The observations of the U. S. Coast and Geodetic Society party in 1892 were for the purpose of continuing Messrs. Turner and McGrath's work on the international boundary line, and establishing the longitude of Mt. St. Elias. It is now definitely accepted as within the United States lines, and as a natural corner-stone or monument sufficiently marking the line of the 141st meridian.

The full accounts of the later expeditions to Mt. St. Elias since 1867 will be found in the following publications:

KARR, H. W. SETON. "Shores and Alps of Alaska." London: Proceedings of Royal Geog. Soc., London. Vol. IX. 1887.

KERR, MARK B. Scribner's Magazine, March, 1891.

LIBBEY, Prof. WILLIAM, JR. Bulletin Am. Geog. Soc., New York, 1886.

RUSSELL, Prof. ISRAEL C. Century Magazine, April, 1891, and June, 1892. Natl. Geog. Soc. Magazine, Washington, D. C., May 29, 1891. Am. Journal of Science, March, 1892. Thirteenth Annual Report, Director of U. S. Geol. Survey, 1892.

TOPHAM, H. W. Alpine Journal, London, August, 1889.

WILLIAMS, WILLIAM. Scribner's Magazine, April, 1889.

WOOD, C. E. S. Century Magazine, July, 1882.

Continental Alaska.

While the steamer waits at Yakutat, there is in full view the magnificent line of the St. Elias Alps towering in the sky above the low, green forest land. Upon leaving, the ship skirts along the front of the *Malaspina Glacier*, which borders the ocean for more than 60 miles, with the sea breaking fully on its ice-cliffs in places. Mt. St. Elias, Mt. Cook, and Mt. Vancouver are easily distinguished by their great height. There is no break in the mainland mountain panorama from Edgecumbe to Makushin, 1,250 miles, and in this respect the voyage is unparallelled.

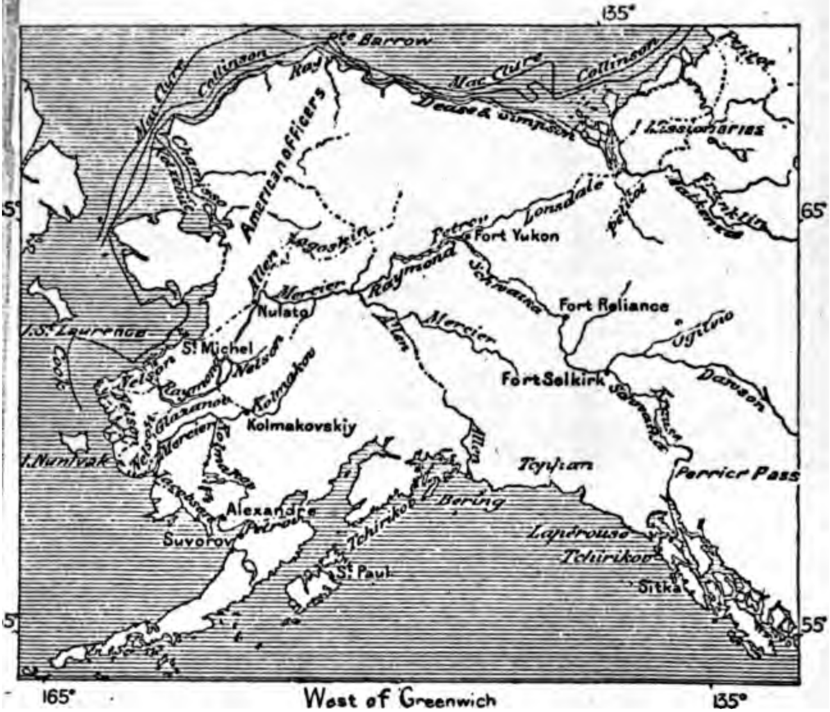
The **Copper River** region was believed to be an El Dorado by the Russians, but their efforts to explore it failed. Rufus Serrebrennikof and his men were murdered before they had explored the river's mouth.

General Miles's first expedition under Lieutenant Abercrombie, U. S. A., in 1884, failed to ascend the river and come out by the Chilkat country. A second expedition, in 1885, was led by Lieutenant H. T. Allen, U. S. A., who ascended the *Copper*, crossed the divide to the *Tenana*, sailed down that stream to the *Yukon*, and explored the *Koyukuk* River before returning to San Francisco *via* St. Michaels. His report (Forty-ninth Congress, second session, Senate Executive Document, No. 125) gives a detailed account of the trip; of the magnificent *Miles Glacier*, which fronts in ice-cliffs for 6 miles on the banks of Copper River; of *Wood's Cañon*, 40 yards wide, with perpendicular walls; and of the smoking cone of Mt. Wrangel, which he reduced from fabled height to an actual 17,500 ft. No mountains of pure copper were found, nor anything to induce others to run the risk of starvation in the almost uninhabited country. In 1891 Lieutenant Schwatka and Dr. Hayes came out to the sea by Copper River, after their great circuit of the interior from Taku Inlet to the Yukon and White rivers.

Prince William's Sound and its Great Glaciers.

Nuchek, or Port Etches, is at the entrance of Prince William's Sound, as Captain Cook named the Chugach Gulf when he keeled and mended his ships at Snug Corner Bay, 1778. Shelikoff came in 1783, and Baranof built the ships that took his first expedition to Sitka. The Russian trading-post was known as the Redoubt Constantine, and the furs of the Copper River country are brought to Nuchek, where there is a salmon-cannery and trading-post. In 1892 the Victoria sealing fleet rendezvoused off Nuchek to meet their supply steamer *Coquitlam*, revictual, and transfer their catch of Pacific sealskins before venturing into Bering Sea. Captain C. L. Hooper, with the revenue cutter *Corwin*, surprised them in the act, and the *Coquitlam*, with her valuable cargo, was seized and taken to Sitka for a violation of U. S. revenue laws in transferring cargo without authority of the customs district.

