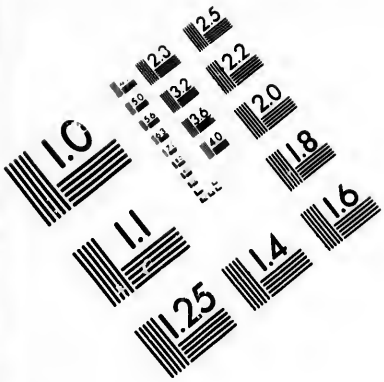

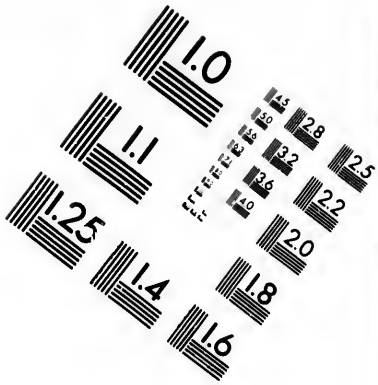

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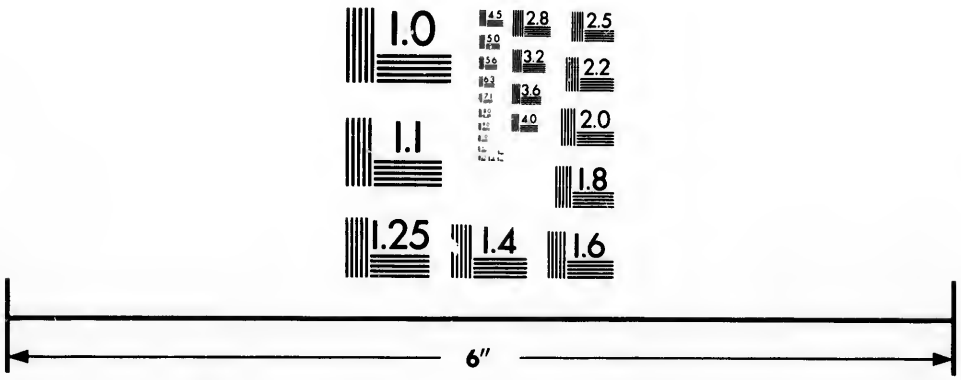

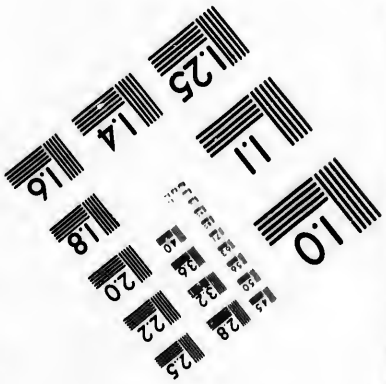

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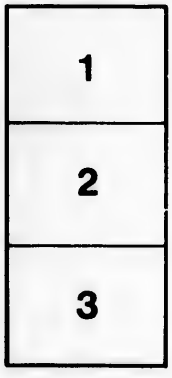

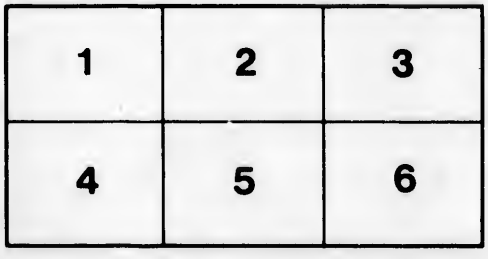

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GUIDE

TO THE

YUKON-KLONDIKE MINES

Full Information of Outfit, Climate, Dawson City, with Notes on Alluvial and Metalliferous Prospecting.

ROUTES DESCRIBED IN DETAIL

Report of Wm. Ogilvie, F.R.G.S.

AND

Diary of the late Archbishop Seghers,

(Murdered on the Yukon.)

BY G. F. HENLEY.

PROVINCE PUBLISHING CO., LTD LTY., VICTORIA AND VANCOUVER, B.C.

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CONTENTS.

PREFACE 7
The Alaska of the Tourist 9
Fort Wrangel 10
All-Canadian Route 11
Glenora 12
Teslin Lake 12
Hootalinqua River 12
Stickine River 12
Taku Route 13
Treadwell Mine 13
Glacier Bay 14
A Silent City 14
Lynn Canal 15
Chilcoot Pass Trail 16
An Inscription 17
Skagway 17
White Pass 18
Dimensions of Boats 19
Bennet Lake 20
Caribou Crossing 20
Nares Lake 20
Tagish Lake 20
Taku Arm 21
Weather in May 21
Thinklet Indians 21
Marsh 21
Lynx River 21
Miles Canyon 22
White Horse Rapids 23
Tahk-heena River 23
Lake Le Barge 23
Open Water 23
Lewes River 24
Big Salmon River 24
Little Salmon River 24
Five Finger Rapids 24
Rink Rapids 24
Pelly River 24
Fort Selkirk 25
White River 25
Stewart River 25
The Valley of the Yukon 25
Klonjec Indian Village 26
Dawson City 27
Amusements 27
Stores 28
Wages 28
Gold Output 28
St. Michael's Route 29
Fort Yukon 29
Circle City 30
Forty Mile 30
Old Woman Rock 30
Dalton Trail 31
The Poor Man's Route 31
Miscellaneous Information 32
Rain and Snow Fall at Dawson. 32
Work on the Trails 32
Features of the Country 32
Reports from Outlying Camps .. 33
A Rich Country 34
Camp Life 35
Women on the Trail 35
Climate of the Upper Yukon 37
Miners' Cabin 37
Miners' Outfit 38

PART 2.

Notes on Prospecting 41
Gold 41
Alluvial Prospecting 42
How to "Pan out" Gold 43
The Average Value of Gold 43
The Method of Reaching Pay-Dirt 43
Washing the Pay-Dirt 44
Sluice Boxes 44
Rockers 44
Prospecting for Mineral Bearing Ores 44
How to Distinguish the Precious Metals 45
Composition of Rocks 46
Nature of a Few Minerals 47
Mine Surveying 48
Calculation of Areas 48
Cubic Measure 48
Location of Claims 49
Customs Stations 49
Commissioner Ogilvie's Lecture .. 51
Explorers and prospectors 51
Discovery of Gold on Klondike 52
A Stampede 53
Area of Gold Fields 53
Rich Quartz Located 54
Diary of Archbishop Seghers 55
Taiya River 56
Out Into the Torrent 57
Chilcoot Pass 58
The Run of the River 59
A Hermit 60
Scenery of the Lakes 61
Timber 61
Berries 61
Birds 61
Bears and Other Animals 61
Notes in French on the Conduct of a Maniac 62
The Last Entry 63
The Tragedy of Melozikakat ... 63

TABLE OF DISTANCES FROM VICTORIA OR VANCOUVER.

VIA STIKINE RIVER.

	Miles.
Wrangel, steamship	750
Wrangel to Glenora, river steamer	140
Glenora to Telegraph Creek, boat	12
Telegraph Creek to Teslin Lake, trail	153
Teslin Lake to Dawson, boat	561

VIA LYNN CANAL.

Taiya (Dyea), steamship	1,000
Skagway, steamship	995

DISTANCES FROM SKAGWAY BAY TO

Head of Bennett Lake, trail	38
Foot of Bennett Lake, boat	64
Nares Lake (Caribou Crossing), boat	67
Tagish Lake, boat	83
Pow Wow River, boat	88
Marsh Lake, boat	108
Head of Miles Canyon, boat	134
Foot of Miles Canyon, boat	134.62
Head of White Horse Rapids, boat	136.20
Foot of White Horse Rapids, boat	136.58
Tahk-heena River, boat	151
Head of Lake LeBarge, boat	163
Foot of Lake LeBarge, boat	194
Hootalinqua, boat	225
Big Salmon, boat	258
Little Salmon, boat	293
Five Finger Rapids, boat	352
Rink Rapids, boat	358
Pelly River, boat	411
White River, boat	478
Stewart River, boat	483
Sixty Mile Creek, boat	504
Dawson City, boat	549
Forty Mile, boat	597
Circle City, boat	847
Victoria to St. Michael, boat	2,200
St. Michael to Dawson, boat	1,650

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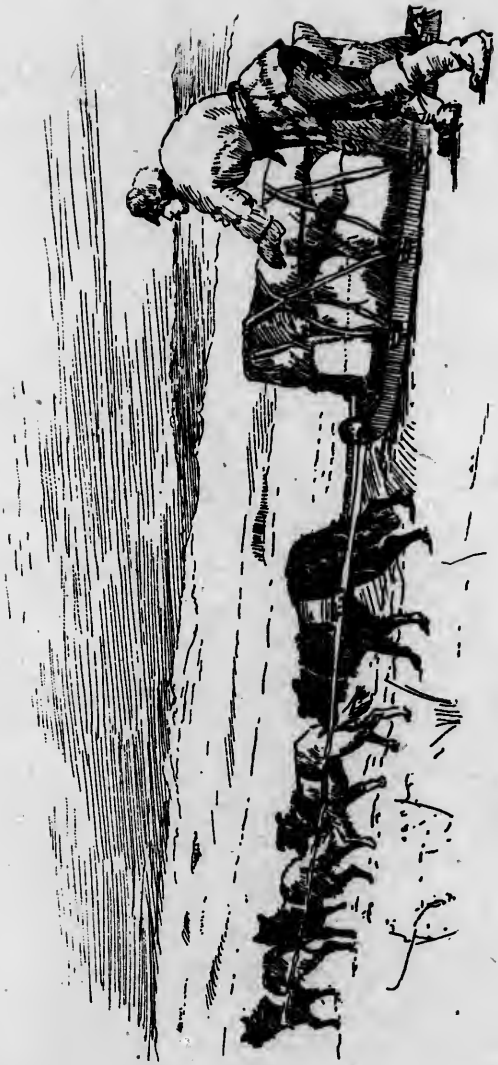

PREFACE.

UNDER the idea that there are a large number of people living far from the Pacific Coast whose minds have been fired by accounts from the Klondike goldfields, and whose opportunities for obtaining reliable information on this subject are at best poor, I have prepared from my own experience, and from the most authentic sources, some matter which I hope may prove useful to them.

Under the heading of the "Tourist Route to Alaska," will be found a brief description of the trip from Victoria, to the point of disembarkation, which for the most part is one of pleasure.

Then follows a description in some detail of the overland journey to the lakes, and along the lakes and streams connecting them, together with the relative distances between points, down to, and along the swift current of the Yukon to Dawson.

The list comprising the articles of an outfit is intended to give, in a general way, the requirements of a region, frozen the greater part of the year, and difficult and expensive to reach.

The notes on alluvial prospecting, and those on searching for metalliferous ores are necessarily brief, and can only be of use to the inexperienced prospector who, it is hoped, may find something in them to inform or to guide him in his search for the precious metals.

The statement of the climatic conditions of the Yukon basin is taken from the meteorological reports furnished by the United States and Canadian authorities.

176250

I have given the substance of a lecture delivered by Mr. Wm. Ogilvie, Boundary Commissioner, believing it to be the most important recital of the history and resources of the Yukon country that has been made.

That portion of the diary, appended, of the late Archbishop Seghers, whom I had the honour of knowing in the years gone by, will be read, no doubt, by many with a very great interest.

I must not omit acknowledging my indebtedness to my constant young friend, Mr. S. H. F. Rowlinson. I have also to thank the local press, and the proprietor of the San Francisco *Mining Journal*.

Victoria, B.C., December 31, 1897.

THE TRIP

—TO THE—

Land of the Midnight Sun.

—THE—

ALASKA OF THE TOURIST.

PART I.

Never before have the wandering steps of the adventurous miner carried him into stranger or wilder lands than lie before him on his journey to the far-famed Klondike. Nevertheless, he goes off, undaunted, and the hardships and dangers which accompany his varied life, vanish before the fascinating dream of acquiring a share of the golden sands of the north.

He constantly, during his ups and downs, is buoyed up with the pleasing hope of some day returning to home and friends, having, as the phrase goes, "made his pile."

THE START.

Starting from Victoria, the ship follows a wavering northern course, through the grandest scenery, affording a fine view of evergreen islands, the forests, and icy mountains of the Coast.

Victoria is a handsome town, a section of old England set down nearly unchanged in the west. It is situated on the south east end of Vancouver Island, which is 289 miles long, the largest of the archipelago that stretches northward along the margin of the continent for nearly a thousand miles.

Tourists usually stop here for a few days, and most of them go to the famous stores of the Hudson's Bay Company, to purchase furs or some wild Indian trinket. In the warehouses may be seen the clothing of bears, panthers, foxes and musk-rats, and many others of "our poor earth-born companions and fellow mortals."

Leaving Victoria we move into a narrow sea, so narrow that we seem to be tracing a

MAJESTIC RIVER

with lake-like expansions, the tide-currents, the drift wood brought down by avalanches, the inflowing torrents, and the luxuriant foliage of the shores making the likeness complete. Then rounding some cape, the eye perchance is called away into a far receding vista, head lands on each side in charming array.

Five hundred and fifty miles of this scenery and we reach the boundary line, "Forty-four forty," at the head of Queen Charlotte Islands. We are now in Alaska. This is the name of all that portion of the northwest extremity of this continent, which, until '67 was known as Russian America.

One hundred and fifty miles further on and the ship arrives at

FORT WRANGEL,

on Wrangel Island, near the mouth of the Stickine River. It is a quiet, dreamy old place, of a few hundreds of whites, and Indians living in their own strange way, midst the most delightful scenery imaginable. Baron Wrangel established a trading post here about a century ago, and the fort, a massive stockade, was built by the United States. Indians mostly of the Stickine tribe occupy the two long draggled ends of the town along the shore, the whites numbering about 50, the middle portion.

CURIOS OF WRANGEL.