The Chugach Alps surrounding Prince William's Sound hold some of the grandest scenery of the Alaska coast, and the *tide-water glaciers* in the recesses of the sound even surpass those of southeastern Alaska. Vancouver describes the gloomily magnificent sound, and Mr. Whidby felt the ground shake when 6 miles away from the falling ice. Prof. Davidson had a glimpse of the ice falls in 1867, and Russian offi-



Scale 1 : 22,000,000. ———————— **680 miles.**

Chief Routes of Alaskan Explorers.

cers told him of one glacier that showed a peculiar rose-red tint in a certain light. Dr. Dall visited the sound in 1874, and declared the glacial landscapes the finest of their kind. Mr. Seton-Karr makes reference to them in his "Shores and Alps of Alaska." The dangers of navigation deter large vessels from attempting cruises in the unsurveyed waters, and the floating ice menaces canoes, so that the number, size, movement, and general features of these Chugach ice streams await exploration.

Cook's Inlet and the Kenai Peninsula.

Cook's Inlet extends inland 160 miles between the Alaska or Chignik range and the mountainous Kenai Peninsula. Sheltered by the great barrier on the west, its shores enjoy a different climate from any of the coast region south of it, and the warm, cloudless summers won Cook's Inlet the name of the Summer-land from the Russians. The best agricultural land lies along the Kenai shore of the Inlet, and the Russian company established five colonies of their pensioners in this garden spot, where they raised crops and cattle, and still continue to do so.

The Inlet is renowned for its scenery, which Captain Cook was first to extol. He discovered the great estuary during his search for a passage to Hudson Bay, passing the south point of Kenai Peninsula on the birthday of the Princess Elizabeth, May 21, 1778. The mainland point, 40 miles across from this *Cape Elizabeth*, was named for Dr. Douglass, Canon of Windsor. Captain Cook took possession in the name of His Majesty, and buried coins and records in a bottle at Possession Point at the head of the Inlet, and Vancouver searched for these records in vain. Cook did not name the place on his map, referring to it as the Great River in his text. Lord Sandwich wrote in "Cook's River" after the great navigator's death. Cape Elizabeth is 550 miles from Sitka and 1,670 miles from San Francisco.

Coal-Fields.—Portlock mentioned the coal-veins in Graham or English Harbour, near Cape Elizabeth, in 1787, and the Russians afterward worked them on a considerable scale, and exported much of this lignite to California previous to the discovery of the Vancouver coal. Tramways, stone piers, and decaying buildings are memorials to the immense sums sunk by the Russian company and some San Francisco merchants who shared in the enterprise at Coal Harbour in Chugachik or *Kachemak Bay*. Recently, interest in these coal-mines has been revived, and also in the old works near Fort Kenai, where the equal of Nanaimo coal was promised.

Fort Kenai, the old Redoubt St. Nicholas, was garrisoned by U. S. troops for a few years after the transfer. There are two trading stations and three canneries in the Inlet, and king salmon weighing 100 pounds are often caught. Gold was found in small quantities by a

Russian engineer in 1855, and prospectors are camped at many places along shore every summer.

The Volcanoes.—Cook's Inlet is the finest Alaskan pleasure-ground for scientists, sportsmen, anglers, artists, and yachtsmen, and its climate enhances all attractions. A chain of active volcanoes extends along the W. shore. **Iliamna**, the great volcano of the Inlet (12,066 ft.), was named Miranda, the Admirable, by the Spanish navigators. It is snow-clad, but steam and smoke issue from two craters near the summit, and when arrested for any time frequent earthquakes are felt. Iliamna was ascended by a party sent from the Imperial Academy of Sciences at St. Petersburg in 1852, and by several parties of U. S. officers while the garrison was maintained at Fort Kenai, 40 miles distant across the Inlet. There was an eruption in 1854, and in 1869 climbers found running lava near the lower crater, a vast oval bowl full of sulphur crystals, and were driven from the upper crater by the volumes of dense black smoke. Many hot springs occur on the slopes, and the heat furnishes a luxuriant growth of trees in the valleys and ravines. The natives have many superstitions concerning it.

Goryalya, or the **Redoubt** (11,270 ft.), stands N. of Iliamna, and smokes and steams on a lesser scale. It was in eruption in 1867, and ashes fell to a depth of one inch and a half on Kadiak Island, 165 miles away.

Augustin, on an island near the mouth of the Inlet, is a symmetrical cone whose fires are extinct.

A trail leads from the native village in Kamishak Bay, S. of Iliamna, for 7 miles through a gap in the mountains to a chain of lakes discharging at the end of 15 miles into Iliamna, the largest lake in Alaska. **Iliamna Lake**, 90 miles long and from 30 to 40 miles wide, is an inland reservoir or hatchery of king salmon, who use the Kvichak River as their highway to Bering Sea. This chain of watercourses and the short portage are used by hunters who come over from Bristol Bay to the sea-otter rookeries along the Cook Inlet and Shelikoff shores.

Either shore offers unlimited opportunities to sportsmen. The only herds of wild reindeer remaining in Alaska are in the regions along the Alaskan and Kenai ranges. The big brown bear of Cook's Inlet has world-wide fame, and these monsters are the great prizes of native hunters. Moose, caribou, mountain-goat, mountain-sheep, and deer are found. There are many trout streams besides the salmon

rivers on the E. shore, and wild fowl haunt the marshes in that same region.

The finest waterfalls in Alaska leap from the cliffs along the Inlet, and the alternation of snow-peaks, volcanoes, forested slopes, and fertile prairies continually charm the eye. There are glaciers in the mountains on either shore of the Inlet. Those facing the Kachemak Bay coal-mines were explored and named by the Russian scientists in 1852, and their map showing the *Grewingk*, the *Wosnessenski*, the *Doroshin*, and the *Süd* glaciers is included in the Gletscher-Karte, of Berghaus's Physikal Atlas.

TIDES.

The Inlet is swept by tremendous tides, and there are strong tide rips at the entrance and at the *Forelands* beyond Fort Kenai. In *Turnagain Arm*, or Resurrection Bay, there is a tide fall of 20 and 27 ft., and the tide enters in a huge bore or wave. Expert canoemen take advantage of and ride the bore safely, and are swept rapidly on their way by its aid.

The natives, the Chugachs, like the inhabitants of Prince William Sound, are Indians of Athabascan stock. They are not a canoe people, and differ as much from the Tlingits on one side as from the Esquimaux on the other.

Kadiak and the Great Salmon Canneries.

The dense forests of the Northwest Coast finally cease at the line of the Kenai Peninsula, and there are but scattered groves on the Kadiak Islands. Beyond that line the shores are covered with grasses, shrubs, and thick mosses, that, freshened by perpetual fog and rain, are so brilliantly and intensely green as to dazzle the eye. The dug-out canoe disappears at this forest edge, and boats of sea-lion or walrus hide stretched over driftwood frames replace them. The *bidarka*, a narrow shell pointed at either end, carries one or two men, who sit each in a small hatch furnished with an apron that fastens around his body, and these bladders ride the roughest seas safely. Women and children are even packed beneath the oarsmen's feet for short voyages. Lutke called these bidarkans the "Cossacks of the sea," and Billings wrote, "If perfect symmetry, smoothness, and proportion constitute beauty, they are beautiful beyond anything that I ever beheld." They have also the *oomiak*, or large open walrus-hide boat, as a family and trading canoe, and these two craft, with slight modifications, are in use from Kadiak around to the arctic coast.

In 1850 three Russian sailors deserted from Kadiak and reached Shoalwater Bay, Wash., in bidarkas. In 1884 two Danes went from Kadiak to San Francisco in a bidarka 19 ft. long, making the 1,600 miles to Victoria in 105 days' paddling, with frequent camps at night along the coast. In 1892, a 12-ton schooner was blown off Karluk in a storm, and the one man navigated the 2,000 miles to San Francisco in 20 days, a feat which matches the bidarkans' record.

Lisiansky was told that the Kadiak Islands were once separated by only the narrowest pass from the peninsula's shore. A huge Kenai otter attempted to swim through and was caught fast. Its struggles widened the Shelikoff Strait, and pushed Kadiak out to its present possession. By tradition, the original inhabitants were descended from a dog. There is one legend of a man and a dog being set adrift on a stone that finally turned to an island. Another tells that the daughter of a great chief living north of "the peninsula of Alaxa" was banished in wrath with her dog husband and whelps. The dog tried to swim back but was drowned, and the pups fell upon their grandfather, tore him to pieces, and ruled in his stead. Lisiansky found the Kadiakers in the lowest stages, sitting on the roofs of their sod huts or on the beach, like herds of animals, gazing at the sea in stupid silence. The want of oral intercourse proved their estate, but the courteous explorer said that "their simplicity of character exceeds that of all other people." He built ice hills for the Christmas of 1804, the Aleuts and Kadiakers went crazy over tobogganning, and the natives came from the farthest points to watch.

Afognak, the northern island of the group, was declared a Fish and Timber Culture Reserve, by Executive proclamation of December 24, 1892.

The steamer calls on both E. and W. trips at the headquarters of the N. A. C. Co. for the Kadiak region on **Wood Island** near St. Paul. The furs of Copper River and the Kenai region reach those warehouses. There are large ice-houses on the island, whence cargoes were shipped to San Francisco previous to the perfecting of the ice-machine. The owners of the latter paid the Kadiak company a subsidy to withdraw from competition, but ice was regularly stored year after year, and the agent ruled patriarchally over a model village, virtually surrounded by a park and game preserve.

St. Paul (population, 495), on the N. E. shore of Kadiak Island, was the first headquarters of Shelikoff's and Baranof's fur-trade, and, as their early capital and older home, was the boast of the Russians in Sitka's better days. It is the headquarters of the A. C. Co. in this region, and furs to the value of $300,000 are shipped yearly. There was a garrison of U. S. troops here for a few years after the transfer.

The Greatest Salmon Stream in the World.

Karluk is another important port of call on both trips of the mail steamer. Two-thirds of the entire salmon pack of Alaska are furnished by the ten canneries on the Kadiak Islands, which are almost entirely supplied from the Karluk River. This stream, on the W. coast of Kadiak, is 16 miles long, from 100 to 600 ft. wide, and less than 6 ft. deep. These figures give the dimensions of the solid mass of salmon that used to ascend the Karluk to a mountain lake before canners came with traps and gill-nets in 1884. The largest cannery in the world is at Karluk. There were 1,100 employés altogether at the Karluk canneries in 1890, and over 200,000 cases of 48 one-pound tins contained the 3,000,000 salmon packed. A single haul of the seine has beached 17,000 salmon, yet each ebb tide then left thousands of stranded fish to die on the banks and bars. The canners enjoy their monopoly without tax, license, or any Government interference. The nearest civil official is the U. S. Commissioner at Unalaska, 700 miles away, or the customs deputy at Sand Point. Stores, employés, and pack are conveyed to and from San Francisco in the canners' own vessels, and the hundreds of Chinese, Greek, Italian, Portuguese, and Americans constitute the most untrammelled communities anywhere under one flag from May to September of each year. There is much agricultural land on these islands and cattle graze the year round, the thermometer never recording zero, and snow lying on the ground but for a short time.

The Shumagin Islands and the Cod Fisheries.