On the arrival of the steamer, most of the passengers go ashore to see the curious totem-poles in front of the massive timber houses of the Indians, and to buy curiosities, such as carved spoons, shaman rattles, miniature canoes, silver bracelets hammered from dollars and tastefully engraved by Indian workmen; paddles, baskets, mats, etc. The traders in these curious wares are mostly women, who sit in front of the stores, the girls, brilliantly arrayed in ribbons and calico, the older ones sitting in their blankets, seemingly careless whether they sell anything or not. These Indians are proud and intelligent, and maintain an air of self-respect which tattered blankets and blackened faces cannot wholly subdue.

THE FOOD OF THE INDIANS.

What the mustang is to the Mexican vaquero the canoe is to the Indian of the Coast. In summer they may be seen in merry bands skimming over the glassy and sheltered waters, the long beak-like prow, and stern of their canoes blithely decorated with purple epilobium, on their way to fish or gather berries, and perhaps no where else can be seen so many berries, the woods and the meadows, and open spaces along the shore are full of them, hundreds of tons might easily be gathered, and yet sufficient for every one in the territory remain. The Indians press them into cakes and dry them for winter use, to be eaten as bread with their salmon.

WOODS.

Going into the woods almost anywhere, you have first to force a way through an outer tangle of *Robus*, huckleberry, dogwood, and elder bushes, and a strange woody plant several feet high, with limber, rope-like stems beset with thorns, and a head of broad leaves like the crown of a palm. This is the devil's club (*Echino panax horrida*) it is used by the Indians for beating witches. Back in the shady depths of the woods where the walking is free, you will be charmed with the beauty and grandeur of the trees, as well as the solemn stillness of the forest. Wander where you may, wilderness ever fresh and ever beautiful, meets you in endless variety.

THE WEATHER ON THE COAST.

The climate of that portion of the Coast that is washed by the Japan current, is remarkably mild and free from extremes of heat and cold. An Alaskan midsummer day is a day without night. At Sitka and Wrangel the sun sinks only a few degrees below the horizon, so that the rosy colors of the evening blend with those of the morning, leaving no gap of darkness between. In late autumn and winter roaring storms come down and fill the days and nights with steady rains and winds.

ALL-CANADIAN ROUTE.

The prospector who proposes taking this route will now have to disembark from the ocean steamer and transship his supplies to a river steamer, which will take him up the Stickine River, the mouth of which, at Rothsay Point, is 12 miles from Wrangel. The river has a swift current and is usually open for navigation between the end of April and middle of May. Steamers of a light draft can ascend to Glenora, 140 miles from Rothsay Point, and canoes to Telegraph Creek, 12 miles further on.

At Glenora, the banks are low and slope gently to the water. Ice beins to run about the end of November, and a little later the river freezes over. In winter months miners haul their supplies, loaded on sleds, on the ice, and dogs and other hardy animals are pressed into service to aid in this toilsome work.

From Glenora to Lake Teslin, the commencement of the inland fresh waterway, the distance is said to be 153 miles, over a comparatively level country, dotted by marshes, swamps, ponds and lakes,

THE FIRST OBSTACLE

met with on the journey is the Taltal River, which is 21 miles from Glenora. This river is swift, and at this point runs between high gravel banks.

THE SECOND OBSTACLE

we meet is also a river, the Nialino, and this, like the first, is swift but shallow. ahd somewhat wider than the Taltal. In this district the foothills are timbered with spruce, hemlock and pine. Further on stretches of marsh are met, which would, unless corduroyed, necessitate a considerable divergence to the side hills. Now comes Lake Teslin, about 100 miles long, at which boats are built, and from which on the water journey presents no great difficulties.

If improvements were made on this trail packing could be done from May to the middle or end of October, at which time the lakes and rivers commence to freeze. Sawmills and boat-building would then enliven the scene around Lake Teslin.

THE HOOTALINQUA

or Tes-lin-loo, as the Indians call this river, leaves Lake Teslin and follows a northwesterly direction to its confluence with the Lewes River, 28 miles below Lake Le Barge. In its course of about 120 miles, it receives numerous tributaries, and wherever prospecting has been done gold has been found. From Seymour Creek, entering about midway of its course, good reports have come, but owing to the difficulty in the past of getting in sufficient supplies, miners were obliged to abandon their prospects.

When the spring is well advanced, the country at intervals provides good grazing for pack animals, but cannot be depended on to supply grass at the close of the summer season. We now return to the

STICKINE RIVER.

The scenic glories of the river country cannot fail to excite wonder and admiration, and the thousands of tourists who

will come to the Coast to see Alaska, and the extraordinary sights accompanying the rush to the gold fields will be well repaid for their trouble.

The Stickine River follows a westerly course through grassy plains, then curving southward and receiving numerous tributaries from the north, it enters the coast range and sweeps across it to the sea, through a valley that is from 1 to 3 miles broad, and marvelously beautiful from end to end. The canon of the river is a gallery of sublime pictures, an unbroken series of high mountains, glaciers, waterfalls, cascades, groves and grassy meadows, and above them all many peaks and spires tower grandly into the sky.

Leaving Wrangel and continuing the journey northward, the ship passes through the picturesque Wrangel Narrows into Souchoi Channel and Frederick Sound. Near Cape Fanshaw you are opposite a group of glaciers, the largest of which is the Patterson glacier. At Sum Dum or Halkam Inlet, another fleet of icebergs come in sight. The scenery in this inlet is of the wildest description. About 40 miles up the Coast more icebergs appear; this is the entrance to Taku Inlet. It is 18 miles long, and in this distance you may count 45 glaciers, a sight worth coming round the world to see. The beautiful Taku glacier might well be mentioned here, but by and bye we will see the grandest of them all.

TAKU ROUTE.

This route starts at the head of Taku Inlet, and involves considerable hardships. Small boats take travellers to the head of the inlet. Then the inland journey commences. The trail crosses a high mountain, and then following the canon of the Taku River for some distance, turns a little to the east and follows the side hills of an opening in the Coast range of mountains to the Inklin river, a distance of about 80 miles. Here rafts or boats are built, and the long water journey commences. This route avoids the Grand Canyon and the White Horse Rapids, but the avoidance of these wild waters is scarcely sufficient compensation when weighed with the up-hill and down-hill toil of a long and rough trail.

A little down the inlet is Juneau, hemmed in in front by the water, and a towering mountain rising like a wall at the back. Just across on Douglas Island is the great

TREADWELL QUARTZ MINE.

Dense columns of smoke are seen issuing from the chlorination works which are here, burning that part of the ore which the batteries have not been able to separate from the

gold. Its poisonous vapors that the humid atmosphere has crowded down the mountain sides have bleached the timber almost white.

Passing between Douglas and Admiralty Islands the steamer turns to the south into Icy Strait, and moves across to

GLACIER BAY.

The largest of the seven glaciers that discharge into Glacier Bay is the Muir. The front is about three miles wide, but the central berg-discharging portion, which extends across the inlet; like a huge blue barrier, is only about half as wide. The height of the ice-wall above the water is about 300 feet, and 720 feet of the wall is below the surface, while still a third unmeasured portion is buried beneath the material that is being constantly deposited at the foot of it. Therefore, were the water and rocky detritus removed, there would be presented a sheer precipice of ice a mile and a half wide and more than 1,000 feet in height. The bergs given off fall with tremendous noise like distant thunder. The average rate is about one in six minutes. The largest and most beautiful of the bergs, instead of falling from the exposed wall, rise from the submerged portion with grand commotion, heaving aloft tons of water, while they plunge and heave before they sail away as crystal islands, free at last, and happy, one might think, after being held in an icy grasp for centuries. This grand glacier, draining an area of perhaps 1,000 square miles, and reaching back fifty miles into mysterious solitudes, is two hundred times as large as the Mer de Glace of the Alps. The rate of the motion in the central cascading portion is from seven to ten feet a day. Think of Niagara Falls frozen stiff and you have a slight idea of the terminus of Muir Glacier; picture a background of snow-capped mountains 15,000 feet high, and then imagine, if you can, the effect of the sunshine pouring in iris colors on the crystal ice.

A SILENT CITY.

An unknown city is said to have been seen by Professor Davis, in mirage over Muir glacier. The buildings seemed to him of massive dimensions, extending in solid and unbroken blocks as far as the eye could reach. The entire limits of the city were confined within a halo of light, dense yet transparent, pouring its soft glow upon roof and wall in glorious transformation. To the right and left a range of mountains, covered with the garb of winter, formed the background. The

top of a high monument in the center of a broad street seemed to pierce its ghostly robes. At one end of the street a large building with a dome, while near the other end a piazza having beneath it an excavation running out to the sea appeared. At the other end of the excavation the walls of a building stood apparently uninjured, while the roof had disappeared and smoke seemed to issue from the interior. From beyond the burning building a driveway, in the form of a crescent, seemed to encircle a portion of the city. Yet within the whole of its length and breadth not one soul could be seen. All was silent as a grave. When suddenly the vision began to move away. Its glories and grandeur lured with a fascination which he could not resist. But as he walked forward it seemed to recede with every pace, and before he could get within the silent portals it was wafted into space and lost to view.

The city is said to resemble Bristol, England, but beyond that it remains unidentified.

The summers in Alaska are delightful—never oppressively warm; the long nightless days never lose their spell, and in retrospect the wonders of the Northland appear the greater.

Leaving Glacier Bay the steamer proceeds northward into Lynn Canal, the most beautiful of all the mountain-walled channels you have yet seen. The Auk and Eagle glaciers appear in one view on the right as you enter; but it is on the west side, near the head of the canal, that the most striking feature of the landscape is seen—the wonderfully picturesque Davidson glacier. Shortly after passing this glacier the northernmost point of the trip is reached at Taiya, the head of Chilkoot Inlet—the east Arm of Lynn Canal—a little above 59°, and distant from Victoria 1,000 miles.

This is the Alaska of the tourist, famous for its glaciers, its beautiful inlets, and its picturesque Indians and their totem poles. But beyond the big white range is another and a totally different country, the valley of the Yukon. Just across the coast range from Taiya is a chain of lakes surrounded by snowy mountains and coneected by a narrow stream, which, after receiving numerous tributaries, swells into a great river and pours its huge flood into Behring Sea. On the lower half of its course the river receives the waters of the Porcupine, Tanana, Kokukuk and numerous small streams, until the mountain brook has, in the 2,400 miles of its course, become one of the greatest rivers on the earth. Leaving the tourist at the head of Lynn Canal the prospector's holiday ends, and he prepares for the more serious task of crossing the mountains.

At the head of the canal there are two trails over the mountains, which unite at the lakes beyond.

CHILCOOT PASS TRAIL.

Landing at Taiya, or Dyea, as the miners call it, the plan is to follow the usual route of miners bound for Dawson City —to cross the Chilcoot Pass and descend to the lakes on the other side, dragging the outfit on hand-sleds across these lakes to a point where there are trees to build a boat in which to continue the journey. Near the landing place there is a village of Thlinket Indians, who assist travellers in packing their supplies at so much per pound. In August the price was eight cents to the summit and twenty-five cents to the lakes.

The route lies up the valley of the Dyea River, and at certain stages of the water, boats can ascend to within a mile of the cañon, a distance of five miles, and canoes can go one mile further. Here packing commences, and a little further on the sled is loaded, and the mountain climb commences up a steep inclineto Sheep Camp, a distance of eleven or twelve miles from the shore. The elevation of this point is about 800 feet. Looking up a large gorge, flanked by precipitous snow-covered mountains, you can see at the summit a little notch known as the Chilcoot Pass, the gate to the Yukon treasures. The seriousness of the task is not apparent. In April the snow had disappeared at sea level, but a short distance up the cañon the ground was covered with it. A few hours' hard climbing brings us to the scales, where supplies are weighed, near the last and hardest part of the ascent. This point is about five miles from Sheep Camp. A toilsome and terrible journey of about a mile up an incline rising at an angle of about forty-five degrees, and we reach the summit. From this lofty and narrow crest of snow and ice we see below the tortuous zigzag trail and ahead the valley of the Yukon stretching away in billows of spotless white.

The elevation of the pass is 3,378 feet. The upper limit of timber is reached near the foot of the dreaded pass on the south side, at an elevation of 2,300 feet, and on the north side 1,000 feet below the summit.

Preparations are now made for the descent—the sled is loaded, and everything made secure for the wild ride down the icy slope. The route is through a gorge and the sled shoots along like an arrow with the motion of a boat in a choppy sea. All goes well while it remains on an even keel, but if it

should strike a rock or other obstacle in its flight the consequences, in all likelihood, would be serious.

Leaving the gorge the sled runs on to a sort of bench or flat, and four miles down the ravine brings us to a clump of dwarfed spruce trees, the upper limit of timber. A few miles further on and we reach Lake Linderman. The work of getting supplies over the mountain when the snow is soft entails labor of the most slavish kind. If the lake is clear of ice the usual course is to build a raft and float down to the end, and then pack the supplies over the ridge to the head of Lake Bennet.

Lake Linderman is five miles long and half a mile wide, and the first of the chain of six lakes of the Upper Yukon. It is shut in by glacier-worn granite hills, and here and there along its shores are a few small pine and spruce trees. All of these lakes remain frozen until May. The trail comes out at the east side of the lake. The timber is not sufficiently long for boats, and instead of taking to the stream, a crooked and rocky one, and dangerous for boats, which connects Linderman with Lake Bennet, the trail follows a sandy ridge three-quarters of a mile long to the head of Lake Bennet, where the trails unite.

Here the following

INSCRIPTION

was nailed to a tree over eleven years ago:

"Archbishop of Victoria, V.I., accompanied by Fathers Tosi and Robant, camped here and offered the holy sacrifice, July 30, 1886."

The above was written by the late Archbishop Seghers scarcely four months before the tragedy (see diary) of Melozikakat, on the lonely banks of the Yukon.

We will now return to the coast, and as a very large proportion of the travel was over the White Pass, it will here be described in detail.