Bering landed on this group in 1741 to bury Shumagin, one of his crew; and Steller, the naturalist, who accompanied that expedition and first classified the Pacific fishes, mentions the cod. Captain Cook and other navigators referred to the cod; and Senator Sumner laid great stress on the value of these cod banks in his farewell speech, thereby causing several New England cod-fishing communities to protest against the purchase of Alaska. Prof. Davidson reported the Shumagin cod banks—since named the Davidson Banks—in 1867, and twenty years later the Fish Commission steamer *Albatross* began its work of sounding and mapping the banks on either side of the Aleutian Islands. Over 10,000 square miles of cod banks were surveyed in three years. *Popoff Island*, opposite Unga, is the headquarters of the cod-fishing fleet, and there are large warehouses at *Humboldt Harbour* and *Pirate Cove* for salting and storing fish. The industry is conducted by San Francisco

fish-dealers, and the cod are taken there to be cured. The dry California climate is said to be the reason for that process not resulting as satisfactorily as on the Atlantic coast. A colony of Gloucester fishermen rounded the Horn after the troubles on the Great Banks in the Atlantic, and many others have followed, but the immediate profits of sealing overshadow cod-fishing for the time being. The extinction of the fur seal will give the cod-fisheries a greater following and importance; men will depend upon more certain wages and employment, and cod will increase in numbers, as each seal is said to consume in one summer cod equalling in value the price of a raw sealskin. The pack of Shumagin cod for 1890 was valued at $500,000, and for all the seasons from 1867 to 1890 at a total of more than $3,000,000.

A *coal-mine* on Unga Island furnishes fuel for local consumption here and around Kadiak, and the *Apollo Gold Mine*, on the same island, has been a paying concern from the start. The outer shores of the Shumagins are haunts of the sea-otter.

The Aliaska Peninsula.

From Cook's Inlet to the beginning of the Aleutian chain the E. shore of the Aliaska Peninsula is a precipitous mountain range rising abruptly from the sea. These dangerous shores are haunts of the sea-otter, and in several places salmon streams connect with mountain lakes. There are canneries and trading stations at Chignik Bay, Wrangell, Portage, and Pavloff Bays. A railway 13 miles in length connects *Portage Bay* with *Herendeen Bay* and the Bering Sea shore, and brings coal from the mines owned by the Alaska Commercial Company to shipping wharves. This is regarded as the most valuable coal deposit in southern Alaska.

Belkofsky, at the foot of the volcano Mt. Pavloff, is the centre of the sea-otter trade. The village of 185 people maintains a handsome Greek church, and there is a Government school.

A century ago sea-otters were plentiful along all the Alaskan coasts, but persistent hunting has nearly exterminated them, and they now take refuge on the stormiest and most dangerous shores, and live in beds of floating kelp. The hunters lie in hiding on the rocks for days in order to creep upon or surround their game, or they may happen upon an otter while it sleeps floating on the water. Only natives were allowed to hunt otter, and firearms were thus prohibited on the otter-grounds until 1878, when the Secretary of the Treasury allowed white men married to native women to be considered natives in regard to the privileges of hunting, which "put otters at a discount and women at a premium."

The native spear and arrow are no longer used. Steamers and schooners carry contract hunters to the best otter-grounds, where they camp until called for by those vessels. All the tide-water shores from Prince William's Sound to the Aleutian Islands are otter-grounds, and the peninsula coast near Belkofsky, the outer Shumagins, and the Sannakh Islands are the richest grounds. Otter-skins have increased enormously in value, and a single one of these purplish-brown pelts sprinkled with delicate silver-tipped hairs is worth from $150 to $300. It is the court fur of Russia and China, and at one time laws prevented commoners from wearing it.

The Aleutian Islands.

The seventy islands of the Aleutian chain lie like natural stepping-stones from the point of the Alaska Peninsula for 1,000 miles toward the Kamchatka shore, and Attoo, the last in line, lies beyond the one hundred and eightieth meridian and within the Eastern hemisphere. They are of volcanic origin, and many craters still smoke along the chain. Only one island, *Unalaska*, contains a white settlement; and only one island, *Amchitka*, is seen from any established route of commerce. The Canadian Pacific steamships often sight the low, green shores or see the reflected glow of the volcano on Amchitka on their course from Vancouver to Yokohama. They are natural stations for the proposed trans-Pacific cable route from British Columbia to the terminus of the Siberian Great Northern telegraph lines.

The islands are treeless, but covered with grass and mosses, and in summer with a wealth of wild flowers. They are capable of cultivation, and afford excellent pasturage. The temperature varies little from Sitka's averages, and fog and rain are almost constant during the summer. "The wolf's long howl" is not heard, but several islands are blue fox reserves, and great care is taken to increase and improve the quality of pelts from such preserves. Over two hundred blue fox skins are shipped from Attoo each season. Cod banks border the islands, and salmon and herring swarm, yet through improvidence the natives of some remote villages barely manage to exist through the winters.

The Aleuts numbered but 800 altogether in 1878. They are now of mixed Russian descent, but the original Aleuts were a gentle, intelligent people when impressed by the first fur-traders, and in their speech and customs showed resemblance to the Ainos of northern Japan. Bering literally enslaved them, took 1,500 Aleut hunters with their families to Sitka in 1804, and often leased them under contract to British and American traders for otter-hunting on the lower coast. Their dome-like underground houses and the native queue have been sufficient reason for their rapid decline in numbers. Despite the introduction of foreign liquors, only one murder was committed by Aleuts in fifty years.

They are quick to improve educational advantages, and Aleut women of the better class possess many accomplishments. The older women weave exquisitely fine baskets, cigar-cases, etc., from the dried grasses and fibres, but the supply of this work diminishes each year.

Unimak Island, the first of the Aleutians, contains two volcanoes, **Shishaldin** (8,953 ft.), and *Pogromnaia*, or Destruction (5,525 ft.). Shishaldin is the most symmetrical and perfect cone along the whole "Pacific Ring of Fire," tapering evenly from sea-level to the sharpest point, from which a smoke pennant always floats. The sea beats at its base, and the snowy cone retains its white covering to within 2,000 ft. of the surf the year round. It was in eruption in 1826, and in 1827 opened a new crater and rained ashes far and wide. The perpetual mist and vapour in the atmosphere defeat photographers' efforts to secure sharp negatives from a moving ship.

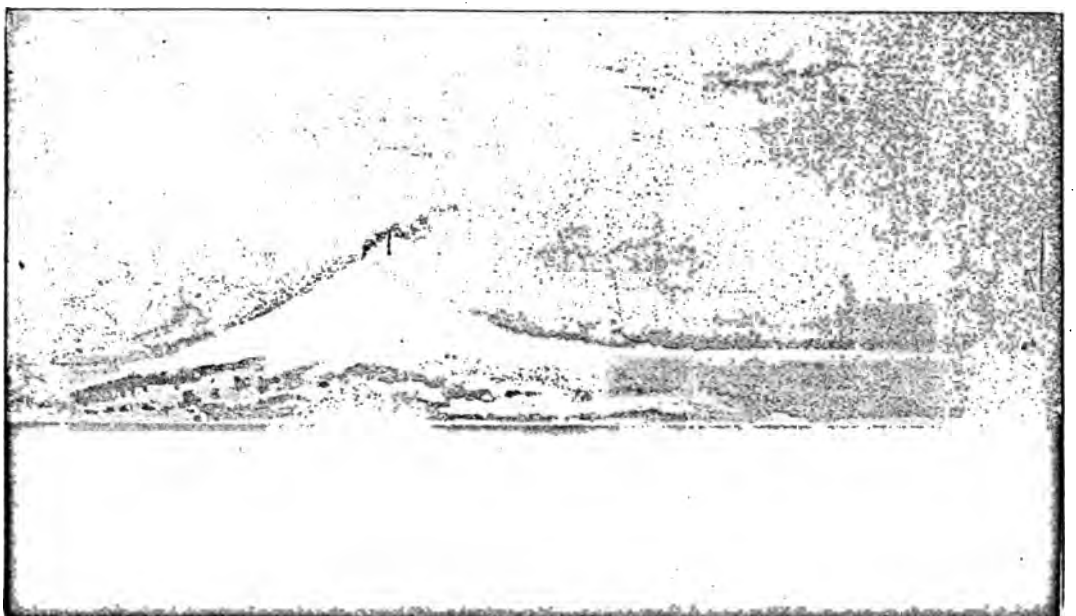
Unimak Pass and *Akutan Pass* are the usual ships' entrances to Bering Sea. Between the two lies the island holding the volcanic peak of *Akutan*, 3,988 ft. in height.

Unalaska, the most important island of the Aleutian chain, is mountainous throughout, with the volcanic mass of *Makushin*, 5,961 feet, at its northwest end.

Dutch Harbour, on the north shore, fronting Akutan Pass, is the headquarters of the North American Commercial Co., and tourists by their mail steamer from Sitka wait here while the vessel refits for the return cruise.

Captain Cook twice repaired his ships at this harbour in 1778, and here met Ismyloff, commander of the Russian factory on the other side of the island. He gave the great navigator much information as to local names, which the latter received with caution. Here Cook wrote: "They (the Aleuts) call it by the same name Mr. Staehlin gives to his great island, that is *Alaschka*. Stachtan Nitada, as it is called on the modern maps, is a name quite unknown to these people, natives of the islands, as well as Russians, but both of them know it by the name of America." Then later Cook wrote: "I have already observed that the American continent is here called by the Russians as well as by the islanders *Alaschka*, which name, though it properly belongs only to the country adjoining Unimak, is used by them when speaking of the American continent in general, which they know perfectly well to be a great land."

Iliuliuk, "the curving beach," more commonly known as **Unalaska**, population 317, one mile below Dutch Harbour, is port of entry for all ships passing in or out of Bering Sea and the metropolis of all the region "to westward." The U. S. commissioner and deputy-col-



Mt. Shihaldin.

lector reside here. The Greek church is second in size and importance to the cathedral at Sitka, and the bishop for a time resided here. Besides the Russian parish school, there are a Government day-school and a Methodist mission. It is headquarters for the Alaska Commercial Co., which occupies the old fort of the Russian Company. The ships of the Pacific arctic whaling fleet call here for water, coal, supplies, and mail, transship cargo, leave and receive news of the ice line, the position, and catch of each whaler. In 1891, 1892, and 1893, during the *modus vivendi*, it was headquarters of the United States and British fleets engaged in the Bering Sea patrol, and lines of captured sealers often waited at anchor.

There is direct communication with Sitka, 1,250 miles, by monthly mail steamer, from April to October, and frequent communication with San Francisco, 2,100 miles, by traders' supply steamers, which take passengers under certain conditions.

Excursions from Unalaska.

Mrs. Shepard's "Cruise of the Rush" shows how agreeably time may be passed on this northern isle, and suggests minor excursions to the miniature forest, the waterfall, and the cave near Dutch Harbour. The wealth of wild flowers carpeting all the hillsides is the delight of every visitor, and none weary of the beautiful harbour and the landscape wealth around. Those travelling by the Sitka steamer will find themselves the guests of the N. A. C. Co. at their Dutch Harbour establishment, and every arrangement is made for those wishing to hunt, fish, botanize, or climb.

Bogoslov volcano, with its sea-lion rookeries, is the great point of attraction, and a day's excursion to this island of St. John the Theologian is included in the tour from Sitka by the N. A. C. Co.'s vessel. It lies in Bering Sea some 40 miles W. of Unalaska harbour, and rose from the waters in 1796 after a day of rumbling, thunder, and violent explosions, accompanied by much sulphurous gas and dense smoke. The rocky mass grew after a similar demonstration in 1805. It continued to grow for a quarter century, often showing a light at night and darkening the sun with its smoke by day. There were disturbances in 1883, the year of Krakatoa's great eruption, and showers of fine ashes fell from concealing clouds that finally lifted and disclosed a second peak joined to the first by a sandy isthmus. Ship Rock, 86 ft. high, stood on the isthmus. The earthquakes of 1889–'90 left only a thread

of this isthmus, and in 1891 it had sunk beyond soundings, Ship Rock had wholly disappeared, and a new peak was in action. The upper parts of these peaks have been too hot for one to climb, and the intense heat and steam are rotting away the rocks, that drop continually. Sea-lions swarm on the rocks and ledges along shore, and myriads of birds have their nests on the warm rocks. A landing is usually made and opportunity given for all to gather specimens and souvenirs of the visit, cook eggs over the steam-jets, and put the volcano to other practical uses.