SKAGWAY.

The town is situated about two miles south of the head of Chilcoot Inlet, and about four miles from Dyea, from which it is separated by a rocky point. When the reports came out in June of the great discoveries of gold, Skagway was a desolate looking place, without accommodation of any kind for the thousands that were soon to land on its long sandy beach. Now, twenty-six hotels and saloons are open day and night, and all the concomitants of a fast town are present. The population has grown to about 3,000, and frame build-

ings occupy the place where tents were a few months ago. The cost of living has dropped from the boom prices of early spring to a rate very little in excess of those in the larger towns to the south. The difficulties, too, of landing freight have largely disappeared. Three fine wharves running out to deep water have been built, and no longer will be seen the pull-dog pull-devil struggle of horses, dogs and men on the beach.

WHITE PASS TRAIL.

Starting from the bay, about half a mile in width, at the mouth of the Skagway River, the trail follows the southerly bank for about a mile, then crosses over the bridge and continues on for about three miles to the foot of the hill, at which place there was a little colony of campers who christened the place Eden. There was one lady, a Mrs. Etelstone, from Kentucky, in the camp in August. Up to this point the trail is over level bottom land and admits of the use of wagons; but here the mountains close in, and the trail rises up the side for about three miles till it reaches an elevation of about 1,000 feet, when it descends to a large tributary of the Skagway called Porcupine Creek, which it crosses over a bridge, and after winding along a hillside known as the Porcupine Hill, descends to the bank of the river, which it follows for about 400 yards to the next bridge, a distance of about four miles from Porcupine Creek. Just below this crossing the river is contracted to a width of about eight feet. The trail now follows the south bank of the river for about two miles, when it again crosses, and, rising over a spur of the mountains, about 150 feet above the river, descends to the fourth crossing, a distance of about half a mile from the third crossing. From this point there are two trails, one known as the "cut-off" and the other as the "turtle-back." The cut-off follows along the river and is used by packers, while the main trail follows down stream for a little way and then crosses the Turtle-back Mountain at an elevation of about 1,300 feet above the level of the river. This part of the trail over the "turtle-back," which is about two miles, is conceded to be worse for horses than any other. At the river the trails re-join, and following the bank for about half a mile cross the river for the fifth and last time at the ford which brings us to the foot of the summit. Up to this point there is a good deal of timber, but from the ford to the summit, a distance of two miles, and from the summit to the first meadow, three miles further on, there is no timber.

is perhaps a mile wide, and its height is hardly more than 1,000 feet above the ford. The view is grand on a clear day. Looking backward the dark valley of the Skagway can be traced winding its way through the white domes looming in the azure of the sky, while in front, on either side, stretches an elastic carpet of golden mosses dotted by miniature lakes and ponds, and flanked by an unbroken series of peaks in spotless white, down which avalanches from the snow-laden heights boom and reverberate. Here storm-winds gather in the early spring, choking the air with snow and sweep over the lakes beyond. From the summit to the first meadow the descent is very gradual. The First Meadow, as it is called, is a long strip of peat marsh, rather than meadow land. Here a number of horses, too weak from want of food—the miners, trusting to the meadows, packed no hay over the summit—were abandoned during the summer. It is four miles from the first meadow to the second which is similar to the first, but less in area, and about eight miles to the Rocky Ford which crosses Shallow Lake, a strip of water several miles in length. The trail now skirts the lake for over a half a mile and continues through a better timbered country over ridges and marshy places. After passing through about six miles of this kind of country the trail comes out at the lower end of Lake Linderman, and turning to the right follows along the ridge above the rapids to the head of Lake Bennett, the junction of the Dyea and White Pass trails.

The heavy demands made upon the trail by the thousands of men and horses churned every marshy spot into a mud hole.

Arriving at the head of Bennett Lake before June there are two courses open to the traveller, either to proceed over the ice with his sleigh or to go into camp and build a boat. If he should decide to push on at once he may, if fortune favours him with a good breeze, make good time by putting on the front of the sled a V-shaped mast and rigging up a sail with a tent-fly or blanket. If, on the other hand, he determines to wait for open water, he can buy boards at the mill, 200 yards away, or fell trees, construct a "saw-pit," a scaffolding about eight feet high, and whip-saw the timber into suitable lengths for his boat. The whipsaw is an instrument about eight feet long with a handle at either end.

DIMENSIONS OF BOATS.

When you make or buy a boat have it at least twenty-two feet long on the bottom, with a prow projecting two feet. Have the widest part of the boat about one-third of the dis-

tance aft from the bow. From there have it taper somewhat to the stern. Have the stern with quite a rake, otherwise it will be swamped in the rapids, and the bottom should be four or five inches higher at the stern than amidships.

The cost of boats varies very considerably at the lakes. In last August the price for a good boat was two hundred dollars. Timber for boat building is sawed into straight boards a suitable length, and ten inches wide and three-fourths of an inch thick.

Lake Bennett is 25.8 miles long, and the upper end is about half a mile wide, and lies between beetling granite ranges which rise from the water to heights of 3,000 and 4,000 feet. About midway of its length another arm, called Wheaton River, comes in from the west. This arm is wider than the other and terminates in rugged and bare mountains. The region is in every sense an Alpine one. The lower part of the lake is over a mile wide, with deep muddy water. Here a broad valley opens to the north, and the beach is low and flat. To the east are high hills, around which the water turns in in a channel called Caribou crossing, about 300 feet wide, and which soon expands into another lake.

Caribou Crossing, so called because great bands of caribou cross here. These splendid animals roam over the great unexplored region extending to the head waters of the Dease and Liard Rivers, and hundreds of miles beyond to the Mackenzie River, which flows from the Great Slave Lake in the Northwest, and pursuing a northerly course empties into the Arctic Ocean. A short stretch of river joins Bennett with Nares.

Lake Nares is the shortest of the system; it is 2.7 miles long, and its greatest width is about a mile. On the east side the mountains rise abruptly from the shore. It is joined with Bove Lake by a channel of about 600 yards long. Low alluvial land covered with willows extends along the channel to the west end of Bove Lake.

Bove or Tagish Lake is about a mile wide for the first two miles of its length, when it is joined by the Bras des Vents (Windy Arm). Here the lake expands, but soon narrows again to about half a mile. Ten miles from its head the Taku Arm enters from the south. The region of the lakes is most picturesque, abounding in striking points of view, and in landscapes pleasing in variety, and grand and impressive in their rugged forms. The elevation of this remarkable system of lakes above the sea, by aneroid barometer, is 2,088 to 2,150 feet.

Taku Arm, twenty miles long, is narrowed at the entrance to a width of about a mile, and is bordered on the west side by a uniform wall-like range of limestone mountains sloping to the water. The lower end of Tagish Lake occupies a valley which runs through to Bennet Lake. The west side is very flat and shallow, and is usually followed as it affords some shelter from the strong winds which come up from the south.

The Pow-Wow, a short tranquil reach of river, five miles in length and about 170 yards wide, connects Tagish with Marsh Lake. This stream was open in mid-channel in the early part of May. The weather had been quite warm for several days, and the snow had benun to melt in the valley of the river. About four miles down on the west bank there is a nice camping ground, and directly opposite are Indian log houses, the yearly rendezvous of bands of natives.

The Thinklet Indians from Chilcat, Taiya, and the Tennehes, from as far away as the mouth of the Pelly River, meet on this neutral ground to trade, and indulge in their great annual drunk with the accompanying feasts and dances. In this vicinity there is good timber for boat building. On May 13 the air was alive with geese on their northward migration, and a day or two later came the wavies (*anser hypêrboreus*); small game, such as ducks, rabbits and grouse are plentiful.

Marsh Lake is nearly twenty miles long and about two miles wide. It lies in a continuation of the same wide valley occupied by the lower end of Tagish Lake. On the west side the banks are high and gravelly and lofty mountains in the distance bound the view. On the left are low grassy meadows beyond which broken hills are seen. At the lower end McClintock river enters from the east, bringing down great quantities of drift wood, which is banked high near its mouth. Between Lake Marsh and Lake LeBarge, which is the last and longest of the chain of lakes, there are fifty-five miles of river, but in this distance are the two greatest obstacles to navigation in the whole Yukon system—Miles Cañon and White Horse Rapids. Spring had advanced with such astonishing rapidity that the snow had almost disappeared on May 14, and the weather was superb.

Lewis River, where it leaves Marsh Lake has received the name of Lynx River. It is about two hundred yards wide and averages this distance as far as the cañon. Twenty-five miles from Lake Marsh we come to a bend, and now see ahead a brown rocky ridge divided by a slit less than 50 feet wide, and at the same time hear the roar of the rapids in their wild rush through the cañon.

To make the run successfully is easily practicable, but it is

imperative to keep in the centre of the channel and not to allow the boat to be caught in the eddies.

There are two ways of passing the rapids, one by portaging over the hill on the east bank, and the other by boldly running through. To utilize the portage the boats are unloaded and dragged out of the water, and by means of a windlass drawn up the hill slope, about. 100 feet high, and then pulled on rollers for three-quarters of a mile to the river.

The Archbishop, whose diary is appended, describes the rapids as follows :

"Miles Cañon, about five-eighths of a mile in length, lies betweeu two steep, almost perpendicular cliffs of basalt about 100 feet in height, in the shape of columns, through which the whole river, compressed into a space of 50 feet, rushes with tremendous velocity. The water boils up in large waves, having a depression in the centre so that no floating object can possibly strike against the rocks of the bank. For about a quarter of a mile the banks are nearly parallel; then they widen out, the current being more slack between two eddies, the water after leaving this wide circular basin rushes over a large rock into another channel and leaves the Cañon roaring and foaming, as if to testify to its fury. One boat was unloaded and the supplies packed across the trail along the Cañon. Fuller, an attendant, took the helm, Father Robaut took an oar, the miner we had picked up took another, and as I did not want to see my people jeopardise their lives without sharing their danger, I took my place in front of the boat, my watch in hand, to measure the velocity of our locomotion. My presence seemed to remove from my followers all dread of the gloomy Cañon. We started off at 1 p.m., and in a moment the swift current caught our boat and whirled it between the breakers on each side of the Cañon. It was a terrible scene. We were visibly on an incline and rushing down hill with the speed of a locomotive. The roaring of the water, the spray that filled the air all around us, the waves that struck our scow, which rolled and pitched as if on the billows of the sea, made an impression on our minds that will not easily be forgotten. But we had no time for reflection. In a few moments we found ourselves in a slack current and between two eddies, which we had to avoid most carefully. Then another plunge into the rest of the Cañon. Passing over a rock over which the water poured and foamed a liquid hill behind us that screened from our view the head of the Cañon; we were hauled right and left, tossed and shaken, shipping the water at intervals and merging from the dark place, having made a mile in three minutes and twenty-five

seconds. A quick motion of the rudder gave a sharp turn to our scow and brought her into slack water, whilst we landed where three of the miners waved their hats to congratulate us on the success of our achievement.

On Wednesday morning, August 25, we left the foot of Miles Cañon, and reached safely the head of White Horse Rapids, a distance of about two miles. Here we had to unload our boat again and pack the supplies once more a distance of about a mile. Next day we let our boat down the Cañon, holding her stern from the shore with a line and pushing her off the rocks with poles. This Cañon has not the same dreadful appearance as Miles Cañon, but the water is shallow and very boisterous, it rushes over boulders and dashing against them, it recoils and boils backwards, covering itself with a white crest which some extravagant imagination has compared to the mane of a white horse. At one moment our boat was in imminent danger of perishing. She filled with water, sank, and carried away by the current, snatched away the lines from the hands that were holding them, when, in the nick of time, Fuller caught the lines with a pole, all joining in a supreme effort got control of the boat and brought her to an eddy. She was promptly bailed out and landed safely at the foot of White Horse Rapids."

TAKH-HEENA RIVER.

Fifteen miles from White Horse Rapids, we come to the Takh-heena River, which has its source in the Chilkat mountains to the west, and is joined by the Nat-sun-tur River near the falls, about 40 miles from its mouth, which is 12 miles from

LAKE LE BARGE.

This lake was frozen May 18, although the river was open. It is 31 miles long and from three to six miles wide. The upper end is enclosed by sandstone hills through which there are several channels. When the lake is clear of ice, boats should be headed for an island in the centre, and then cross to the right hand and follow close to the bank as a safeguard in case a storm should be encountered. The lake, which has an elevation of 2,088 feet, lies between broken hills, around which it takes a sharp turn to to the east, with a current of perhaps six miles an hour. Near the end of May the weather was warm and

OPEN WATER

was reached on leaving Lake Le Barge on the 20th May. From here to its mouth the Yukon is unobstructed, save by a

couple of unimportant rapids, and the remainder of the journey with fine weather, may be a delightful excursion.

LEWES RIVER.

The Lewes River, on leaving the lake, is 600 feet in width, This part of the stream from Lake Le Barge to the Pelly River. is called by the miners, Lewes River; it is, as a matter of fact, part of the Yukon. The surface of the country is rolling and hilly, backed by low mountains, and generally wooded in the valleys, the uplands being bare. Caribou and moose are occasionally seen. 31 miles from Lake Le Barge we come once more to the Hootalinqua, and 33 below, the

BIG SALMON

enters, coming from Lake Quiet, 150 miles or more to the south east, and beyond which is an unexplored country. This river received its name from the quantity of salmon in its waters. It is wonderful how this beautiful fish forces its way over bars and rapids for nearly 1,800 miles from Behring Sea. 35 miles further on at the mouth of the Little Salmon the Tinueh Indians have a camp. They are a fine looking lot of people, dressed in skins and furs. Long before we reach the

FIVE FINGER RAPIDS,

which are 59 miles from Little Salmon, we can see the five columns of rock in the channel of the river. By keeping to the right no difficulty will be found in running through. Six miles lower down are the

RINK RAPIDS.