Opportunity sometimes offers for a circuit of the island by sea, and is an excursion much enjoyed. **Makushin Harbour**, on the W. coast, where Glottov and his Russians first landed in 1757, is some 30 miles from Unalaska. The great mountain is easily climbed from that side. Prof. Blake, Lieutenant Hodgson, and Dr. Kellogg, of Prof. Davidson's expedition, climbed **Makushin**, 5,961 ft., September, 1867, and found "a crater 2,000 ft. broad by estimate, and filled with snow, in the north-western portion of which was an orifice giving vent to clouds of smoke and sulphurous fumes."

The volcano of *Vsevidoff*, 8,000 ft., on Unimak Island, S. W. of Unalaska, attracts attention. *Borka*, on the little island of the same name at the N. E. end of Unalaska Island, is an Aleut village of as extraordinary neatness and cleanliness as the show villages of Holland.

The Bering Sea and Shores.

The Nushegak and Kuskokvim Rivers.

Bering Sea was described by Prof. Davidson as "a mighty reservoir of cod," and a large cod bank extends all along the W. side of the great peninsula. The Nushegak River reaches the sea at *Bristol Bay*, on whose shores are four large salmon canneries, and the king salmon of the Kvichak and Nushegak average from 40 to 60 pounds' weight. On this side of the peninsula all the coast people are Innuits or Esquimaux (*ees qui miaux*), differing entirely from Aleut, Tlingit, and the Tinneh or Athabascan tribes of the interior. They live in underground huts, wear the loose *parka* or hooded smock, and skin boots, and use dogs as draught animals. The Russians made few attempts and had no success in civilizing or Christianizing them. There is now a Moravian mission at Carmel on the Nushegak, and one at Bethel on the Kuskokvim, with Government contract schools at both places.

Kuskokvim Bay is the Fundy of this coast, the tide rising 50 and 60 ft., and rushing in in a great bore or wave. The Kuskokvim is the second great river of the Territory, and navigable for 900 miles from

its mouth. Well-populated Esquimaux villages line its banks, and the natives have an abundant food supply in the salmon, white-fish, seals, and beluga, or white whale. Prospectors have found gold on all these Western rivers, and the fur-trade is considerable, the Kuskokvim country furnishing the finest black bear skins in Alaska.

The Pribylov or Seal Islands.

These four volcanic islands lie 220 miles N. W. of Unalaska, veiled in perpetual mists and fogs of the summer season, and ringed round with drift ice in the winter. They are treeless, covered with moss and grass, and brilliant wild flowers in their season. The odours of the rookeries, where hundreds of thousands of seals gather annually, and the slaughter-grounds, where millions of seals have been killed for a century, is perceived far at sea, and, with the barking of the animals, are often the mariner's only guide in those dense and protracted fogs. Only Government vessels are allowed to approach or enter the harbours.

St. Paul, the larger island, is 12 miles long and from 6 to 8 miles wide, and its village is the headquarters of the N. A. C. Co., leasing the seal fisheries. **St. George**, 30 miles N., is a little smaller, and between them lie the tiny Otter and Walrus Islands. The 400 Aleuts inhabiting the islands are gathered in tidy villages, with Greek churches and school-houses. The islands are a Government reserve, and are leased for terms of twenty years by the U. S. Treasury Department. For over a century they have yielded more wealth than any gold-mine, but with the settlement of the Northwest Coast their prosperity has diminished, and the seals will be exterminated as ruthlessly as those of the antarctic.

For forty years Siberian traders hunted for the fabled island of Amik, where they believed the "sea bears" lived. In 1786 Gerassim Pribylov heard the barking through the fog and found the fur-seals' summer home. Two million seals were killed within a year, and the reckless slaughter so nearly exterminated the herds that Resanof ordered killing stopped for five years, when the rookeries regained their numbers. Baranof used the Pribylovs as a bank. The sealskin, then valued at $1 Mexican, was the unit of currency, and regularly taken in payment for any commodity by American traders, who exchanged them at Canton for silk and tea. In 1835 the islands were ringed with ice into midsummer, the seals could not land, and the pups born in the surf died with their mothers. The herd was again nearly extinct, and Baron Wrangell stopped the killing until the rookeries had regained

their numbers. Sir George Simpson (1844) found the company taking 200,000 and 300,000 skins annually, and the market so overstocked that the skins did not pay for carrying. In similar situations before as many as 700,000 and 1,000,000 skins were thrown into the sea to keep prices up, and in Baranof's time improperly cured skins were thrown away in as great numbers.

THE SEAL ISLAND LEASES.

The value and importance of these islands were not appreciated at the time of the transfer. No protection was afforded in 1868, and seven concerns enjoyed free sealing that season. In 1869 they were declared a Government reserve and guarded by soldiers, and in 1870 the islands of St. Paul and St. George and the seal-fisheries were leased for twenty years to the Alaska Commercial Co., of San Francisco, which had previously bought all the buildings and the good-will of the Russian American Fur Co. throughout Alaska. They were permitted to kill 100,000 seals each year, 80,000 on St. Paul and 20,000 on St. George, for an annual rental of $55,000, a tax of $2.62½ on each skin, and 55 cents on each gallon of seal-oil. The lessees furnished fuel and certain rations to the Aleuts, provided schools and medical care, and paid them 40 cents for each skin taken. A special Treasury agent resided on the islands each season to protect Government interests, and guards prevented any killing on Walrus or Otter Islets. At the expiration of their lease the A. C. Co. had paid $5,956,565.67 to the Treasury, or 4 per cent interest on the sum paid for all Alaska.

The A. C. Co. was believed to have divided from $900,000 to $1,000,000 profits each year between 12 original stockholders. Holding also the lease of the Comandorski Islands from Russia, they controlled the sealskin supply of the world; and having 36 other trading stations in Alaska, they monopolized land furs as well. Salmon canneries and coal-mines added to the profits of this most remarkable commercial company, whose preserves were not invaded nor monopoly threatened until toward the end of the Pribylov lease. By their management salted sealskins rose in value from $2.50 to $3 in 1868, to $10 and $18 in 1884, and to $30 in 1890.