These rapids are formed by a bar of rocks extending some distance out from the west side of the river. On the east side the passage is quite clear. Light draught steamers with powerful machinery, could ascend to the head of Teslin Lake, 300 miles from Five Fingers. The river is here much swifter than above, and we need row only enough to break the monotony of lounging about in the boat as we drift along past the hills which close in at the west side 25 miles from

PELLY RIVER,

which is about 300 miles long. It flows from Lake Francis, in the south east, aud follows a north-westerly course to its junction with the McMillan, a large river, coming from a great unexplored country extending to the rocky mountains, and then bends, following a westerly course to its junction with the Lewes River, 53 miles from the Rink Rapids.

FORT SELKIRK.

Nothing now remains of this old fort but a blackened chimney. It is a little distance below the junction of the Lewes and Pelly, and here Harper, whose history is so closely connected with the country, has a trading post.

Leaving Fort Selkirk, islands are numerous, and the valley preserves its usual depth of about 800 feet. Cliffs of basaltic rocks are passed, and gravel terraces occur occasionally, decreasing in height as we descend. The river now follows a W. N. W. bearing, but lower down bends to the E. and follows a north-easterly direction. Wooded banks and steep slopes with rocky bluffs above, are the chief features of this part of the country. We now reach the

WHITE RIVER,

which is 95 miles from the Pelly, a great stream fed by tributaries coming from as far away as Mt. St. Elias in the west. A view up it showed a wide valley filled with countless bars and islands, between which the swift stream threads its tortuous course and enters the Yukon with a force sufficient to drive its white muddy water half way across and to change the colour of the Yukon from a pale green to white, for a distance of over 100 miles. Ten miles below the

STEWART RIVER

enters the Yukon from the east. A number of prospectors were at work on its branches near the mouth during the summer. A hundred miles up, it receives the McQuestion, where it is 400 feet wide and it is deep enough and sufficiently free from bars and rocks to be navigated by flat-bottomed steamers that distance. Moose are plentiful and fish abundant. Along the valley of the river are great quantities of berries, such as black and red currants, gooseberries, raspberries, cranberries, and huckleberries. Recent accounts of an official character from this district declare it to be exceedingly rich.

An important feature of the river is the constant recurrence along it of high gravel terraces, most of which are more or less auriferous. It is possible that the gold found on the bars in the river is concentrated from these.

Twenty-one miles further on we pass Sixty-Mile Creek.

THE VALLEY OF THE YUKON.

Leaving the Stewart the river maintains a general northerly course, and in the expanded stretches islands occupy much of the surface. Beaches line the shore and tracking is possible

for the remainder of the journey. The current is swift and uniform, and at a medium state of the waters runs about 5 miles an hour. The width of the river occasionally exceeds a mile, but it narrows as we approach our destination. The valley of the Yukon from the Pelly is cut through an elevated plateau, on which rest low ranges of partially bare hills, which afford some grand views. Bluffs of rocks and bold rampart-like cliffs are of constant occurrence. The width of the valley varies from one to three miles.

We are beside the Indian village Klonjec, from which it is thought Klondike comes. It matters little, however, our objective point is here, we have come 66 miles from the Stewart River, the mighty Yukon continues its uninterrupted course to the sea, and we are now at Dawson, the city of gold.

DAWSON CITY.

The townsite is regularly laid out and comprises an area of 160 acres. A broad avenue separates the town from the Yukon. The south portion is on the lower side of the Klondike River where it joins the Yukon and the trail to the mines leads through it and along the side hill at the back. A few hundreds live on this side. The north side, on the opposite bank, is a low and rather marshy piece of ground of about 100 acres and is covered with moss. In cold weather a strong wind usually blows up the Yukon, and Dawson, being on the bend of the river, receives the full force of the blast. But when the temperature is very low a dead calm prevails. The population was over 5,000 in September and increasing daily; hundreds are scattered along the route. Most of the houses are constructed of logs, hewn so as to rest flat on each other. Poles are placed across the roofs and layers of moss and earth of fifteen or twenty inches cover them and serve to keep out the winter's cold. The heavy frost cracks green logs and enters the huts, making less comfortable the lives of the inmates. As in old Cariboo, so also in Klondike, the miner piles up great quantities of earth around the walls to keep out the cold blast which sweeps down from the north through the valley of the Yukon.

The buildings of the Commercial Companies are large and substantial; these have double walls of boards with saw-dust between.

AMUSEMENTS.

The chief objects of interest are the dance halls and gambling games. Games involving very large sums are running night and day. The loss or gain of a couple of thousands is scarcely noticed.

The dance halls open about eight o'clock in the evening and the morning is well advanced before the bands and the belles retire and the *festivities* draw to a close. Gallant beaux, equipped in blanket suits and heavy nailed boots grace the floor and pay $1.00 for the luxury.

Drinks and cigars retail at 50 cents, and such is the thirst for beer that two breweries cannot supply the demand at $125 a keg.

Saloons are run "wide open" and do not pay a license. The individual who does the honours, in liquidating his debt, passes his sack over to the bar-keeper, who usually pours out enough dust to settle the amount. There are over sixteen saloons and their receipts are very large. One is said to have

taken $60,000 in sixty days last spring, and on the day the successful miners took their departure on the first steamer of the season the receipts amounted to $6,500.

STORES.

Together with the general stores there are barbers's shops, laundries, restaurants, jewellery stores, physicians, a half a dozen or so, and real estate offices. The laundries charge $1.50 for washing a white shirt and 75 cents for flannels; shaving is 50 cents and a hair-cut $1.00; loaves of bread, and small at that, cost 50 cents.

A drove of cattle arrived in September, and as a consequence two butcher's shops were opened and meat was sold at $1.00 a pound, which made work for the solitary dentist, who charges $3.50 to extract a tooth.

WAGES.

Mechanics receive an ounce of gold for nine hours' work and some of them $20 to $25 a day. There was no sign, up to September, of any diminution of labourers' wages; they received from $10 to $15 a day.

CHURCHES.

There are two churches, Catholic and Episcopal, and an hospital in charge of ladies of the order of Sisters of Charity.

GOLD OUTPUT.

From careful enquiries from the best authorities, the quantity of gold said to have been taken out of Bonanza and Eldorado Creeks alone, up to September 1st of last year, would weigh not far from five tons, and yet nothing like a fifth of the claims have been properly worked and some hardly prospected. It is hard to realize how plentiful the gold really is in some of the claims. Those yielding less than $2,000 or $3,000 a day scarcely excite a passing comment.

Aside from the holders of rich claims everybody is in a state of feverish excitement and ready at any moment to make a grand dash for any new diggings. The slightest rumour of the discovery of a new creek is enough to cause a stampede, and women, not to be outdone, close their stores and join in the wild rush. During these stampedes men rarely take time to cook a proper meal. Off a man will start with nothing more

than a "slap-jack" in his stomach and hope in his heart. Fortunes are made by men who work on the "lay," that is to say, the owners rent out their prospects to the workmen for one half the gold product.

ST. MICHAEL'S ROUTE.

There are, in general, two ways of reaching the Klondike. The easier way, but the longer, is entirely by water, and occupies about thirty-five days. The traveller, taking ship at Victoria, sails direct for St. Michael, seventy miles from the mouth of the Yukon River, a distance of 2,200 miles. Enormous quantities of supplies are shipped here every year for the trading posts and missions on the river.

Steamers drawing four feet of water can ascend the Yukon for a distance of 1,800 miles to the Pelly River, and smaller boats, with powerful machinery would be able to pass the Five Finger Rapids, and ascend to the head of Teslin Lake. Navigation on the lower part of the river usually opens about the end of June and closes in the early days of October; the upper part of the river is clear of ice a couple of weeks earlier and ice begins to run again about the end of October. For two weeks suceeding September 29th of the present year, ice cut off all entrance to the river channel; then a hard thaw came, lasting a few days. On the 16th of October, at St. Michael, the weather indicated that winter had set in in earnest.

Entering the river, which flows into Behring Sea through several mouths, the greatest north being about sixty-five miles from the most southern artery, the direction is easterly, but soon bends round to the north and follows a general northeast bearing for about 200 miles to Nulato, where the river bends to the east. About sixty miles further on we come to Melozikakat. From this on the course is a little to the north of east to the Tanana River, which enters from the southwest and is several hundred miles long. Before reaching the Lower Ramparts, abrupt limestone cliffs, Minook Creek is passed. Here gold was discovered, giving rise to a mild stampede in '96. At the Shaman Village the river broadens out, and further on islands occur, with which the river is thickly dotted for the next seventy or eighty miles.

FORT YUKON

now abandoned, is situated nearly two miles above the mouth of the Porcupine, a great stream coming from the region of McKenzie Bay in the north, and is distant from St.

Michael's about 1,300 miles. At the Yukon Flats, a short distance above, the river has practically no confining valley and the bordering plains extend to the horizon on either side, unbroken by a single elevation, and having the appearance of the existence, at one time, of a lake basin or an abnormal expansion of the river which is here divided into numberless channels by a labyrinth of islands.

Owing to the unusual lowness of the water on the flats there were only two small steamers able to make the ascent of the river after August 12th. One of these was the *Weare*, whose arrival in Dawson with 160 tons of provisions was hailed with rapturous delight.

Near the head of the islands we pass the camp of Senatee, the most powerful chief in the whole Yukon country, and at one time a murderous cannibal; but time has now tamed his ferocious disposition, and a handful of tea is enough to draw from him a long oration descriptive of his enduring love for the white race.

CIRCLE CITY.

This is the distributing point for the mines of the district of Birch Creek, the upper waters of which are reached by a portage of six miles to the east. Birch Creek is about 150 miles long and runs nearly parallel with the Yukon from the bend above the flats. At Fort Cudahy, about 250 miles further up the river, there are several stores and places of amusement. The post is at the mouth of Forty Mile River, said to have a total length of more than 100 miles of which the lower twenty-three are in Canadian territory. Its position on the map is defined by the intersection of the 64th degree of north latitude and 141st degree of west longitude. Its bars have yielded a large quantity of gold, one man having taken $52,000 in the season of '96. The average value of labour is $10 a day, and bars yielding less have been abandoned.

Fifteen miles below Forty Mile Post a large mass of rock stands on the east bank, known as Old Woman's Rock, and according to an Indian legend represents a scolding wife who, for her viciousness, received a powerful blow from her husband that sent her clean across the river, here half a mile wide. On her landing she was converted into a mass of rock, which remains to this day a memorial of the unhappy woman. A similar rock on the west side, being known as Old Man's Rock, testifies to the power of the Shaman (akin to magi), and is all that remains of her husband who, seeing the terrible result of his unkindness, it is reasonable to suppose, was petrified with astonishment. Fort Reliance is about forty miles

from Cudahy and six and a half miles from the Klonjec village at the mouth of the best salmon stream in the whole Yukon country. It is a small river about forty yards wide at the mouth and of a beautiful blue colour. Lieutenant Schwatka, of the United States Navy, named it Deer River, but it is known to the world as the Klondike.

DALTON TRAIL.

The trail (so far as there is any trail) is from the head of the western arm of Lynn Canal and starts at Portage Cove, across the peninsula to the eastern banks of the Chilcat River, thence along the banks of the river for six miles, when it crosses and follows the western bank for about thirty miles to Klukwan on the Kleheena River, thence six or eight miles to the British line, thence about 150 miles to the Dalton Trading Post on a branch of the Alsec River, thence in a northerly direction about 160 miles to Fort Selkirk at the mouth of the Pelly River. This is the favourite route for live stock. There is a good deal of timber along the route and large stretches of open grass land are met.

THE POOR MAN'S ROUTE.

This is an overland route, for which Kamloops and Ashcroft in the interior of British Columbia, and on the line of the Canadian Pacific Railway, are the outfitting points. The route lies over an old trail from Lac La Hache to Soda Creek along the Fraser River to Quesnelle, thence to a settlement on Fraser Lake 152 miles further on. In the next stretch of 135 miles Mud, Nechaco and Blackwater Rivers are crossed, several Indian settlements are met and excellent grazing for cattle can be found. We next come to Stewart and from there to Hazleton it is 235 miles, or as the Indians say, "it is twenty pounds of fish," meaning seven days' travel. From Hazleton to Glenora is about 200 miles. From this point to Teslin Lake the country affords good grazing in the spring and early summer, as already mentioned. The distance between these two points over a route recently discovered is said to be only 130 miles.

The country in the region of the lakes is not now considered inaccessible, and if official reports of the United States and Canadian authorities, together with the statement of Mr. Neill McArthur, who spent eight years on the Yukon and tributaries, are to be relied upon, the country is exceedingly rich. But the old story of scarcity of provisions obliged men to abandon their prospects.

MISCELLANEOUS INFORMATION.

The following articles should be included in the outfit: 1 mortar and pestle, 1 sieve of 40-mesh, 1 magnifying glass, 1 magnet, 3 canvas sample bags, 1 compass, 8 lbs. of oakum, 6 lbs. of pitch, 1 pair rowlocks, 3 lbs. candle wick, pail and saucepan.

RAIN AND SNOW AT DAWSON CITY, 1896.

Snow fell four days in January, five in March, four in April, one in May, two in September, six in November and six in December. In the same year it rained two days in April, four in May, twelve in June, three in July, eight in August, two in September, and one in October. The coldest day of the year was January 26th—68 degrees, and the warmest days were July 1st and 2nd—81 degrees.

WORK ON THE TRAILS.

The material for three aerial cable freight tramways has arrived at Dyea. These facilities for moving freight should entirely alter and simplify the mountain climbing ordeal and render the journey to the lakes a far less arduous task.

WHITE PASS.

A large number of men are now at work constructing bridges and making a waggon road to the lakes where, it is fully expected, steamers will be ready to accommodate the great rush in the coming spring. The completion of these improvements will so alter the character of the journey as to make a degree of pleasure possible, where toil and trouble were experienced before.

WHITE HORSE RAPIDS.

A tramway, intended to take boats, passengers and their supplies, is being built around the rapids. A party of experienced men have been engaged for some time piloting miners' boats.

SOME FEATURES OF THE COUNTRY.

The country is well timbered along the margin of the river, but inland the ground is covered with what is locally known as nigger grass. This is a coarse grass which falls each year and tangles in such a way as to make walking very difficult. On this a scrubby growth of trees is found extending up the

mountains. Above the timber line the rocks are bare; the miners keep to the top of the ridge when travelling; below the rocks are covered with from twelve to fourteen inches of moss.

Prospecting is done in winter. The moss and decayed rubbish is cleared away and fire is applied to burn down to the bed-rock. The frost gives way before the fire twelve to sixteen inches in a day. Having burned down to bed-rock, it may be fifteen feet or so below the surface, and found the pay-streak, drifting is started. The upper part is usually barren, and the pay dirt lies on the rock beneath, and above it in some instances to a depth of four feet.

The accompanying map of Alaska and the Northwest Territory, in which the mines are located, shows the Mackenzie River, referred to in the report of Commissioner Ogilvie, and an immense extent of country that has never been explored.

The mines so far discovered are the gravel deposits in an area of country small compared with all that in which other deposits may be found. So far as thorough prospecting is concerned, the basin of the Yukon has hardly been entered. The tributaries of the Yukon vary in length from 60 to 300 miles.

That there are possibilities of discoveries of much more wealth cannot be doubted.

The headwaters of the Klondike have not yet been explored owing to the difficulty in getting in provisions. Hunker Creek is held in high esteem. It has two forks, one known as Gold Bottom, the other as Last Chance; both are fully staked and each stands well. Too Much Gold Creek (so called because Indians saw specks of mica at the bottom) enters the Klondike fully fifty miles above the mouth, and as high as half an ounce has been taken out of a prospect hole.

Recent reports from Sulphur and Dominion creeks confirm the early accounts of their richness. Dominion is longer than Bonanza and Sulphur is about fifteen miles long with a bottom averaging 600 feet from base to base of hills. Bear Creek is said to be as rich as Bonanza below Discovery claim. Prospects on Victoria Creek have shown as high as $150 to a pan. Skookum Pup promises immensely. This stream enters Bonanza at No. 26 above Discovery. The two claims were sold for $25,000 and a little later $30,000 was taken from the lower claim and only three box lengths had been worked. The pay gravel runs thirty feet wide, ten feet deep and about

a mile up the gulch. Eldorado meets Bonanza at No. 7 above Discovery, from which a single clean-up yielded 365½ ounces, and claim No. 67 is at the source of the main stream of the tributary. It is extremely rich from its mouth to the forks at No. 47.

A party of twenty-five men, arriving in Victoria as late as December 3rd from Dawson, bring down astonishing accounts of the output of gold, not only of Bonanza and Eldorado, but also of Sulphur Gulch, Hunker, Gold Bottom and Last Chance Creeks. The problem of how to export the full volume of the yellow dust, which has been largely increased since the discovery of Davis, Mosquito, Cricken, Miller, Glacier and several other creeks, becomes a really serious one. At a modest calculation there will be twenty-five to thirty-five millions to add to the world's treasure next spring.

It may be said that the opinion that ranks these placers peerless seems just.

Indian Creek joins the Yukon midway between the Klondike and Stewart Rivers and all along the creek good pay has been found. Further up lies the head of several branches of the Stewart on which good prospects have been found. Gold has been found in several of the streams joining the Pelly and on the west side above Selkirk some work has been done with good results, and on a large creek, some thirty or forty miles below Selkirk, fair prospects have been found, but the difficulty of getting supplies prevented extensive prospecting.

Gold has been found on the head of the Alsec River near Chilcat Inlet, and all along the Hootalinqua. There is a belt of silver-bearing ledges which extends from the Pelly to the Stickeen. In this region, without doubt one of the richest in the entire country, argentiferous galena is known to occur in great deposits. A very large percentage of the streams between the Stickeen and Skeena give placers of $5.00 to $10 a day. From the district of Teslin Lake, where gold quartz and especially copper ores abound, to Quesnelle, mineral-bearing ledges have been noted by early explorers.

From what has been said it may be assumed that in all this country there is gold, while in this particular zone it is especially abundant. This zone lies outside of the Rocky Mountains and distant from them by about 150 miles.

There is no doubt that this country offers to men of fortitude and steadiness an opportunity to make more money in a given time than they possibly could make anywhere else.

With the improved means of transportation new camps and towns are springing up like magic.

CAMP LIFE.

Going into camp the first thing to do is to put up the tent; then a quantity of dry wood is collected to make a fire and prepare the hurried camp meal, which usually consists of flap-jacks (pan-cakes), bacon and coffee, after which the weary traveller lights his pipe and prepares a spring mattress of cedar and spruce boughs on which to spread his blankets or sleeping-bag. If he is in a sheltered spot the ice and snow and howling wind without will not disturb him.

A NEW DISCOVERY.

The latest rush was to Dean Creek, heading towards Eldorado and about two miles south of Dawson.

WOMEN ON THE TRAIL.

So far from women being a bar or a hindrance to men, the writer having seen them on the trail, believes they are rather a help and a spur when difficulties arise. Few men would falter or turn back when a brave woman was leading the way. Miss Alice Hyde was met at the summit of the White Pass, her face turned towards the wonderland of the North. The "first meadow" was ahead—a veritable quagmire—but nothing daunted she pushed on and to-day owns a claim having "pay-dirt" six feet in depth and twenty-two feet in width. Writing from Dawson she says: "During the month of November the sun only showed his face for about three hours each day, but there was twilight for two or three hours longer. The northern lights are very grand, the sky appearing to be ablaze at times; their beams darting through the air make a whizzing noise and cast a shadow on the ground. It is strange that the lights appear in the South in this latitude.

"Once over the mountains the trip was by no means as I had been led to believe. When I think of the wildness and grandeur of the scenery along the route, and of being in the heart of a country I had only heard of as the home of the grizzly bear, I feel like one in a dream. There are about thirty families here. The town is very orderly, but not picturesque. Last summer there were only two things more plentiful than dogs—mosquitoes and gold dust. The mosquitoes were a plague, and no one should be without netting to protect the face; the dogs continue a menace to limb by day and a howling horror by night. The people are very kind and seem anxious to help one another. No one should come without ample provisions as it is not considered likely that the transportation companies on the river will be able to bring up suf-

ficient supplies for the thousands said to be on the way.

"The following list may be of value to those intending to make the trip: 3 suits winter underwear, 1 suit Mackinaw and bloomers, 3 pairs wool stockings, 1 undervest (chamois), 1 warm dress, 1 short skirt of heavy material to wear over bloomers, 1 pair heavy wool gloves, 2 pair heavy wool mittens, 1 cap, 1 night dress (flannel), 1 wrapper, snow glasses, 2 pair slippers, 1 pair walking shoes, 1 pair felt boots, 4 pair heavy stockings, 1 pair gum boots, 4 pair moccassins, 1 warm hood. 4 suits summer underwear, 1 suit summer waist and bloomers, 1 dress (summer), 3 shirt waists, gloves to protect hands from mosquitoes, aprons, hat with broad brim to keep netting away from face, light night dress.

"The following articles should be packed in a box in sufficient quantities for the journey (a month) to prevent opening of large packages: Flour, bacon, germea, rice, beans, sugar, extract of beef, baking powder, salt, pepper, pilot bread, dried fruits, canned beef, chocolate and condensed cream. A separate canvas bag will be found a convenience for the following articles of bedding: 1 feather pillow, 3 pair of good blankets, 1 piece of canvas, instead of sleeping bag, 1 water-proof sheet, 1 ready-sewed tick can be filled with dried moss, 1 small hand bag for sundries. A lady's outfit for a year will cost at the least $400—this sum will not purchase a good outfit for a man.

CLIMATE OF THE YUKON.

From observations by U.S. authorities in the Autumn of '89, the temperature first touched zero on Nov. 4th, and the last zero recorded in the spring of '90 was on April 30th. The lowest temperature being 59° below zero on January 1st.

Snow storms may occur between September and May. In June the sun rises at about 2 a.m. and sets at 10:30 p.m., giving more than 20 hours of daylight, and twilight the remainder of the time. The mean summer temperature rises to between 60° and 70°. There is almost a continuous sun in summer time. Evaporation is very slow, owing to the thick moss which will not conduct the heat.

Report from the Northwest Mounted Police under Staff Sergt. Hayne of the Meteorological Service.

Table showing the Highest and Lowest Temperature at Fort Constantine, Yukon. Winter 1895 and 1896.

Date.	Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May.	
	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
1	25°	15°	-14°	26°	-24°	-38°	-20°	-32°	-7°	-26°	11°	-24°	30°	5°
5	20	11	-6	-16	-54	-61	-5	-21	18	0	8	-38	50	30
10	11	-1	7	-6	-12	-25	-27	-45	12	-20	15	-31	61	30
15	0	-4	9	-8	-31	-42	-35	-55	39	6	21	1	56	38
20	1	-9	-21	-45	-16	-42	4	-20	33	14	33	20	55	37
25	26	12	-25	-49	-48	-56	-3	-15	28	11	43	27	58	35
30	-13	-27	-13	-26	-13	-42	.....		9	-5	39	19	63	33.

WINTER OF 1896 AND 1897.

No continuous fine weather occurred until May 4th, after which date and during the balance of the month the temperature frequently rose above 60°. The Yukon River froze up on Nov. 5th and broke on May 17th. Forty Mile River broke up on May 15th and on the 31st the temperature reached 75°. In June the reading was 70° for twelve days and on the 31st, 80°. The highest temperature in July was 83°; rain fell 11 days, and in October 12 days.

It may be said winter set in about the end of September. Zero was first touched on October 5th, and the average temperature of that month was 26°.

MINER'S CABIN.

The miner's cabin is a small affair, about 12x14 feet. The roof is heavily earthed and is usually very warm. Miners who do not work their claims in winter, very often, become very indolent, only eating those things most easily cooked. This

manner of living sometimes leads to scurvy. It is therefore best to procure the most varied outfit of food that can be obtained.

MINER'S OUTFIT.

It would be unwise to go to the Yukon placing any dependence on a certainty of obtaining what was required from the leading houses in the country. A number of steamers were unable to get up the Yukon River with supplies, (as mentioned in the notes on the St. Michael's route.) The gold seeker should therefore go prepared to be independent for a year.

For convenience the outfit is divided into three parts.

It is winter that one must think of in preparing, not summer.

Clothing.

3 Suits heavy wool underwear.
3 Heavy wool overshirts.
1 Heavy wool sweater.
2 Pair trousers, one close-woven for winter wear. Would be improved by cotton batting quilting in seat and over thighs and knees.
2 Pair good overalls, one felt lined.
1 Vest.
1 Sack coat.
3 Jumpers.
1 Coat (skin preferable with hair on, turned inside) with warm lining and belt.
1 Wide brim hat for summer.
1 Fur cap, large enough to pull down over head and with fur-lined ear flaps.
1 Wool neck scarf.
1 Pair heavy nailed boots for prospecting on rocky ground.
2 Pair gum boots, leather soled and nail-protected, for work in the cold and marshy ground in winter.
3 Pair seamless felt ankle moccasins.
1 Pair of strong slippers for indoor wear.
2 Pair heavy blankets (wool.)
1 Fur robe for sled travel and cover at night (sheepskin is good and not expensive)
20 Yards mosquito bar netting for veiling to protect from mosquitoes in summer.
1 Sheet rubber water-proof cloth, 12 feet square.
2 Leather or deer hide packing cases for small articles. Towels, etc.

1 Set pack straps.
1 Tent. 1 sleeping bag.
1 Pair blue goggles to prevent snow blindness.

In the matter of food, individual tastes differ, and the range of selection is wider than with the clothing. Life in the Yukon is not all a picnic. One going there eats to live. The following is a good list :—

300	Pounds	flour.
50	"	Germea, contains more nutriment than oatmeal, and is very easily prepared.
15	"	Rice.
150	"	Bacon, boneless, sliced, packed in tins.
100	"	Beans.
80	"	Potatoes (peeled) evaporated.
100	"	Dried fruit, stoned and peeled, and seedless raisins.
25	"	Dried beef, chipped, in tin.
25	"	Tea.
80	"	Sugar.
5	"	Coffee extract.
		Condensed milk (20 cans).
75	"	Vegetable biscuits.
40	"	Lard.
5	"	Beef extract.
2	"	Pepper.
10	"	Baking powder.
10	"	Salt.
60	"	Dried soup vegetables.

Most of the above articles should have water-proof covering. Avoid carrying waste--for example, the bones and rind of bacon, the stones of fruit, etc. All the articles which are compressible have compressed. From the dried soup, vegetables and beef extract, a considerable quantity of soup can be made at one time, frozen in cakes, and then used as needed. To prepare it, thaw and heat over a fire, adding water. The packages should, as near as possible, be of a uniform weight, 50 or 70 pounds, otherwise it will be difficult to handle them.

KITCHEN UTENSILS.

1 Stove and pipe, the latter in flat sheets, with seam edge crimped for joining.
1 Fry pan, with folding handle.
2 Pots, with cover and bail, sizes to nest together.
1 Kettle.
1 Tea pot.
2 Pans for bread baking, sizes to nest.

2 Soup plates, blue or graniteware.
2 Cups " "
1 Can opener, knives, forks, spoons.
Aluminum ware is light and easily cleaned.

TOOLS.

2 Gold pans, 1 flask quicksilver.
1 3½ inch pick, with large eye, and one for heavy work.
2 handles.
1 Shovel.
1 Axe.
1 Hatchet, hammer head, claw.
1 Timber saw.
1 Riphand saw.
1 Brace and bits.
1 Saw set and file.
1 Square.
1 Jack plane.
10 pounds 12-penny nails.
20 " assorted nails.
2 Pair 8 inch strap butts.