In 1890 a twenty-year lease was awarded to the North American Commercial Co., of San Francisco, for an annual rental of $100,000, a tax of $9.62 on each 100,000 skins taken, the islands then to return over a million a year to the Government, or 14 per cent on Secretary Seward's investment. Pelagic sealing and rookery raiding by the Victoria fleet had so diminished the herd that the lessees were only permitted to take 20,000 skins the first season, and for three seasons while the seal question was a matter of diplomatic discussion only the few seals sufficient for a food supply for the natives were killed.

CALLORHINUS URSINUS, THE FUR SEAL.

For half the year the Aleuts and foxes have their islands undisturbed. In May the "sea bears" swim through the Aleutian passes after a six months' circuit of a kite-shaped track whose lower loop is

in the latitude of Los Angeles. They are followed as they sweep close along the Northwest Coast by the increasing fleet of sealing schooners, whose hunters secure about one seal out of ten shot. At the rookeries, polygamous families herd in little groups on the rocks, and the patriarch stays at home with the little black pups all summer, while the mother seals swim even 200 miles in search of their daily 10 and 20 pounds of cod or salmon. They are timid creatures, and at any strange noise they rush to the water. The keeping of a pet dog lost one Russian manager $100,000 in one season by the depopulation of a rookery. No fire-arms, whistles, or bells are allowed on the island.

The seal's fur is in best condition immediately on arrival, but he assumes a new coat in August, which is in fine condition when about to leave at the end of September. Only male seals from two to four years of age are killed. These bachelors herd alone, and the Aleuts running between them and the water in the early morning drive them slowly to the killing-ground, where they are despatched by a blow on the head, quickly bled, and the skins taken to the salting-house. Except as the Aleuts make use of the flesh and blubber, the carcass goes to waste. The cool, moist climate prevents these killing-grounds from causing an epidemic, and by the next spring the hollow, bird-like bones are lost in the grass and earth.

The salted skins are sent to London, the fur-market of the world, auctioned off, and prepared for use. These perfect "Alaskas" command first price, and "Victorias"—the poachers' riddled, torn, and slashed skins—inferior prices. Seven London firms, employing some 10,000 workmen, finish sealskins at a cost of 7 shillings each. No machines have been able to supplant the many hand processes requiring the greatest skill and nicety. The skins are worked in sawdust, cleaned, scraped, washed, shaved, plucked, given from 8 to 12 coats of dye with a hand-brush, washed, and freed from any remaining grease by a bath of hot sawdust or sand. The Chinese began plucking and dyeing fur-seal over a century ago to furnish an imitation of sea-otter. French furriers have insisted on the darker dyes, but the strong nutgall and acid render the skins less durable than when dyed to the bright brown of 30 years ago. Finished skins pay a duty of 20 per cent on re-entering the United States.

THE BERING SEA QUESTION.

As sealskins rose in value and the seafaring population increased on the Northwest Coast, pelagic sealing and poaching had their rise. A first poacher went from San Francisco in 1872. A revenue cutter was soon detailed to cruise in Bering Sea and seize such craft. The sealers then took out British papers and made Victoria their home port, and by 1879 brought in and reported 12,500 skins to the Canadian officials. In 1886 they brought in 38,907 skins; the rookeries were openly raided; three Canadian vessels were seized; the British minister at Washington protested, and the *Bering Sea Question* arose.

In 1887 six Canadian vessels were seized, and in the brief and argu-

ment prepared by A. K. Dulaney, U. S. District Attorney at Sitka, the first formal plea was made that Bering Sea was an inland water, a *mare clausum*—no part of the Pacific Ocean; and that the United States and Russian boundary line from Bering Strait to Attu Island enclosed protected seal waters within which the United States had complete jurisdiction by virtue of rights obtained from Russia.

In 1890 over 100 schooners trailed the Pribylov herd up the coast; and while the lessees of the islands could only take 20,000 skins, 50,000 skins were brought into Victoria. Schooners boldly raided the rookeries, and the Aleuts battled with the crews.

June 15, 1891, after every schooner had cleared from Victoria, Great Britain agreed to the *modus vivendi* proposed by the United States, whereby all sealing in Bering Sea by citizens of either nationality should cease. The joint patrol of gunboats and cutters warned 73 and seized 6 schooners in Bering Sea. Commissioners from the United States and Great Britain visited the islands and met in conference at Washington, in February, 1892. The *modus vivendi* was renewed for another season, and a treaty of arbitration negotiated. The seizure of the supply steamer *Coquitlam* off Nuchek prevented the Victoria fleet from invading Bering Sea to any extent during 1892.

The tribunal of arbitration met in Paris, March 23, 1893. Its members were: Justice John M. Harlan and Senator John T. Morgan, arbitrators for the United States; Lord Hannen and Sir John Thompson, for Great Britain; Baron de Courcelles, for France; Gregers Gram, for Sweden; and the Marquis Venosta, for Italy. Hon. John W. Foster appeared as agent for the United States; Hon. E. J. Phelps, J. C. Carter, Frederick Coudert, H. W. Blodgett, and R. Lansing, as counsel. Hon. C. H. Tupper appeared as agent for Great Britain, and Sir Charles Russell, Sir Richard Webster, Mr. C. Robinson, and Mr. W. H. Cross as counsel.

The arbitration covers the following points:

1. What exclusive jurisdiction in the sea known as the Bering Sea, and what exclusive right in the seal-fisheries therein, did Russia assert and exercise prior and up to the time of the cession of Alaska to the United States?

2. How far were these claims of jurisdiction as to the seal-fisheries recognized and conceded by Great Britain?

3. Was the body of water now known as Bering Sea included in the phrase "Pacific Ocean" as used in the Treaty of 1825 between Great Britain and Russia, and what right, if any, in Bering Sea was held and exclusively exercised by Russia after said treaty?