MISCELLANEOUS.

60 Pounds candles.
10 " Soap.
1 " Glycerine. It does not freeze. Most valuable in the cold north for medicinal use. Good for cuts, bruises, frost bite. Apply externally for sore throat, use internally for bowel complaint.
A combined rifle and shotgun, and ammunition.
Fishing tackle. 100 feet ¾ inch hemp rope.

A small roll of surgeon's plaster, antiseptic gauze for dressing wounds, and an assortment of medicines in the form of pellets and capsules, particularly laxatives and remedies for dysentery.

This list will look large to men not accustomed to mining or out-door life. It is difficult for them to realize the requirements for a year in the frozen North. To some of those who now go in search of gold the reward in the end will prove to have justified their action; but will it to the many? Anyway, if you must go, go prepared to preserve life and health, and to mine without unnecessary waste of time, which in the Yukon is both valuable and costly. To accomplish these things, be sure in preparing to have as efficient an outfit as money will buy. A dependence on what is being offered as an outfit by San Francisco advertisers and others who know nothing about the requirements is only a form of premeditated suicide.

PART 2.

Geology of the Yukon.

Notes on Alluvial and Metalliferous Prospecting.

Regarding the geology of the Upper Yukon Prof. Linderman, who explored the region in '71 and '73, says: "The mineral zone extends east and west. The geological formation where gold is found is a black slate of the carboniferous age."

"I think the entire country is mineral territory and the Eastern Alaskan range gold bearing. The placers being found on every stream leading from the range. I crossed and examined fifty-two streams and rivers and panned gold in all of them. I took gold out of the Katrin Hills about 230 miles north of Cook's Inlet. On Porcupine I found gold and some nuggets."

"The dip rock varies from 11° to 7°. There were tremendous ledges of low grade ore that would be profitable to big mills."

This extract from Prof. Linderman's report coincides, in a wonderful manner, with the report of Boundary Commissioner Ogilvie, just issued.

GOLD.

Gold has ever been, from the earliest ages, one of the most potent factors in the affairs of men. In what country or in what age it was first discovered history does not tell. Some accounts point to India, but all are mere conjecture. Certain

it is however, that it possesses a remarkable influence and a power, before which men and even nations bow. With the discovery of gold cities and civilization spring into being and everywhere, as a result, the arts and sciences flourish. Several theories have been advanced to account for its origin, one is that gold in nature is always found associated with silver, and the ratio of gold to silver is not uniform. If silver never occurs without some gold it follows that the gold has grown from the silver, and the varying proportions found in different mines are due to the length of time the growth has been going on. Another writer says, that the scientific world generally in later years concedes the fact that the metals are a product from the solutions precipitated by nature's electrical forces, and adds, it is also an ascertained fact that the nearer we approach to the North Pole the stronger are the electro-magnetic forces precipitated.

Everywhere the origin of gold is the same. It is liberated from its rock matrix by the natural processes of the erosive agencies of frost and disintegration, and is placed where found by glacial action or by running water. The action of frost is principally in breaking the lodes in place into fragments, the grinding together of these fragments in the streams and gradually wearing away liberates the gold. Once freed it works its way downward to bedrock, while its once rock matrix is carried on as sand to the sea.

ALLUVIAL PROSPECTING.

The water washing away gold-bearing matter carries the lighter particles down the stream while the heavier particles are left behind. The point where the stream changes direction is very often the richest. The sides of swift currents and the inner rim of curves should be examined. Where an accumulation of gravel occurs on the slope of a hill or along the course of a stream where gold has been found, a portion of it should be "panned" as it may contain rich runs of gold near the bedrock.

Wherever drift matter may be found or supposed to exist, do not neglect it though it be covered with vegetation. The deposits of rich alluvial matter found in the tributaries of the Klondike were covered with twelve and fourteen inches of moss. Along the course of a river there may be many bends, these bends are much more likely places to find rich deposits than where the stream is straight. In ages gone by the gold-bearing drifts may not have followed the existing course of streams, but may have been at an angle to the present channels, wherever these old channels are found careful

search should be made and an endeavour to trace them from the points where the present streams cut away. The trouble taken in this work is often well repaid by the discovery of rich diggings. Not only should the beds of streams and dry creeks at the bottom of valleys be examined, but the characteristics of loose rocks in gulches and ravines should be observed. Eddies and waterholes are likely places, and should the body of water in a stream be too great it must be turned by digging trenches.

The appliances used in prospecting are the pick, shovel and pan.

TO "PAN OUT" GOLD.

The operation is very simple yet it requires some skill.

Fill the pan with gravel or other matter, as you find it where working. Then pour in water and shake round about and from side to side, allowing all soluble matter to pass over the edge. This is done by tilting the pan to one side.

It is convenient to have two pans or else a second vessel, so as to save time. In this way the rough work can be done rapidly, the fine stuff containing gold being thrown together and washed carefully over the other pan, the prospector keeping in mind the number of pans. A heaped pan-load weighs about twenty pounds, so that one pan represents the 100th part of a short ton. The size of a gold pan used in California is about twenty inches circumference and four or five inches deep.

THE AVERAGE VALUE OF GOLD.

A grain of pure gold is worth a little less than 4⅓ cents. The average of gold from many placers is about 3¾ cents per grain. About 1½ yards of gravel when dug is equal to one yard before being dug. Several pans of dirt can be measured and the number to the yard determined. In sinking shafts for testing purposes energy should not be wasted in making them too large, 2½ feet is large enough for considerable depths.

THE METHOD OF REACHING PAY-DIRT.

It is always the case that pay-dirt—dirt containing gold—lies next to the rock. This being the case it is necessary to clear away the gravel or dirt that lies between the surface and the bed-rock.

In the Klondike the ground is frozen to a depth of between 10 and 20 feet. To reach the bed-rock large fires are made—wood is plentiful—this naturally thaws out the frost. The bed-rock being reached and sufficient pay being found to

warrant a continuance of the work, the prospector then commences tunnelling or drifting. The dirt then removed is hoisted to the top and placed on the dump to await the coming of spring.

This method of thawing out the frozen ground enables the miner to remove the pay-dirt, thus doing away with the long period of idleness.

WASHING THE PAY-DIRT.

After working until April or May the water begins to run. Then the timber is prepared and the sluice boxes put in.

SLUICE BOXES.

After the course of the water is turned along the hill-side, a dam is built and sluice boxes erected. These boxes consist of a series of wooden troughs, having a suitable inclination, across the inside of the bottom small strips of wood are fixed. If the gold is fine the grade is slight, if coarse a greater pitch is given. By making one end of the box narrower than the other end, they can be made to fit one into the other, thus making a sluice of any length desired. The earth is then thrown in and the running water washes it away leaving the particles of gold in front of the bars on the bottom of the sluice boxes.

ROCKERS.

When it happens that a claim is too far from water, a rocker is used. The rocker is just what its name indicates. The dirt is placed within it and it is rocked until the dirt and gold have been shaken apart.

PROSPECTING FOR MINERAL-BEARING ORES.

No advantage would come to the prospector from a discussion of the origin of mineral-bearing ores, but it is well something should be known of their depositions.

It is a generally accepted belief that in creation's early days the earth was a molten mass, and that the metalliferous ores were ejected from the interior by volcanic action through fissures in the outer crust formed by a more or less lengthy period of cooling.

In any particular district mineral lodes usually follow the same direction and will be found to run parallel. In some districts a second series occur and run right across the first, but these are generally less rich and are of a different nature of mineral.

PROSPECTING.

Prospecting on the hills may be done with comparative ease if the country is exposed, by observing the outcrops and tracing them to lower ground. The sides of valleys, land slips, cliffs, gulches and cañons exposed to view by the action of water should be studied carefully. On rough ground the direction of a lode will appear crooked.

If "float" (fragments of mineral-bearing rock) occurs the prospector should follow it up, "panning" as he goes until he ceases to find any more float and the indications of colour in the pan lessen, then skirmish on the side or end hills for a lode, remembering that the float was washed down according to the law of gravity. If he succeeds it is not likely to be isolated, it may represent many more richer or poorer in the district.

Long exposure to the weather may have rendered the float quite barren, while the mother lode may be very rich. The nearer to the lode the more angular and less worn it is. The better locations for the occurrence of mineral deposits are at or near the contact of two different formations. Notice sudden changes and faults in the ridge. Search should be made for the rock known to be the matrix of veins. The matrices are fluor spar and calc spar, but quartz is the most general. When the float is found to be honeycombed and stained a reddish brown by iron oxide, it is considered an excellent indication. Exposure to the atmosphere decomposed the iron or copper pyrites and stained the rock. When such rock is found no experienced miner will neglect the opportunity of having it tested. If he submits it to the camp expert, his opinion may be no more reliable than the average weather prophet. The best plan is to have an assay made by a competent authority, but the miner may make a test himself which, with some practice, may give fair results.

The prospector should become familiar with the appearance of the oxides in the outcrop as they indicate the nature of the sulphides in the rock beneath.

HOW TO DISTINGUISH THE PRECIOUS METALS.

Silver is white, but when found on the surface is usually tarnished; it can be flattened by beating and is easily cut; the ore usually contains a percentage of gold and copper. It is found in limestone, sandstone, trap, porphyry and slate; its gangue is usually quartz, fluor spar and calc spar. Silver glance (sulphide of silver) is usually found along with copper,

lead, iron, zinc, antimony, etc.; its colour is greyish or blackish; in the sunlight it has a bright lustre. It is soft and is fusible at a very low temperature.

If silver-bearing ores be heated in the fire and dropped into water drops of the metal will appear on the surface.

Strenuous efforts are being made by the Bi-metallic League in the United States, England and other countries to advance the price of silver, but unfortunately the best efforts have so far proved unavailing. The prospector, however, should not be indifferent to silver-bearing ores. Chloride of silver (horn silver) found in some districts—notably in the Slocan and Trail districts of B.C.—contains a very large percentage of the metal. This is a soft mineral looking like horn or wax and cutting like it; occurs (often with carbonate of lead) in the upper parts of lodes.

Ores of copper occur in every age and in lodes and deposits. The oxide stain of decomposed pyrites containing copper is black, unless iron is present; the ores can be cut with a knife. A boiling solution of nitrate of soda and citric acid will dissolve copper pyrites. The solution will cover a steel blade with a copper film. To test copper ores in camp, roast and drop while hot into grease. When exposed to a flame a green colour may be seen if copper is present. Native copper is found in tree-like and fanciful shapes—colour red. The ore usually carries gold and silver.

Lead.—The ores of lead, like copper, occur in many rocks, some of which are limestone, granite, sandstone, &c. Galena and carbonate (white lead ore) are the principal ores of lead. They are often very rich in silver. Galena is easily known by its bright appearance when cut. Carbonate is of a dull colour and when broken up is like clay or earth.

COMPOSITION OF ROCKS.

The first rocks formed were the lower crystalline, Archaean granite, and, as the earth cooled, solidified, forming a crust and, owing to the shrinkage of the interior, cracked and through these cracks streams of the molten matter poured. Then through disintegration aided by the destructive agency of carbonic acid gas, began the slow process of formation of sedimentary rocks, which in turn, from pressure and other causes, were to harden into rocks.

Rocks consist essentially of minerals, and the minerals of the common rocks are of four groups: 1. Quartz, called in chemistry silica; 2. silicates or compounds of silica; 3. carbon; 4. carbonates, or compounds of carbon.

Quartz is the commonest of all species and is one of the hardest minerals. Most sandstones and conglomerates consist largely of quartz (nearly every colour, generally white or brownish.)

Fragmental rocks include sandstones, shales and conglomerates. Stratified rocks are in beds and sedimentary are deposited as a sediment out of the decomposition and washing down of the rocks of the age preceding.

Crystalline Rocks.—Some metamorphic, some igneous metamorphic rocks are those changed by heat or pressure; examples, marble, mica, schist, gneiss and much granite, &c.

Igneous rocks have come up melted through volcanic fissures from the heated interior of the earth; they include lavas, porphyry and granite.

Porphyritic rocks are those having distinct feldspar crystals.

Sandstones are made up of particles of sand cemented together; colour gray, brown, white, red, &c;

Conglomerate.—Consolidated gravel.

Slate.—A slaty rock imperfectly formed (schists applied to certain slaty rocks.)

Metamorphic Rocks.—Granite, a crystalline rock of quartz, feldspar and mica or hornblende: colour light or dark gray.

Gneiss—Is like granite in construction, and is made up of the same minerals as granite, only containing them in parallel layers.

NATURE OF A FEW MINERALS.

Schists—Mica schist consists of fine layers of quartz and mica; talc schist, fine layers of quartz and talc; chlorite schist, fine layers of quartz and chlorite; hornblende schist, fine layers of quartz and hornblende.

Feldspar—Colour usually white or red, sometimes gray, black or green, so very hard will scratch glass.

Talc—A greenish, yellowish white, or sometimes colourless mineral of a pearly or resinous lustre. Is greasy to the touch, soft, yields to the finger nail.

Chlorite—A dark green, generally foliated and scaly mineral.

Hornblende—Of many varieties, mostly greenish black, and also whitish colour.

Fluor-spar—Is usually purple, sometimes yellow, white, green or blue. If heated in a dark place a phosphorescent light appears, not unlike a precious stone. It is soft.

Calc-spar—(Carbonate of lime) generally transparent, and of a gray-rose, honey-yellow or violet shade.

MINE SURVEYING.

Mineral Deposits—The deposit rests on the foot-wall and that covering the deposit is the hanging wall. These are known as the floor and roof respectively.

The Strike or Course of a Deposit—is the angle formed with the plane of the lode and the plane of the horizon. Its dip is the inclination downward measured in degrees from the horizontal. When the dip is great it is measured from the vertical and is then termed the underlie or hade.