4. Did not all the rights of Russia as to jurisdiction and as to the seal-fisheries in Bering Sea, east of the water boundary, in the treaty between the United States and Russia of the 30th of March, 1867, pass unimpaired to the United States under that treaty?

5. Has the United States any right, and, if so, what right of protection of property in the fur-seals frequenting the islands of the United States in Bering Sea, when such seals are found outside the ordinary three-mile limit?

Other Islands in Bering Sea.

Less than 300 Esquimaux manage to exist on *St. Matthew* and *St. Lawrence*, and nearly all the inhabitants of the latter island died of starvation in 1878–'79. Polar bears come down to these islands on the ice-floes, and their glossy winter-killed skins, averaging from 12 to 15 ft. in length, bring from $30 to $50 in trade.

St. Michael's, on an island in Norton Sound, 70 miles N. of the Yukon's mouth, is commercial headquarters for the *Yukon* and Arctic regions, and farthest trading-post of the A. C. Co. Miners and freight exchange from ships to light-draught river steamers, as with its many mouths no navigable ship-channel into the Yukon has been found, and bars extend for 100 miles from shore. There are 1,370 miles of navigation between St. Michaels and Forty-Mile Creek, at the crossing of the international boundary line on the Yukon. There are a Swedish mission and school in *Norton Sound*, and a Congregational mission and school at the large Esquimaux village just below *Cape Prince of Wales*.

The Bureau of Education, in order to provide a future food supply for the natives, has established a reindeer farm at Port Clarence, bringing the domesticated animals from the Siberian side and training Innuit boys to care for them.

Bering Strait.

Bering Strait, dividing the continents of Asia and North America, is 36 miles wide between East Cape and Cape Prince of Wales, with the three Diomede Islands standing midway. The shallow water and upward current prevent any great icebergs floating down through this strait, and the ice to northward has rarely been seen to exceed 50 ft. in height above the water. There are no glaciers on either the Bering or Arctic coast, hence no icebergs, but only packs and floes. The *Jeannette* passed through this strait in 1879 and sunk off the Siberian coast; and Nordenskjöld brought the *Vega* successfully through from the Atlantic in 1880. Eugène Sue's Wandering Jew is described as standing on the Siberian promontory and conversing across the waters with the unknown female on Cape Prince of Wales; and telegraph cables and railway bridges have been planned to connect the continents at this point.

In the Arctic Ocean.

The **Arctic Circle** is drawn across the water just above the capes, and the true *Land of the Midnight Sun* is entered. The shores of Kotzebue Sound are the same marsh and tundra, covered with summer wild flowers, as seen along all the coast from the point of the Aliaska Peninsula.

The Pacific Arctic is the last *whaling-ground* left. The Pacific whaling fleet, which numbered 600 vessels a century ago, includes but 50 now. There are 10 steam whalers, and they obtain fuel from the coal-veins at Cape Lisburne, discovered and used by Captain C. L. Hooper during his arctic cruises in search of the *Jeannette*. The average whaler is a dilapidated bark or brig, which with difficulty obtains a crew and can seldom be insured. A few of these whalers have wintered off the mouth of the Mackenzie River, in order to be on the ground in the spring. The crew go on shares, each man on board taking a percentage of the season's catch on his return to San Francisco. Oil is not the prize sought now, and the bowhead, or Kadiak whale, ranks the sperm, since whalebone commands $6 a pound, and a single bowhead yields from $5,000 to $7,000 in bone. The whalers trade with Siberian and Alaskan natives, and a revenue cutter patrols the Arctic each season to see that liquors and fire-arms are not introduced; to aid and rescue whalers when necessary; to give them communication with the world below, and to administer justice.

Point Barrow, named by Beechey in 1826, which corresponds in latitude to the North Cape of Norway, is 600 miles E. of Bering Strait, and the most northern point of Alaska and of the continent. A U. S. signal station was maintained there for two years, as one in a chain of Arctic stations maintained by European governments for magnetic and meteorological observations. A refuge station was next built, 50 out of 87 whalers having been wrecked near that point, and the crews of 12 whalers preferring to go down with their ships in 1877, than to chance the slower death in small boats or on shore. A Government school and Presbyterian mission was built in 1890 to care for the Esquimaux settled around the station. It is visited and revictualled annually by the revenue cutter.

A first pleasure tourist visited the arctic whaling ground in 1891, a New York yachtsman paying $25,000 for the three months' cruise in a Japanese steamer chartered at Yokohama. Its presence created almost

as great an excitement as the Confederate privateer *Shenandoah* when it appeared among the New Bedford fleet in 1865, captured and burned 35 whalers, and sent three to San Francisco as cartels. The *Shenandoah* made but one port in the thirteen months after leaving Glasgow. It was the only vessel that carried the Confederate flag around the world, and carried it for six months after Appomattox. It visited every ocean save the Antarctic, carried its anchors at its bows for eight months, ran 38,000 statute miles, and never lost a chase. A Melbourne whaler warned and saved many Yankee ships, and the *Shenandoah* hunted for the Australian ship in vain, else *Shenandoah* claims might have aggregated more than $6,000,000.

Demarcation Point, 600 miles E. of Point Barrow, is the international boundary line, where "the meridian line of the 141st degree in its prolongation reaches the Frozen Ocean."

Beyond lie the Northeast and the Northwest Passage, in search for which two generations of explorers sacrificed their lives. The country "beyond the north wind" still lures, and scientist, mariner, and fireside tourists dream of the place where latitude stops, longitude centers, time ends and time begins, and where the sun circles around the summer sky brooding above the pole.

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ranted a duel as defence. His assailant meeting him in Bond Street after the refusal to fight, struck Vancouver in the face and publicly insulted him. The old officer, humiliated and chagrined, failed rapidly, and died May 10, 1798, just before his voyages were published. He is buried in the churchyard at Ham, near Richmond, Surrey. Dr. Dall has found reference to the challenge to the duel in a story of Charles Reade, "What has become of Lord Camelford's Body?"—Harper's Weekly, May 6, 1876).

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