Out-crop—The portion of the mineral deposit at the surface is known as the out-crop or apex.

Cross Courses—These are veins coursing at nearly right angles to the chief lodes of any particular district.

A Shaft—Is a pit sunk down from the surface.

Levels—Are horizontal excavations along the course of a vein, or horizontal passages by which access is gained to workings of a mine.

A Slope—Is a working from which the ore is extracted. Above a level the working is an overhead or back slope. An "underhand" slope is the working downward from the floor of the level.

CALCULATION OF AREAS.

Gunter's chain, 66 feet long, is most frequently used in measuring lengths.

To find the area in a piece of Ground:

1. If rectangular, multiply the length by the breadth.

2. If triangular, multiply the base by half the perpendicular height.

SOLID OR CUBIC MEASURE.

1728 cubic inches.....equal 1 cubic foot
27 " feet..... " 1 " yard
4 feet x 4 feet x 8 feet=128 cubic yards.... " 1 cord wood

TROY MEASURE.

24 grains.....equal 1 pennyweight (dwt.)
20 pennyweights..... " 1 ounce (oz.)
12 ounces..... " 1 pound (lb.)

Standard gold consists of 22 parts pure gold alloyed with two parts copper or other metal, and according to the quantity of alloy is called 9, 12, 15, or 18 carat—*i.e.* that number of parts of gold out of 24. Standard silver is of finest 11 oz. 2 dwts. fine to 18 dwts. alloy.

A cubic foot of pure gold weighs 1,210 lbs., pure silver 655 lbs., cast iron 450 lbs., copper 550 lbs., lead 710 lbs., platinum 1,220 lbs.

A ton weight of the following will average in cubic feet: earth 21, clay 18, river sand 19.

LOCATING CLAIMS.

The method of locating a placer claim is simple. The prospector must not exceed 100 feet up and down the creek, in the general course of the valley. The width of the claim can run from base to base of the hills. If there are no claims located on this particular stream, the claim is known as the "discovery claim," and the stakes are marked O. The next claim up the creek is marked No. 1, as is the next going down the stream. There can be but two claims marked No. 1 on any one stream. Discoverer's claim may be 500 feet.

Every miner and employer of a miner will require to take out a license, the fee for which will be $10. In case of a company it will be $50 or $100, according to the amount of the capital stock.

The fee for recording and renewing mining claims will be $15.

A royalty of 10 per cent on the gold mined will be collected by the government if the claim produces $2,500 per year; smaller claims are exempt.

If a prospector should locate a claim on any creek or river on his way to Dawson, he will not have a legal title to it unless he is in possession of a license. The towns in which certificates are issued are Victoria, the Provincial capital of British Columbia; Vancouver, the terminus of the C.P.R., and Nanaimo, the chief seat of the coal industry of the coast. From these points steamers run to the North.

The Mining Regulations are not printed here, as it is expected they will undergo some change in the early spring of 1898.

THE CUSTOMS STATIONS.

On the routes to Dawson City are Glenora, head of navigation on the Stickine River, Lake Tagish, about 72 miles from the coast, Fort Selkirk, on the Pelly River, a post near Klukwan, on the Dalton Trail, and Dawson City.

Invoices of goods should be produced in duplicate when they are purchased, and collections will be made in accordance with prices therein named, not on the value of the goods

where the collection is made. On most goods subject to ad valorem duty, the weight of the receptacle is included and assessed the same as the coutents. The exceptions are :—

Miners' blankets in use, personal clothing in use, cooking utensils in use, such quantities of each as will make the owner comfortable for a reasonable time.

All kinds of machinery imported exclusively for the mining of ores, free.

The duties on the most important articles are :—Flour, .60 per barrel; beans, .15 per bushel; bacon, .2 per pound; meat and meat extracts, .25 ad valorem; and tobacco, .50 specific.

COMMISSIONER OGILVIE'S LECTURE

On the History, Resources and Probable Future of the Yukon Country.

The distinguished explorer, Wm. Ogilvie, F.R.G.S., of the Alaska Boundary Commission, having returned to Victoria after an absence of several years in the North, addressed a public meeting on November 5th, on the subject of the Yukon Goldfields. As no other report of equal weight and importance, on this subject, has reached the outside world, the following extracts from the lecture will be read with interest as an authoritative statement of facts.

After describing the routes he said :

"In 1872, September 2nd, two Irishmen named Harper and F. W. Hart and Sam Wilkinson an Englishman, left Manson Creek to go on a prospecting trip down the Mackenzie River. They made their way down to Nelson River, where they made a cache and a dug-out with which to descend the river.

In 1891, he, Mr. Ogilvie, was sent by the Dominion to the Northeast portion of the Province, and going in the trail followed by Harper saw the cache they had told him about in 1887. Harper and his companions made their way down to the Liard River, where Wilkinson left them, and then down the Mackenzie across to the Peel and thence over to Bell's River, an affluent of the Porcupine, down the Porcupine to Fort Yukon, (380 miles from Dawson) and up to White River a distance of 400 miles, where they found some gold. The result of their prospecting was as follows: On the Nelson, nothing; on the Liard, colours; on the Mackenzie, nothing; on the Peel, fair prospects; on the Porcupine, colours; and prospects everywhere along the Yukon. Provisions giving out they made their way down the Yukon to St. Michael's.

Next summer Harper returned and built Fort Reliance, six and-a-half miles from the Klondyke, and for many years traded and hunted, but never prospected on that river, and if he had he would not have found anything, for it is a swift mountain stream which has washed away all the fine sand and gravel, consequently the gold would sink out of sight,

176250

and in those days no prospecting was done but on the bars in the rivers and creeks.

In 1882 gold was found on the Stewart River, and in 1886 Harper established a trading post at Fort Selkirk, and in the same year some prospectors found gold at Forty-mile, (so called because it is forty miles from Fort Reliance).

This took all the miners up to Forty-mile, coarse gold being what every miner is looking for, and the excitement continued to draw till 1891, when gold was found on Birch Creek, six miles from Circle City and nearly 200 miles below Forty-mile.

This discovery of course boomed Birch Creek and in 1891 everyone went down there.

Gold was found at the head of Forty-mile on Napoleon Gulch and was rich in nuggets. Franklin Gulch is pretty rich as are also David, Mosquito and Chicken Creeks. The last named was discovered in 1896 and was considered very rich until overshadowed by Eldorado and Bonanza.

DISCOVERY OF GOLD ON THE KLONDIKE.

The discovery of gold on the Klondike (Indian name Trondak, or diuck) was made by three men, Robert Henderson, Frank Swanson and another named Munson, who in July, 1896 were prospecting on Indian Creek. They proceeded up the creek until they reached Dominion Creek, and then crossed over the divide and found gold bottom, got good prospects and went to work.

Provisions running short they made their way to Sixty-mile to obtain a fresh supply, where Harper had established a trading post. Striking upwards to Forty-mile they came across a Californian, George Carmack, and Two Canadian Indians, or King George men,* as they called themselves.

Now one of the articles of the miner's code of procedure is that when he makes a discovery he shall lose no time in proclaiming it, and the man felt bound to make the prospectors acquainted with the information that there was rich pay to be got in Gold Bottom. The two Indians showed a route to this creek and from there they crossed over the high ridge to Bonanza (two miles from the mouth of the Klondike.)

From there to Eldorado, which joins the Bonanza about midway, its length is three miles, they climb over the ridge and went to Gold Bottom, (twelve miles above the mouth of

*Canadian Indians are called King George men to distinguish them from those of the United States.

the Klondike. Here they did half a day's prospecting, and came back, striking into Bonanza about ten miles beyond where they they took out from a little nook in a few pans $12.75 (£2 12s.).

In August, 1896, George Carmack went down to Forty-mile to get provisions. He met several miners on his way and told them of his find, showing the $12.75 which he had put in an old Winchester cartridge.

Well, that tells the story of the discovery of the creeks, that have excited and will continue to excite thousands for many a day to come.

A STAMPEDE.

"Boatload after boatload of men went up at once. Men who had been drunk for weeks in fact had been tumbled into the boats and taken up without being conscious that they were travelling. One of these only woke up when he was a third of the journey, and he owns one of the best claims on the Klondyke to-day.

The whole creek, a distance of about twenty miles, giving in the neighbourhood of about 200 claims was staked in a few weeks. Eldorado Creek, eight miles long, providing eighty claims, was staked in about the same time.

Boulder, Adams and other gulches were prospected, and gave good surface showings, gold being found in the gravel in the creeks. Good surface prospects may be taken as an indication of the existence of very fair bedrock. It was in December, 1896 that the character of the diggings was established. "Twenty-one," above Discovery on Bonanza, was the one which first proved the value of the district. Claim No. 5, Eldorado was the next notable one here, a pan of $112 was taken out. There was then a pan of even greater amount on No. 6, and they continued to run up every day. The news went down to Circle City, which emptied itself at once and came up to Dawson City. The miners travelled at all hours of the day and night, some with provisions, some without."

AREA OF THE GOLD FIELDS.

Bonanza and Eldorado Creeks afford between them 278 claims; the several affluents will yield as many more, and all of these claims are good. Mr. Ogilvie had no hesitation in saying that about 100 of those on Bonanza will yield upwards of $30,000,000. Claim 30, below on Eldorado, will yield a million in itself; then others will yield from $100,000 up. These

two creeks will, he was quite confident, turn out from $60-,000,000 to $70,000,000, and he could safely say that there was no other region in the world of the same extent that has offered in the same length of time so many homestakes—fortunes enabling the owners to go home and enjoy the remainder of their days. He would state a fact, he said, and one that was easily demonstrated, which was that we had in this province an area of from 550 to 600 miles in length and from 100 to 150 miles in width, over the whole of which prospects had been found, and we had from 90,000 to 100,000 square miles which, with better facilities for the transportation of food, would be the largest, as it was the richest, goldfield the world had ever known.

Stewart and Pelly Rivers, in the gold-bearing zone, also give promising indications. Everywhere good pay had been found on the bars, and there was no reason why when good pay was obtained on the bars the results should not be richer in the creeks.

RICH QUARTZ LOCATED.

In regard to quartz claims, seven have already been located in the vicinity of Forty Mile and Dawson, and there was also a mountain of gold-bearing ore in the neighbourhood yielding from $5.00 to $7.00 a ton. It may be mentioned here that the great Douglas Island quartz lode yields about $2.50 per ton, but it is on the coast, the other inland.

THE MOTHER LODE.

A party arriving as recently as the 9th of December report the discovery of a quartz ledge which is said to have been traced through a number of rich mining streams of the district. If this should prove to be the mother lode of the wealth of Eldorado, the permanency of the Upper Yukon as a great mining camp will be assured for years to come.

LAST WRITINGS FROM THE DIARY

OF THE

LATE ARCHBISHOP SEGHERS.

Addressed to Vicar-General Jonckaw, Victoria, B.C.

NOTES ON FULLER'S CONDUCT WRITTEN IN FRENCH.

The very interesting story told by the missionary archbishop who, while carrying the message of Christianity into a remote and unexplored land, met with a sad and tragic end, will have another interest for the traveller to the Yukon that of being a faithful record of a journey fraught with many hardships and some dangers.

The Archbishop left Victoria, as he tells us, in July '86, full of hope for the success of his mission, and proceeding on his way crossed the mountains and reached the upper waters of the Yukon at Lake Bennett, where he wrote the following account of his travel:—

"It was on July 13th (1886) as you know," the diary reads, "that I left Victoria to establish a permanent mission in the heart of this territory and carry out the design I had conceived during my first exploration of the Yukon country in 1877 for the Christianizing of the natives.

"Two routes lay before us, either the mouth or the headwaters of the Yukon I went to Alaska through the mouth of the Yukon in 1877. This time I chose the other route—first, because, though the mouth of the river is easy of access, yet the navigation of the river up stream is long, tedious and difficult, whereas the trip from Victoria to the headwaters of the Yukon is almost one straight line a little more than 1,000 miles and lasted only thirteen days. It is true the portage across the Coast Range and some of the rapids is a labour

of the most exhaustive kind, but those difficulties once overcome navigation down the Yukon River from one end of Alaska to the other is free from toil and danger, and comparatively pleasant.

"We left Juneau on Monday, July 18th at 7 p.m.. Next morning we were steaming up Lynn Canal, which is flanked by ranges of lofty peaks, each gorge of which is filled with a glacier almost to the edge of the salt water. The Indians left their former village on the Chilcat Inlet and built up a new one on the Chilcoot Inlet, making more than a living by packing for white men. They extort as much money as they can from every miner that crosses the country. Not only did they charge $13 per 100 pounds, but they made us pay them for guiding us, for ferrying us across the river, for looking after our safety and that of our packs, as they termed it, and then they exacted a 'present' for having faithfully stuck to their bargain.

"All arrangements being made, we started for the Chilcoot village in a canoe and reached the mouth of a small river called the Taiay. Here we met a most kindly disposed Hibernian, named Healey, who placed us under many and lasting obligations. Finally we left Healey's place and salt water navigation to ascend the rugged and lofty slope of the Coast Range, and to force our way through a pass into the basin of the Yukon. We formed a numerous party. Besides the five of us there were five miners and some sixty Indian packers, some with over a hundred pounds on their backs, but all in good spirits and great glee to begin our wearisome and arduous trip. It was Saturday, July 24th, the feast of Saint Franciscus Solano, whose mass I had celebrated in the morning. A fleet of canoes conveyed most of our baggage to the head of canoe navigation, some seven miles from Healey's place, but we had to walk. We first waded through the tributary of the Taiay, where we had the water to our thighs and were subsequently carried by canoes five times across the Taiay and moved into our camp early in the afternoon, the water being judged too high by the Indians to be forded. We said good bye to our canoes and slept soundly all night and prepared ourselves the following morning for the two worst crossings of the Taiay, in one of which a traveller lost his life last summer. The first crossing was pretty rough.

"Advancing cautiously with heavy gum boots over gravel pebbles and large boulders through the swift current of a seething, foaming torrent, nerving myself to the utmost to sustain the powerful velocity of the liquid element which

seemed at every moment to lift me from my feet, I reached the opposite bank, having had the water well nigh to my hips, but though the water was icy cold, covered with perspiration and panting for breath and my heart beating violently. A few minutes were spent in drying ourselves from our drenching, after which we directed our steps to the next crossing, which we found worse than the former. Here we stood at the mouth of the Cañon, from which the Taiay, nearly fifty feet wide, burst forth at the rate of thirteen miles an hour. Some of the Indians formed a chain, taking each other by the hand and marching in a line which extended downward with the current. Preceded by an Indian packer and followed by another, I resolutely marched

OUT INTO THE TORRENT

which seemed as if boiling around me. I was very successful until I found myself within a few yards of the other bank, when the velocity of the water forced my feet so wide apart that I felt I could hold the ground no longer. One of my knees bent in spite of me, notwithstanding all the efforts I made to brace myself up against the whirling, dashing torrent. One of the Indians saw the danger I was in and reached me his hand, and so I found my way out of the wild and furious stream. All of my companions behaved most gallantly and appeared to encounter less trouble and difficulty than I experienced. We now entered the narrow gorge through which the Taiay flows, marching most of the time due north and on the right or eastern bank, going up stream of the river. We crossed it again and again, passed several of the tributaries, sometimes on logs, at others wading through the water.

"At last, about 6 p.m., wearied and hungry, we arrived at the foot of the glacier, the principal feeder, I presume, of the Taiay, and there we saw a splendid camping place made by Nature, consisting of immense boulders so arranged that they gave perfect shelter both from wind and from rain. This place is called Sheep Camp, because I suppose it used to be the favourite resort of mountain sheep, and in one part of it the boulders were so ingeniously placed alongside of one another that they form a perfect hiding place, called by the Indians 'Stone House.'

"The next morning, July 26th, we were all up at four o'clock and left Sheep Camp a little after six full of courage and eagerness to reach and pass the summit. Here the ascent became very steep until we stood at the foot of an almost perpendicular wall formed of rocks, boulders and stones of every

description, the top of which appeared to be lost in the clouds. It was a novel sight to see our Indian packers ascending the natural ladder, clambering the best they could, helping themselves with poles and now and then with their hands, and appearing at some distance as if standing one on the head of the other, the highest ones disappearing in the fog. The summit is said to be 3,800 feet high. We reached it at six o'clock p.m. The view is decidedly beautiful. To the south we commanded the view of the Cañon through which we had painfully travelled, the snow-capped mountains on the side of Lynn Canal forming the background. East and west of us were high peaks, which, however, were hid from our sight by clouds and thick fog, and north of us lay the extensive country of the Yukon, and a red looking peak touring above the rest of the mountains, the foot of which, as we saw afterwards, was

WATERED BY THE GREAT RIVER

of Alaska. At our feet lay a carpet of snow and ice of dazzling whiteness, and below still, a beautiful lake, with azure water and the edges covered with ice. If, as it appears reasonable, we consider that lake—Crater Lake—as the source of the Yukon, then it is a remarkable coincidence that I saw the Yukon the first time this year on the same feast that I did in 1877, the feast of St. Anne."

In that year the Archbishop went into the country from St. Michael's at the mouth of the Yukon. His reason, he said, "in coming this way lay in the object he had in view of visiting new regions and of exploring countries never before visited, and labouring among natives never preached to by missionaries of any denomination.

"Great care was needed to pass the snow and ice, which formed a steep incline from the edge of the mountain to the edge of the lake. A single mis-step would have sent us sliding down, and once started, there was no possibility of stopping before reaching the edge of the lake below. Fortunately, by extreme caution, we avoided all accidents and got safely over the dangerous spot. We had scarcely got over the summit when we met two white men returning for their sled, which we had noticed a few minutes before.

"These two men had been abandoned before reaching the summit by their Indian packers and were now themselves attending to their own packing, and as I afterwards saw, they got along remarkably well. After marching down the hill, either on the bank of the river that flows out of the Crater

Lake or at a short distance from it, we reached the shores of a small lake—Linderman Lake—some six miles long by one mile wide, and camped at the mouth of the river we had been following all day long. It was about 3 p.m. when we reached the lake, having made in a little less than three days a trip of only twenty nine miles from Healey's Camp at the mouth of the Taiay. Next day a serious disappointment happened to us. Antoine Prevost, who had followed us from Juneau and on whom we relied to help us in building a raft, left us and disappeared without saying a word. Fortunately three of the miners with whom we had travelled most generously offered their services to help in building a raft and took on their own that part of our luggage which two Indians had left behind, after taking the rest to the foot of Linderman Lake. Here that you may the better understand our movements I ought to describe

THE RUN OF THE RIVER.

Crater Lake, as I have already mentioned, lies this side, that is, northeast of the divide, and is the first reservoir containing water that empties into the Behring Sea, a distance of more than 2,000 miles the way the river flows. From this lake an impetuous torrent rushes foaming through a narrow channel and empties into Linderman Lake, which is fed also by another farther west. There is a northwest current in this lake plainly visible, and it finds its outlet through a narrow pass ir. which the water furiously dashes over rocks and flows into Bennett Lake. The river furnishing the link between Bennett Lake and Linderman is less than a mile long. It is not safely navigable and is consequently avoided by a portage called Perrier Portage. Lake Bennet, some twenty-seven miles long, discharges itself through a short river into Lake Nares, and this one into Tagish Lake, after which the river runs swiftly through narrow cañons until it reaches Lake Le Barge. Past Lake Le Barge the river follows a uniform course, receiving several very large tributaries, until after uniting itself with Stewart River, it definitely receives the name Yukon and flows placidly toward the Behring Sea.

"I left our camp and our party at the head of Linderman Lake in a small canoe with two Indians to remain at the foot of the same lake some six miles distant and to keep an eye on the baggage which those Indians had already conveyed there in their canoes. The next day Father Robaut joined me, arriving also in a canoe and bringing my altar so that on the following morning, for the first time, I had the happiness to

celebrate the holy sacrifice of the mass on the headwaters of the Yukon where I believe no mass had ever been celebrated before.

"But where was I? Was I still in Alaska, inside of the line that runs parallel with the coast, or was I in the vicarate apostolic of British Columbia, or in my own diocese in the far end of the Northwest Territories of the Dominion? This is difficult to determine. At all events, before leaving the place I nailed to a tree the following inscription:

"Archbishop of Victoria, V.I., accompanied by Fathers Tosi and Robant, camped here and offered the holy sacrifice, July 30th, 1886."

"The miners who had traveled with us here divided into two parties, each party building a raft for itself at the head of Linderman Lake, because the timber was not long enough to be sawn into planks to make a boat.

"The next day Father Tosi and Fuller arrived with the other party of miners on a raft. That day we had a sumptuous repast on a duck killed by Fuller. Four days previous it was Father Robaut that shot our dinner for us, in the shape of a partridge. After some deliberation it was decided that the three miners, with Father Robaut and Fuller, should preceed on a raft to a place where the size of the timber would justify them in stopping for the construction of the boat. They went twelve miles distant, camping on the west shore of Bennett Lake, and began to saw planks with their whip-saw." After referring with numerous interesting illustrations from his personal experience to the plentiful supply of both game and fish, the former principally bear and mountain sheep, in the region which they had reached, the Archbishop in his diary proceeds:

"Without delay we loaded our boats with all our stuff and returned at once, reaching the camp where we had left the two miners on Thursday morning. We discharged our cargo and the miners placed on board of our boat all that part of our baggage which they had been compelled previously to put ashore and leave in my charge, and as Father Losi had been left alone on so many days, I volunteered

TO BE A HERMIT

in my turn; so that the two miners left with Father Tosi, Father Robaut and Fuller, leaving me alone to watch over our baggage. The arrangement was that as soon as the

miners had reached their new camping place, the boat would undergo a thorough overhauling, and after being made safe and watertight should be brought back to my camp to load our baggage and to make a definite start down the lakes and the Yukon. During my lonely stay at that camp on the shores of Lake Bennett nothing remarkable occured except a visit I received from four miners who had travelled overland thirteen days from the Salmon River, being nearly starved to death. I gave them supper, as many provisions as they needed to reach Juneau, and they were very grateful indeed, particularly one who hailed from Ireland and whose name was Harrington. It was nothing but shortness of provisions that drove them from their camping ground. Their prospects were good, but the water remained too high to allow them much work in the shape of mining. They said they intended to return next spring a little earlier than they had done this year. To complete my account of my lonely stay at camp No. 3 on the lakes I must say that I availed myself of the absence of others to subject my clothing to washing and repairing. So Saturday, August 14, was a general washing day, not only the altar linen but towels, handkerchiefs, etc., underwent a thorough cleansing. If you had seen my clothes pins you would have been very much amused; some of them burst, but of course my discomfiture was all to myself. Monday, August 16, was general mending day. I had to remain under my blankets to subject some of my clothes to necessary repairs; perfectly safe from any intruders' visit. I hope you will pardon me the minuteness of these private details. They serve at any rate to give a complete description of a missionary's life in a new country. The aspect of the country is grand beyond description. The mountains on either side of the lake are lofty,

SHAGGY, RUGGED AND STEEP,

"They range, I presume, from three to four thousand feet above the level of the sea. Balsam, fir, hemlock, alder, cottonwood and willow are on the slopes of the mountains. I saw wild salmon berries, etc., I noticed also some rose bushes, but the flowers were not yet open. Eagles, gulls, ducks, partridges, robins, kingfishers, swallows, some other birds and some singing birds gave a lively appearance to the country, even around the lakes. Bears are numerous, so are also ground squirrel, rabbits and mountain sheep. Father Tosi saw an animal like a very large cat standing on the other side of the river connecting Linderman and Bennett lakes, but the shouting of some Indians frightened it away. It is supposed

to be a lynx. Finally, the abundance of fish is literally incredible. To my great joy my lonely stay on the west shore of Bennett Lake was brought to an end on Thursday, August 19th, by the return of Father Tosi, Robaut and Fuller in our own boat, which was now strong and water-tight and capable of carrying us down the Yukon River. We made a definite start the following day, Friday, August 20th, followed by the two miners in their own boat.

"On Saturday evening we camped at the foot of Bennett Lake. We reached the foot of Tagish Lake the following evening, passed Lake Marsh on Monday and entered the river that connects Lake Marsh with Lake Le Barge about noon on the same day.

"It was on the river between Marsh, or Mud Lake, and Lake Le Barge that we met the most serious obstacle to navigation in the shape of a succession of rapids about four miles long. These rapids are between two cañons—Miles Cañon and White Horse Cañon. Each cañon is less than one mile long, and they necessitated, consequently, two portages, the packing over which was done by ourselves."

The Archbishop, after describing the rapids, continues:—

"We left camp at the foot of White Horse on the afternoon of the same day, killed four ducks and went into camp two miles below the mouth of Takeena River. Next day, August 27th, we camped at the head of Lake Le Barge, which is about thirty-two miles long, and was crossed by us on Saturday, August 28th. Finally starting again on Monday, which was yesterday, we made sixty-five miles in eight hours, travelling not infrequently at the rate of ten miles an hour. A loon brought down by the gun of Fuller gave us last night our supper. We are now about to push on northward, and are within a few days' navigation from the mouth of the Stewart River, where we shall decide on selecting our winter quarters."

Arriving at the Big Salmon (or Ton) River on the 31st August in the year referred to, the Archbishop said adieu to Fathers Tosi and Robaut and continued down the river, and it is a matter worthy of note that he camped on the present site of Dawson City and celebrated the mass of the Holy Angels.

The following entries clearly show the growing insanity of Fuller:

"21st October.—Colere de Fuller au dejeuner, m'accuse de vouloir le ruiner. (Anger of Fuller at breakfast; accuses me of trying to ruin him.)

12th November.—Fuller m'accuse d'avoir refusé de lui apprendre le Russe. (Accuses me of refusing to teach him the Russian language.)

"Sunday, 21st—Fuller me demande pourquoi j'ai envoye un de nos Indiens en avant pour bruler le traineau et lui—meme. (Fuller asks me why I sent an Indian ahead of him to burn up our sleigh and himself, Fuller.)

"24th November.—Fuller veut etre tué par moi tout-de-suite (Fuller wishes me to have him killed at once.")

THE LAST ENTRY.

Fuller lui dit que Walker* lui avait prédit que je lui donerai une mauvaise renommée. (Fuller said that Walker* predicted that I would give him a bad name.")

Proceeding on his journey the Archbishop at length reached a point 261 miles from salt water, known as

MELOZIKAKAT.

Winter had now set in, and the whole Yukon land was merged in solemn darkness, and covered deep in a mantle of snow and ice.

On the fatal morning of November 28th, the Archbishop slept on; he had written his last note, but Fuller was astir at an early hour (3 a.m.) "He could not sleep," he said. Wild hallucinations, intensified by the solitude and the oppressive stillness of the place, haunted him; every object seemed to him an enemy.

Peering into the darkness the Indian guides saw him attending to the fire, but nothing happening to awaken their suspicions they drew back to their blankets. All was still as the grave. In a little while they heard Fuller say: "Bishop, it is time to get up," and then came the loud report of a rifle —the Archbishop fell lifeless on the frozen ground—Fuller had deliberately shot him.

Little more remains to be told. The murderer was secured by the Indians and carefully watched through the gloom of the winter. Close by, resting on the ice, his rude coffin covered with snow, lay the body of the martyred bishop. And when at last spring came round and the bonds of the great river broke, his body was taken to Fort Yukon and then to St. Michael's, where it lay until the autumn of the following year. A United States gunboat arriving conveyed it to Victoria where it now lies under the cathedral altar. *Requiescat in pace.*

---

*A trader.

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